FHWA-FLA-EIS-13-01-F
Federal Highway Administration
Florida Division

ADMINISTRATIVE ACTION
FINAL ENVIRONMENTAL IMPACT STATEMENT / RECORD OF DECISION

U.S. Department of Transportation
Federal Highway Administration
and
Florida Department of Transportation

Financial Project Number: 249614-4-22-01
Federal Aid Project Number: Not Assigned
Efficient Transportation Decision Making Number: 7800

SR 997 / SW 177th Avenue / Krome Avenue South
from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive)
Miami-Dade County, Florida

This project proposes roadway and safety improvements along a ten-mile segment of SR 997/SW 177th Avenue/Krome Avenue from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive) in Miami-Dade County, Florida. The existing facility is a two-lane undivided rural roadway. The proposed action is to improve safety by providing four-lane divided rural and suburban sections, additional capacity, and implementing access management criteria.

For the foregoing reasons contained in this *Final Environmental Impact Statement / Record of Decision*, and based upon consideration of all the social, economic, and environmental evaluation contained in this *Final Environmental Impact Statement / Record of Decision*, with the input received from other agencies, organizations, and the public; the FHWA has determined that the *Draft Environmental Impact Statement* preferred alternative (Alternative 5 with minimization treatment), namely the Four-Lane Divided Rural/Suburban Roadway (with minimization treatment), is hereby the selected alternative. Therefore it is my decision to adopt this alternative as the proposed action for this project.

Submitted Pursuant to 42 USC 4332 (2)(c).

Dec. 22, 2014
Date

James Christian
Division Administrator
Federal Highway Administration

A Federal agency may publish a notice in the Federal Register, pursuant to 23 USC §139(l), indicating that one or more Federal agencies have taken final action on permits, licenses, or approvals for a transportation project. If such notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 150 days after the date of publication of the notice, or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.

For additional information contact:

Aileen Bouclé, AICP
Intermodal Systems Development Manager
Florida Department of Transportation
1000 NW 111th Avenue, Room 6111-A
Miami, Florida 33172
Telephone: (305) 470-5201
Facsimile: (305) 470-5205
aileen.boucle@dot.state.fl.us

or

James Christian
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
Florida Division Office
545 John Knox Road, Suite 200
Tallahassee, Florida 32303
Telephone: (850) 553-2200, ext. 2202
Facsimile: (850) 942-9691
James.Christian@dot.gov

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_____ _____
Date Division Administrator
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Intermodal Systems Development Manager
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1000 NW 111th Avenue, Room 6111-A
Miami, Florida 33172
Telephone: (305) 470-5201
Facsimile: (305) 470-5205
aileen.boucle@dot.state.fl.us

or

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Division Administrator
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Federal Highway Administration
Florida Division Office
545 John Knox Road, Suite 200
Tallahassee, Florida 32303
Telephone: (850) 553-2200, ext. 2202
Facsimile: (850) 942-9691
James.Christian@dot.gov

Comments must be received by the District Intermodal Systems Development Manager at the address above
By:_____

TABLE OF CONTENTS

RECORD OF DECISION R-1

1.0 PURPOSE AND NEED FOR ACTION 1-1

1.1 INTRODUCTION 1-1
1.2 PURPOSE AND NEED FOR ACTION 1-4
1.2.1 Background 1-4
1.2.2 Project Needs Within the Study Area 1-6
1.2.2.1 Safety 1-6
1.2.2.2 Capacity 1-9
1.2.2.3 Design Deficiencies 1-10
1.2.3 Area Wide Needs 1-11
1.2.3.1 Evacuation Routes and Emergency Services 1-11
1.2.3.2 Consistency with Federal, State, or Local Government Authority 1-12
1.2.4 Social Demand or Economic Developments 1-14
1.2.5 Modal Interrelationships 1-15

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION 2-1

2.1 PROJECT DESCRIPTION 2-1
2.1.1 Existing Conditions 2-1
2.2 ALTERNATE CORRIDORS EVALUATED 2-4
2.2.1 Alternate Corridor 1: SW 187th Avenue/Redland Road 2-8
2.2.2 Alternate Corridor 2: SW 182nd Avenue/Roberts Road 2-10
2.2.3 Alternate Corridor 3: SW 177th Avenue/Krome Avenue 2-12
2.2.4 Alternate Corridor 4: SW 167th Avenue/Tennessee Road 2-15
2.2.5 Evaluation of Alternate Corridors 2-17
2.2.5.1 Alternate 1 (SW 187th Avenue) 2-17
2.2.5.2 Alternate 2 (SW 182nd Avenue) 2-17
2.2.5.3 Alternate 3 (Krome Avenue/SW 177th Avenue) 2-17
2.2.5.4 Alternate 4 (SW 167th Avenue) 2-18
2.2.5.5 Alternate Comparison 2-18
2.2.5.6 Project Termini 2-19
2.3 PROJECT ALTERNATIVES 2-22
2.3.1 No-Build Alternative 2-22
2.3.2 Transportation System Management Alternative 2-23
2.3.3 Action Plan Alternative 2-23
2.3.4 Proposed Build Alternatives 2-28
2.3.4.1 Initial Evaluation of Conceptual Typical Sections 2-28
2.3.4.2 Final Development of Typical Sections for Alternatives Analysis 2-32
2.4 STRUCTURES 2-42
2.4.1 Bridge 2-42
2.4.2 Culvert 2-43
2.5 ALTERNATIVES EVALUATION MATRIX 2-45
2.6 SELECTION OF THE PREFERRED ALTERNATIVE 2-54

3.0 AFFECTED ENVIRONMENT 3-1
3.1 SOCIAL AND ECONOMIC 3-1
3.1.1 Population, Community Growth, and Economic Characteristics 3-1
3.1.2 Community Services 3-4
3.1.2.1 Churches and Religious Institutions 3-4
3.1.2.2 Schools 3-4
3.1.2.3 Fire and Police Protection 3-5
3.1.2.4 Medical and Emergency Operation Facilities 3-5
3.1.2.5 Other Public Buildings and Facilities 3-5
3.1.3 Land Use 3-11
3.1.4 Utilities and Railroads 3-14
3.1.4.1 Utilities 3-14
3.1.4.2 Lighting 3-15
3.1.4.3 Railroads 3-15
3.2 CULTURAL AND HISTORICAL RESOURCES 3-16
3.2.1 Archeological and Historic Resources 3-16
3.2.1.1 Archeological Resources 3-16
3.2.1.2 Historic Resources 3-16
3.2.2 Section 4(f) Resources 3-17
3.2.3 Recreational and Parklands 3-20
3.3 NATURAL AND PHYSICAL RESOURCES 3-23
3.3.1 Bicycle and Pedestrian Facilities 3-23
3.3.2 Visual / Aesthetics 3-23
3.3.3 Air Quality 3-24
3.3.4 Noise 3-27
3.3.5 Wetlands/Surface Waters 3-29
3.3.6 Water Quality 3-36
3.3.7 Outstanding Florida Waters 3-36
3.3.8 Contamination 3-37
3.3.9 Wild and Scenic Rivers 3-37
3.3.10 Floodplains 3-47
3.3.11 Coastal Zone Consistency 3-47
3.3.12 Wildlife and Habitat 3-49
3.3.12.1 Upland Communities 3-50
3.3.12.2 Wetland / Surfacewater Communities 3-51
3.3.12.3 Other Notable Upland Communities in Close Proximity to the Project 3-51
3.3.12.4 Protected Species and Habitats 3-52
3.3.12.5 Designated Habitats 3-58
3.3.12.6 Other Notable Sites with No Special Designation 3-64
3.3.13 Essential Fish Habitat 3-66
3.3.14 Farmlands 3-66
4.0 ENVIRONMENTAL CONSEQUENCES 4-1
4.1 SOCIAL AND ECONOMIC IMPACTS 4-1
4.1.1 Population and Community Growth Characteristics 4-1

4.1.2 Economic Conditions 4-1
4.1.3 Community Services 4-2
4.1.4 Community Cohesion 4-3
4.1.5 Land Use 4-5
4.1.6 Utilities and Railroads 4-5
4.1.6.1 Utilities 4-5
4.1.6.2 Lighting 4-6
4.1.6.3 Railroads 4-6
4.2 CULTURAL AND HISTORICAL RESOURCES IMPACTS 4-6
4.2.1 Archeological and Historical 4-6
4.2.1.1 Archeological Resources 4-6
4.2.1.2 Historical Resources 4-6
4.2.2 Section 4(f) Resources 4-8
4.2.3 Recreational and Parklands 4-12
4.3 NATURAL AND PHYSICAL RESOURCES IMPACTS 4-13
4.3.1 Bicycle and Pedestrian Facilities 4-13
4.3.2 Visual / Aesthetics 4-13
4.3.3 Air Quality 4-14
4.3.3.1 Construction 4-15
4.3.3.2 Agency Coordination 4-15
4.3.4 Noise 4-16
4.3.4.1 Construction Noise and Vibration 4-20
4.3.5 Wetlands/Surface Waters 4-29
4.3.5.1 Indirect Impacts 4-30
4.3.5.2 Elimination and Reduction (Avoidance and Minimization) of Impacts 4-31
4.3.5.3 Conceptual Mitigation 4-31
4.3.5.4 Environmental Permitting 4-32
4.3.6 Water Quality 4-32
4.3.7 Outstanding Florida Waters 4-34
4.3.8 Contamination 4-34
4.3.9 Wild and Scenic Rivers 4-35
4.3.10 Floodplains 4-35
4.3.11 Coastal Zone Consistency 4-36
4.3.12 Wildlife and Habitat 4-37
4.3.12.1 Owaissa Bauer Pineland Preserve Addition No. 1 4-43
4.3.12.2 Florida Audubon Society Property 4-57
4.3.13 Essential Fish Habitat 4-61
4.3.14 Farmlands 4-61
4.3.15 Construction 4-62
4.3.16 Global Climate Change 4-62
4.3.17 Indirect Impacts 4-64
4.3.18 Cumulative Impacts 4-77

5.0 COMMENTS AND COORDINATION 5-1

5.1 PUBLIC INVOLVEMENT PROGRAM 5-1
5.2 AGENCY COORDINATION 5-1

5.2.1 Notice of Intent *5-1*
5.2.2 Advance Notification Package *5-1*
5.2.2.1 Advance Notification Agency Mailing List 5-1
5.2.2.2 Advance Notification Summary of Agency Comments 5-3
5.2.3 Efficient Transportation Decision Making Screening *5-6*
5.2.4 Summary of Agency Comments and Florida Department of Transportation Responses *5-9*
5.2.4.1 Federal Agencies 5-9
5.2.4.2 State Agencies 5-13
5.2.5 Environmental Agency Meetings *5-23*
5.3 COMMUNITY OUTREACH 5-23
5.3.1 Citizen's Advisory Committee *5-27*
5.3.2 Project Newsletters *5-27*
5.3.3 Project Website *5-28*
5.3.4 Public Meetings *5-28*
5.3.4.1 Public Information Workshop 5-28
5.3.4.2 Public Hearing 5-29

6.0 COMMITMENTS AND RECOMMENDATIONS 6-1

6.1 COMMITMENTS 6-1
6.2 RECOMMENDATIONS 6-3

7.0 LIST OF PREPARERS 7-1

8.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT 8-1

8.1 ELECTED OFFICIALS 8-1
8.2 FEDERAL AGENCIES 8-1
8.3 STATE AGENCIES 8-2
8.4 TRIBAL GOVERNMENTS 8-2
8.5 LOCAL AGENCIES 8-2

9.0 INDEX 9-1

APPENDICES

Appendix A	SR 997/Krome Avenue Existing Level of Service Study
Appendix B	SR 997/Krome Avenue Future Conditions Analysis and Mitigation Measures
Appendix C	Miami-Dade County Resolutions
Appendix D	High Crash Segment Lists
Appendix E	Planning Consistency Form
Appendix F	Design Exception
Appendix G	State Historic Preservation Officer Correspondence
Appendix H	U.S. Fish and Wildlife Service and Florida Fish and Wildlife Conservation Commission Advance Notification Responses
Appendix I	U.S. Fish and Wildlife Service and Florida Department of Agriculture and Consumer Services Coordination Logs
Appendix J	Miami-Dade County Schools Correspondence
Appendix K	Section 4(f) Determination of Applicability Agency Correspondence
Appendix L	Federal Highway Administration Section 4(f) *de minimis* Finding Concurrence
Appendix M	Efficient Transportation Decision Making Programming Screen Summary Report
Appendix N	Water Quality Impact Evaluation
Appendix O	U.S. Environmental Protection Agency Advance Notification Response – Sole Source Aquifer Letter
Appendix P	Florida State Clearinghouse Advance Notification Response (including Coastal Zone Consistency Letter)
Appendix Q	U.S. Fish and Wildlife Service Endangered Species Act Section 7 (c) Correspondence and Concurrence Letters
Appendix R	Miami-Dade County Department of Environmental Resources Management Environmentally Endangered Lands Program Coordination
Appendix S	Miami-Dade County Department of Environmental Resources Management "Statement of Significance" Letter
Appendix T	Farmlands Conversion Impact Rating Form and Agency Correspondence
Appendix U	Public Involvement Program / Meetings Table
Appendix V	Notice of Intent
Appendix W	Advance Notification Package and Comments
Appendix X	Federal and State Environmental Permit Review Agencies Correspondence
Appendix Y	Citizen's Advisory Committee Agendas and Meeting Minutes
Appendix Z	Public Information Workshop Materials
Appendix AA	Public Hearing Materials
Appendix BB	Public Hearing Transcript
Appendix CC	*Draft Environmental Impact Statement* Comments/Correspondence
Appendix DD	*Draft Environmental Impact Statement* Comment/Response Matrix
Appendix EE	*Draft Environmental Impact Statement* Post-Comment Period Comments/Correspondence
Appendix FF	*Draft Environmental Impact Statement* Post-Comment Period Comment/Response Matrix

LIST OF FIGURES

Figure R-1 Location Map R-2
Figure 1-1 Location Map 1-3
Figure 1-2 Safety Ratios (Weighted Averages) 1-7
Figure 2-1 Existing Two-Lane Rural Typical Roadway Section 2-3
Figure 2-2a Alternate Corridors 2-5
Figure 2-2b Alternate Corridors 2-6
Figure 2-2c Alternate Corridors 2-7
Figure 2-3 Alternate Corridor 1 Typical Section 2-9
Figure 2-4 Alternate Corridor 2 Typical Section 2-11
Figure 2-5 Alternate Corridor 3 Typical Section 2-14
Figure 2-6 Alternate Corridor 4 Typical Section 2-16
Figure 2-7 Action Plan (Original) Proposed Typical Roadway Section 2-26
Figure 2-8 Action Plan (Modified) Proposed Typical Roadway Section 2-27
Figure 2-9 Alternative 1 Proposed Typical Roadway Section (Rural) 2-36
Figure 2-10 Alternative 2 Proposed Typical Roadway Section (Rural) 2-37
Figure 2-11 Alternative 3 Proposed Typical Roadway Section (Rural) 2-38
Figure 2-12 Alternative 4 Proposed Typical Roadway Section (Rural) 2-39
Figure 2-13a Alternative 5 Proposed Typical Roadway Section (Suburban) 2-40
Figure 2-13b Alternative 5 Proposed Typical Roadway Section (Rural) 2-41
Figure 2-14 Proposed Bridge Typical Section 2-44
Figure 2-15 Alternative 5 at Owaissa Bauer with Minimization Treatment 2-56
Figure 3-1 Churches and Religious Institutions 3-6
Figure 3-2 Schools 3-7
Figure 3-3 Fire Stations 3-8
Figure 3-4 Hospitals 3-9
Figure 3-5 Libraries 3-10
Figure 3-6 Land Use Map 3-13
Figure 3-7 CSX Railroad Crossing North of 232nd Street 3-15
Figure 3-8 Potential Section 4(f) Resources 3-19
Figure 3-9 Recreational and Parklands 3-22
Figure 3-10 Air Screening Test Location 3-26
Figure 3-11a Surface Water Location Map (Former Borrow Pit – SW 1) 3-33
Figure 3-11b Surface Water Location Map (C-102 Canal – SW 2) 3-34
Figure 3-11c Surface Water Location Map (C-103 Canal – SW 3) 3-35
Figure 3-12 Location of Potential Contamination Concerns 3-39
Figure 3-12a Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives 3-40
Figure 3-12b Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives 3-41
Figure 3-12c Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives 3-42
Figure 3-12d Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives 3-43

LIST OF FIGURES

Figure 3-12e Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives 3-44
Figure 3-12f Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives 3-45
Figure 3-12g Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives 3-46
Figure 3-13 Federal Emergency Management Agency Flood Insurance Rate Map Zones and Federal Emergency Management Agency 100-year Base Flood Elevations 3-48
Figure 3-14 Owaissa Bauer Pineland Preserve Addition No. 1 Plant Survey Results (2006) Overlaid with the Build Alternatives 3-61
Figure 3-15a Owaissa Bauer Pineland Preserve Addition No. 1 Plant Survey Results (2010) Overlaid with the Build Alternatives 3-62
Figure 3-15b Owaissa Bauer Pineland Preserve Addition No. 1 Plant Survey Results (2010) Overlaid with the Build Alternatives 3-63
Figure 3-16 Florida Audubon Society Property Tree Survey and Protected Plant Species Survey Results (2012) 3-65
Figure 4-1a Modeled Noise Receptor Locations and Noise Barriers Under Consideration 4-21
Figure 4-1b Modeled Noise Receptor Locations and Noise Barriers Under Consideration 4-22
Figure 4-1c Modeled Noise Receptor Locations and Noise Barriers Under Consideration 4-23
Figure 4-1d Modeled Noise Receptor Locations and Noise Barriers Under Consideration 4-24
Figure 4-1e Modeled Noise Receptor Locations and Noise Barriers Under Consideration 4-25
Figure 4-1f Modeled Noise Receptor Locations and Noise Barriers Under Consideration 4-26
Figure 4-2 Owaissa Bauer Pineland Preserve Addition No. 1 Impacts by Proposed Build Alternative 4-44
Figure 4-3 Owaissa Bauer Pineland Preserve Addition No. 1 Avoidance Alternative . 4-46
Figure 4-4 Proposed Owaissa Bauer Minimization Treatment (Typical) 4-48
Figure 4-5 Owaissa Bauer Pineland Preserve Addition No. 1 Impacts by Proposed Build Alternative (with Minimization Treatment) 4-50
Figure 4-6 View of Weedy Herbaceous Disturbed Area (at Owaissa Bauer Pineland Preserve Addition No. 1) 4-51
Figure 4-7 Survey of Carter's Small-Flowered Flax (*Linum carteri* var. *carteri*) at Owaissa Bauer Pineland Preserve Addition No. 1 (2014) 4-56
Figure 4-8 Florida Audubon Society Property Tree Survey (2012) 4-59
Figure 4-9 CDMP Adopted 2015 and 2025 Land Use Plan Map 4-67
Figure 4-10 Urban Development Boundary Map 4-73
Figure 4-11 Past, Present, and Reasonably Foreseeable Future Actions with Cumulative Impacts on the Areas of Influence of the Krome South project 4-79

LIST OF TABLES

Table R-1 Summary List of Meetings Held R-3
Table R-2 Funding Summary R-29
Table R-3 Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses R-33
Table R-4 Summary of Substantive Comments Received After the Draft Environmental Impact Statement Comment Period and FDOT Responses R-44
Table 1-1 Crash Data by Severity – SR 997/Krome Avenue from SW 296th Street to SW 136th Street 1-8
Table 1-2 Crash Data by Type of Crash – SR 997/Krome Avenue from SW 296th Street to SW 136th Street 1-9
Table 1-3 Funding Summary 1-14
Table 2-1 Corridor Evaluation Matrix 2-21
Table 2-2 Project Needs and Objectives Matrix 2-46
Table 2-3 Alternatives Evaluation Matrix 2-50
Table 3-1 Population Characteristics for the State of Florida, Miami-Dade County, and the Project Corridor 3-2
Table 3-2 Socioeconomic Information from Traffic Analysis Zones Data 3-3
Table 3-3 Krome Avenue at Eureka Drive Traffic Data 3-25
Table 3-4 Noise Abatement Criteria 3-27
Table 3-5 Surface Water Type and Descriptions 3-31
Table 3-6 Areas of Potential Contamination Concerns 3-38
Table 3-7 Listed Species Potentially Occurring Within the Project Study Corridor 3-53
Table 3-8 Protected Plants Observed Within the Owaissa Bauer Pineland Preserve Addition No. 1 Portion of the Krome Avenue Roadway Study Corridor 3-60
Table 3-9 Protected Plants Observed Within the Florida Audubon Society Property (2012) 3-64
Table 4-1 Community Service Facility Impacts 4-2
Table 4-2 Potential Relocations and Right-of-Way Acquisition Cost per Build Alternative 4-4
Table 4-3 Section 4(f) Use/Findings 4-12
Table 4-4 Carbon Monoxide Concentrations 4-15
Table 4-5 Modeled Noise Receptor Locations and Noise Analysis Results 4-27
Table 4-6 Noise Barrier Summary Table 4-19
Table 4-7 Design Year (2040) Noise Impact Contour Distances 4-20
Table 4-8 Direct Surface Water Impacts 4-30
Table 4-9 Anticipated Environmental Permits 4-32
Table 4-10 Federally-Listed Species with the Potential to Occur within the Project Area 4-37
Table 4-11 Encroachment into Owaissa Bauer Pineland Preserve Addition No. 1 per Build Alternative 4-43
Table 4-12 Impacts with Minimization Treatment per Alternative 4-49
Table 4-13 Vegetation Community Impacts within Owaissa Bauer Pineland Preserve Addition No. 1 4-51
Table 4-14 Encroachment into Florida Audubon Society Property per Build Alternative 4-57

LIST OF TABLES

Table 4-15 Vegetative Canopy Impacts within and Directly Adjacent to Florida Audubon Society Property 4-58
Table 4-16 Acreage of Unique Farmland Impact Associated with Right-of-Way Acquisition for Road Widening 4-61
Table 4-17 Krome Avenue (South) Impact Topics and Associated Areas of Influence 4-78
Table 4-18 Past, Present, and Reasonably Foreseeable Future Actions with Cumulative Impacts on the Areas of Influence of the Krome South project 4-80
Table 5-1 Efficient Transportation Decision Making Agency Degree of Effect Ratings 5-7
Table 5-2 Efficient Transportation Decision Making Summary Degree of Effect Ratings 5-8
Table 5-3 Summary List of Meetings Held 5-24
Table 5-4 Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses 5-30
Table 5-5 Summary of Substantive Comments Received After the Draft Environmental Impact Statement Comment Period and FDOT Responses 5-42
Table 7-1 Final Environmental Impact Statement List of Preparers 7-1

LIST OF ACRONYMS

AN	Advance Notification
BMPs	Best Management Practices
CAC	Citizen's Advisory Committee
CDMP	Comprehensive Development Master Plan
CFP	Cost Feasible Plan
CO	Carbon Monoxide
CRAS	Cultural Resource Assessment Survey
CSER	Contamination Screening Evaluation Report
DCA	Department of Community Affairs
DERM	Department of Environmental Resources Management[1]
DRER EMRD	Department of Regulatory and Economic Resources, Environmental Monitoring and Restoration Division
DRI	Development of Regional Impact
EAR	Evaluation and Appraisal Report
EEL	Environmentally Endangered Lands
ESBA	Endangered Species Biological Assessment
EST	Environmental Screening Tool
ETDM	Efficient Transportation Decision Making
FAC	Florida Administrative Code
FDACS	Florida Department of Agriculture and Consumer Services
FDEO	Florida Department of Economic Opportunity
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIHS	Florida Intrastate Highway System
FIRM	Flood Insurance Rate Map
FLUCFCS	Florida Land Use, Cover, and Forms Classification System
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information Systems
LOS	Level of Service
LRTP	Long Range Transportation Plan
LUST	Leaking Underground Storage Tank
MDPROS	Miami-Dade County Parks, Recreation, and Open Spaces Department
MPH	Miles Per Hour
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards

[1] In 2012, the Miami-Dade County Department of Environmental Resources Management (DERM) was renamed to the Miami-Dade County Department of Regulatory and Economic Resources (DRER), Environmental Monitoring and Restoration Division (EMRD); however, both the old and new names are used throughout, depending on the timeframe of the reference.

LIST OF ACRONYMS

NAC	Noise Abatement Criteria
NAM	Natural Areas Management
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PD&E	Project Development and Environment Study
PER	Preliminary Engineering Report
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Officer
SHS	State Highway System
SIS	Strategic Intermodal System
STIP	State Transportation Improvement Program
TIP	Transportation Improvement Program
TSM	Transportation System Management
UDB	Urban Development Boundary
USACE	United States Army Corps of Engineers
USC	U.S. Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
WER	Wetland Evaluation Report

RECORD OF DECISION

State Road Number: SR 997 / SW 177th Avenue / Krome Avenue South

Financial Project Number: 249614-4-22-01

Federal Aid Project Number: Not Assigned

Efficient Transportation Decision Making Number: 7800

County: Miami-Dade

Description: This project proposes roadway and safety improvements along a ten-mile segment of SR 997/SW 177th Avenue/Krome Avenue from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive) in Miami-Dade County, Florida ("Krome South"). The existing facility is a two-lane undivided rural roadway. The proposed action is to improve safety by providing four-lane divided rural and suburban sections, additional capacity, and implementing access management criteria.

This is the *Record of Decision* for the above subject project identified in the Miami-Dade Metropolitan Planning Organization (MPO) 2035 Long Range Transportation Plan (LRTP), as adopted. The need for improvements on this corridor is based on a combination of safety, physical and functional deficiencies within the corridor plus overall capacity needs. The primary objective of the project is to address safety deficiencies along this section of the Krome Avenue corridor. The secondary objectives of the project are to provide additional capacity to accommodate anticipated future area travel demand and address other design deficiencies along the roadway. Additional secondary objectives include maintaining the effectiveness of the corridor as an emergency evacuation route and improving regional connectivity. This *Record of Decision* is made pursuant to the attached *Final Environmental Impact Statement*.

DECISION

The Federal Highway Administration (FHWA) Florida Division, in coordination with the Florida Department of Transportation (FDOT) and in accordance with the National Environmental Policy Act (NEPA) and associated laws, regulations, and orders, proposes the construction of the Krome South project. The selected alternative is Alternative 5 with minimization treatment. The ten-mile project will begin at SW 296th Street (Avocado Drive) and will extend to SW 136th Street (Howard Drive). The location map for the selected alternative can be viewed on page 2 of this *Record of Decision*.

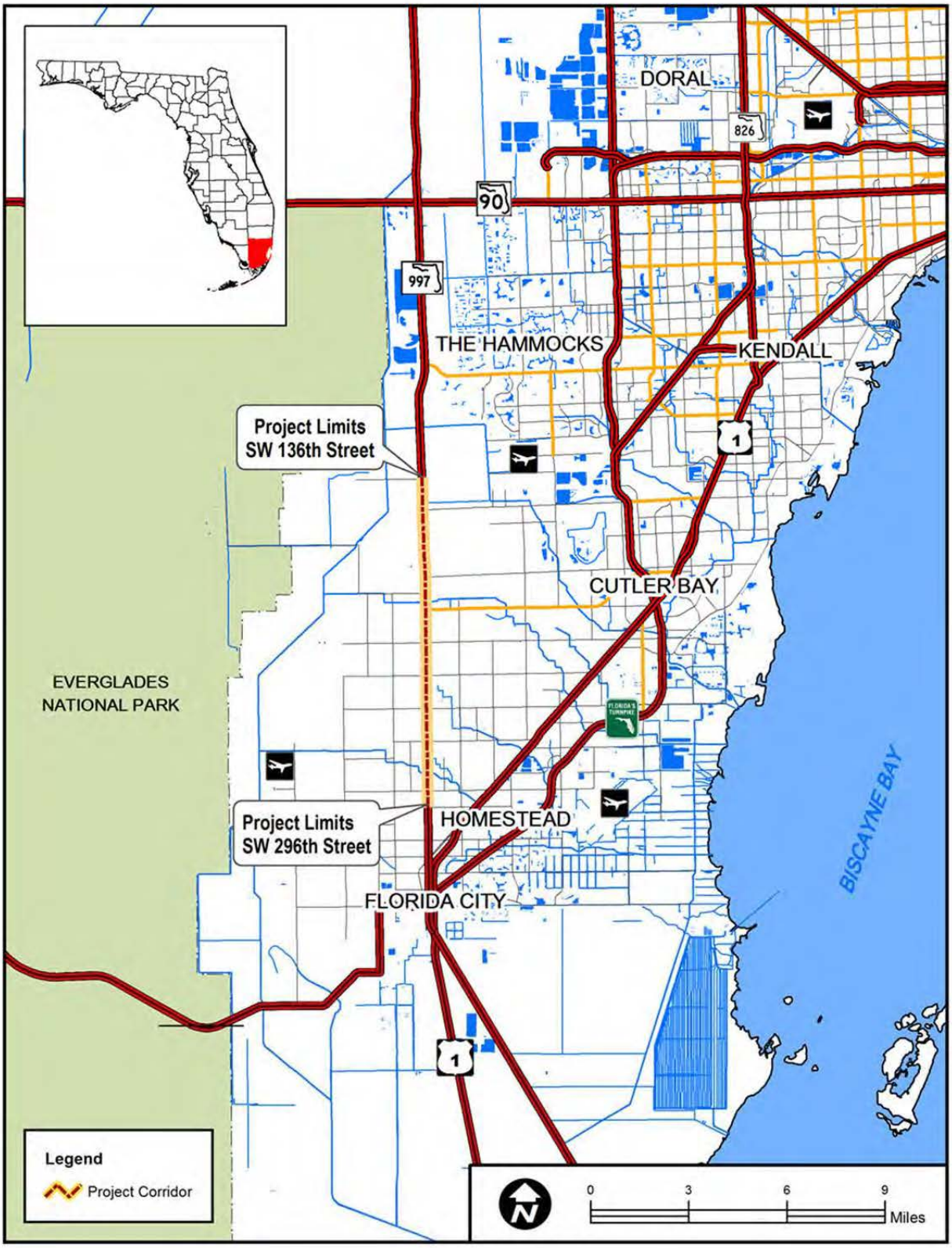

Figure R-1 – Location Map

BACKGROUND

The Krome Avenue corridor has been the subject of many FDOT studies and several applications to amend the Miami-Dade County's Comprehensive Development Master Plan (CDMP), proposing the widening of the roadway from two to four lanes. A detailed history of the studies conducted along the Krome Avenue corridor is provided in this *Final Environmental Impact Statement / Record of Decision*. This NEPA study was conducted for the Krome South project to evaluate and comprehensively examine various alternatives for roadway and safety improvements to a ten-mile segment of Krome Avenue (SR 997/SW 177th Avenue) from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive) in unincorporated Miami-Dade County, Florida (see ***Figure R-1***, above). A corridor analysis was conducted first and then alternatives were developed along the recommended corridor. These alternatives included the No-Build Alternative, a Transportation System Management (TSM) Alternative, Action Plan Alternative, and five build alternatives. The primary focus of this study was to identify the location, type, and size of improvements that would address the deficiencies along this portion of the roadway network in Miami-Dade County. Due to the project's potential for substantial controversy [as identified during the public involvement process and Citizen's Advisory Committee (CAC) meetings], the level of study required to examine project impacts was determined to be an Environmental Impact Statement. The study seeks a solution that most effectively addresses the project needs while minimizing environmental impacts. As discussed in more detail in the following sections, other minor safety projects have been implemented at various intersection locations along the corridor over the past ten years; however, the cumulative effect of those improvements has not completely met the overall need for this project, which is to address safety deficiencies along the entire study segment of the Krome Avenue corridor.

A team consisting of staff from the FDOT Intermodal Systems Development Office plus consultant team members met with numerous stakeholders (see ***Table R-1***) such as area residents, community associations, business owners, and various local and governmental agencies. The purpose of these meetings was to gain valuable insight about the potential impacts that this project might have on the community. Comments, concerns, and suggestions from these stakeholders are documented in the Public Involvement Program and incorporated into the Krome South project as appropriate.

Table R-1 – Summary List of Meetings Held

Meeting Date	Organization Representative(s)	Organization	Represents
10/20/03	Jose 'Pepe' Diaz	Miami-Dade County Commissioner – District 12	County Government
10/23/03	Ken Sorensen	State Representative – District 120	State Government
10/30/03	David Rivera	State Representative – District 112	State Government
10/30/03	Marcelo Llorente	State Representative – District 116	State Government
11/05/03	Debbie Waserman-Shultz	State Senator – District 34	State Government
11/12/03	Joe Martinez	Miami-Dade County Commissioner – District 11	County Government
12/17/03	Mark Woerner, AICP	Miami-Dade County Planning Department	County Government
01/07/04	Bill Losner	1st National Bank of South Florida	Landowners/Farmers

Table R-1 – Summary List of Meetings Held

Meeting Date	Organization Representative(s)	Organization	Represents
01/07/04	Mary Finlan	Greater Homestead/Florida City Chamber of Commerce	Local Businesses
01/08/04	Katy Sorenson	Miami-Dade County Commissioner – District 8	County Government
01/08/04	Redland Citizens' Association	Redland Citizens' Association	Citizens Association
01/14/04	Dennis Moss	Miami-Dade County Commissioner – District 9	County Government
01/22/04	Rudy Garcia	State Senator – District 40	State Government
02/24/04	Richard Alger	Alger Farms, Inc.	Local Business/ Farmers
02/24/04	Hector Hernandez	El Toro Taco	Business Owner
02/26/04	Paul Cardwell	Florida City State Farmers' Market	Farming Industry
02/26/04	Brian Kimball	Ed Kimball & Sons Transportation Services Inc.	Trucking Industry
02/26/04	Eugene Leon, Project Manager	Florida City	City Government
02/26/04	Florida Department of Agriculture and Consumer Services (FDACS)	FDACS	State Government
02/27/04	Juan Carlos Zapata	State Representative – District 119	State Government
03/10/04	Transportation Aesthetics Review Committee	Miami Dade County – MPO Subcommittee	Local Government
03/10/04	Dade County Farm Bureau	Dade County Farm Bureau	Agriculture/Farmers
03/10/04	Katie Edwards	Dade County Farm Bureau	Agriculture/Farmers
03/10/04	Mike Richardson	Vision Council	Economic Development
04/06/04	Jorge Tojeiros	Property Owner	Property Owner
04/07/04	Rick Stauts	City of Homestead Community Redevelopment Agency	City Government
04/07/04	Margarita Mojica	Land Owner/Property Owner	Landowner
04/07/04	Juan Carlos Santiago	Rock & Sod Connection, Inc.	Nursery/Renters
04/30/04	National Park Service	National Park Service, U.S. Department of the Interior	Federal Agency
04/30/04	Luis Silva	Property Owner	Property Owner
04/30/04	Bill Wright	Everglades National Park, National Park Service, U.S. Department of the Interior	Federal Agency
05/03/04	Paul Dimare	Dimare, Inc. (Nursery)	Business Owner
05/13/04	Medora Krome Alleman, et. al.	Concerned Citizens and Nurseries Association	Citizens Association/. Landowner
05/19/04	Community Council #11	Local Community Council (Zoning Board)	Local Government
05/27/04	Homestead / Fl. City Chamber of Commerce	Local Chamber of Commerce	Economic Development
06/08/04	Steve Kirk	Migrant Workers	Migrant Workers
06/14/04	Miguel Uzquiano	Florida Nurseryman & Grower Association	Nursery/Farmers
06/14/04	Alicia Pena	8.5 square mile area	Property Owner
06/30/04	Citizens Transportation Advisory Committee	Citizens Transportation Advisory Committee	Local Government
07/15/04	David Robbins	Americana Village	Homeowners Association
07/21/04	Agencies Roundtable Scoping Meeting	Jurisdictional Agencies (Local, State, and Federal)	Local, State, and Federal Government

Table R-1 – Summary List of Meetings Held

Meeting Date	Organization Representative(s)	Organization	Represents
08/03/04	Dewey Steele	Tropical Fruit Growers Association	Farming Industry
08/03/04	April Gromnicki	Florida Audubon Society	Environmental Organization
08/03/04	Cynthia Guerra	Tropical Audubon Society	Environmental Organization
08/04/04	Mary & Martin Motes	Orchid Growers Association	Orchid Industry
08/09/04	Paul Mulherne	Grove Inn and Guesthouse	Business Owner
08/09/04	Board Members – Carston and Carol Rist	Tropical Audubon Society	Environmental Organization
08/19/04	Richard Grosso	Litigants in the Comprehensive Plan Amendment	Environmental Organization
08/25/04	Hammocks Citizen's Advisory Committee	Citizens Association	Citizens Association
09/16/04	Miccosukee Tribe of Indians of Florida	Sovereign Nation	Federal Agency
10/07/04	Homestead / Florida City Empowerment Zone	Neighborhood Board	Economic Development
12/06/04	Kendall Federation of Homeowners	Homeowners Association	Citizens Association
01/12/05	Comprehensive Everglades Restoration Plan	Comprehensive Everglades Restoration Plan	State Government
02/01/05	Juan Carlos Zapata	State Representative – District 119	State Government
03/15/05	Lt. Julio Pajon	Florida Highway Patrol	State Government
06/17/05	Community Council #14	Local Community Council (Zoning Board)	Local Government
06/17/05	Vision Council Business Forum Regarding South Miami Dade Transportation Projects	Local Community Council (Zoning Board)	Local Government
07/20/05	Miami Dade County Department of Environmental Resources Management (DERM)	Miami Dade County DERM	County Government
07/20/05		Miami-Dade County Environmentally Endangered Lands (EEL) Program	County Government
07/27/05	Miami-Dade County Bicycle and Pedestrian Advisory Committee	Miami-Dade County – MPO Subcommittee	County Government
09/28/05	Dianne Gray (Casino Manager) Lt. Rivera (Police Department) Jon Lee (Planning Department)	Miccosukee Tribe of Indians of Florida	Federal Agency
02/01/06	Denver Stutler, Jr.	FDOT Secretary	State Government
02/22/06	Citizens Transportation Advisory Committee	Citizens Transportation Advisory Committee	Local Government
04/27/06	Owaissa Bauer Pineland Preserve Addition No. 1	Miami-Dade County EEL Program	County Government
04/27/06	Miami Dade County DERM	Miami Dade County DERM	County Government
04/27/06	South Miami Dade Watershed Study Advisory Committee	South Miami Dade Watershed Study Advisory Committee	Citizens Association
06/21/06	Miami-Dade County Bicycle and Pedestrian Advisory Committee	Miami-Dade County – MPO subcommittee	County Government
08/12/06	United Citizens of South Link/United Citizens for Cutler Bay	Citizens Association	Citizens Association
10/25/06	Committee Members - Brett Bibeau, Susan Kairalla, Christine Leduc Amado Leon, Gabrielle Redfern, Eric Tullberg	Miami-Dade County Bicycle and Pedestrian Advisory Committee	County Government
03/19/08	Citizens Transportation Advisory Committee	Citizens Transportation Advisory Committee	Local Government

Table R-1 – Summary List of Meetings Held

Meeting Date	Organization Representative(s)	Organization	Represents
04/17/08	FHWA	FHWA	Federal Agency
02/04/09	Agricultural Practices Advisory Board	Agricultural Practices Advisory Board	County Government
09/10/12	Jane Griffin Dozier Julio Brea Elaine Johnson Flavio Quiroz Jim Murley Charles Cynlle Christopher Benitez Christie Velázquez Cynthia Guerra Janet Gil Rick Ammirato Mark Heinicke	Miami-Dade Parks City of Homestead Miami-Dade County Department of Regulatory and Economic Resources (DRER), Environmental Monitoring and Restoration Division (EMRD) Miami-Dade Police Department South Florida Regional Planning Council MDFR/OEM Miami-Dade Expressway Authority Miami-Dade County DRER EMRD Miami-Dade County EEL Program Miami-Dade County EEL Program City of Homestead Community Redevelopment Agency Miami-Dade Park & Recreation Department	Local Government
12/16/13	Board of Directors - George Butler, Tom Rieder, Carol Harris, David Hanck, Kern Carpenter, David Kaplan, Larry Dunagan, Jerry Frye, Steve Hoveland, Alice Pena, and Teena Borek	Dade County Farm Bureau	Agriculture/Farmers

Citizen's Advisory Committee

The CAC is a stakeholder group reflecting the range of communities, organizations, groups and individuals who will be affected by decisions regarding improvements to Krome Avenue within the project limits. The purpose of the CAC is to provide a range of stakeholder views regarding possible improvements to Krome Avenue and confirm they are clearly understood and fully considered by the project team. An additional purpose of the CAC is to work with the project team toward the greatest degree of consensus possible on how to address the issues and needs that will be identified through the process. The formation of the CAC is consistent with Title 23 U.S. Code (USC), which provides for consultation with transportation safety stakeholders. Along with public input, the CAC for this project was instrumental in the development and evaluation of the project typical sections, and the selection of the FDOT-recommended alternative that was presented at the Public Hearing on December 11, 2013, which is the FHWA-preferred alternative.

A CAC Guidelines and Workplan Book were developed in order to promote a dynamic and constructive dialogue among the members with a particular focus on the issues concerning the community regarding this Project Development and Environment (PD&E) study. All CAC meetings, agendas and minutes have been published on the project website. The agendas and minutes for each of the CAC meetings are provided in ***Appendix Y*** of this *Final Environmental*

Impact Statement / Record of Decision. The CAC meeting dates and topics are detailed in the following list:

- December 9, 2004 Meeting #1: Organizational
- February 1, 2005 Meeting #2: Methodology and Data Review
- March 8, 2005 Meeting #3: Safety Analysis
- May 2, 2005 Meeting #4: Population and Traffic Demand Projections
- June 9, 2005 Meeting #5: Review Safety & Population Projection Information
- July 19, 2005 Meeting #6: Law Enforcement Policy & Operational Analysis
- January 24, 2006 Meeting #7: Alternatives Cross-Sections
- February 28, 2006 Meeting #8: Review Revised Alternatives Cross-Sections
- April 4, 2006 Meeting #9: Proposed Alignment/Alternatives Evaluation Matrix
- May 2, 2006 Meeting #10: Evaluation Matrix & Supplemental Considerations
- March 20, 2007 Meeting #11: Safety Data, Florida Intrastate Highway System (FIHS) Criteria, & Alternatives Analysis
- September 10, 2012 Meeting #12: Project Update and Introduction of Alternative 5

Project Newsletters

A project newsletter and fact sheet were developed and distributed to the Public Workshop participants. The project newsletter and fact sheet described the project need, project characteristics, project status, and the types of issues evaluated during the study, as well as explained what is involved with a PD&E study and the necessary actions to be taken to complete the study. An updated project newsletter and fact sheet were developed and distributed to the Public Hearing participants. The updated newsletter and fact sheet described the project justification, project characteristics, protect status, public hearing process, and issues evaluated; explained what a PD&E study is and what actions are taken to complete the study; and presented the FDOT-recommended alternative.

Project Website

A project website was developed and can be found on the internet at www.kromesouth.com. The website was established to provide the public access to the most current and up-to-date project information. This tool has provided the public with information regarding the project description, project objectives, alternatives, information about the CAC meetings, public workshops, Public Hearing, project photos, newsletters, and contact information. All of the project PD&E documents were also provided on this website at the same time the hard copies were made available to the public. Additionally, it has served as a vehicle for the public to submit their comments directly to the project team.

Public Information Workshop

A Public Information Workshop for this PD&E Study was held on May 31, 2006, from 5:30 to 8:30 pm at the Miami-Dade County John D. Campbell Agricultural Center Auditorium. In addition to the 312 property owners and CAC members who received invitations to this

workshop, the federal, state and local agencies were sent letters of invitation requesting their participation. The workshop was also advertised in English and Spanish in the local newspaper, *The Miami Herald/El Nuevo Herald*. As a result, more than 84 people attended the Public Information Workshop.

The purpose of the Public Information Workshop was to introduce the study and explain the objectives of this project to the community along the corridor. Aerial photographs incorporating the proposed alternatives, typical sections and alternatives matrices were displayed at the workshop. In addition, a PowerPoint presentation to introduce project information and details was presented. Each attendee was afforded the opportunity to discuss the project with the study team members and was also given the opportunity to comment and make suggestions during the one-on-one discussions. In addition, each attendee was presented with a comment card to complete. A total of 56 individual comments and one group comment with seven signatures was received subsequent to the meeting, by mail or through e-mail. Comments about the project were generally 79% percent in favor of the roadway widening and 19% against the project. About 2% expressed their desire to gain a better understanding of the impacts.

In summary, the community was able to express their concerns and obtain answers to their questions through the public workshop. The project team used the information gathered from the meetings and workshop to concentrate on pressing issues and to the greatest extent practicable, incorporated this information into the study.

Public Hearing

A Public Hearing for this PD&E Study was held on December 11, 2013 from 6:00 p.m. to 8:00 p.m. at the Miami-Dade County John D. Campbell Agricultural Center Auditorium, located at 18710 SW 288th Street, Homestead, Florida 33030. In addition to the 254 property owners and CAC members who received invitations to the Public Hearing, federal, state, and local agencies were sent letters of invitation requesting their participation. The Public Hearing was also advertised in English and Spanish in the local newspaper, *The Miami Herald/El Nuevo Herald*, and a notice of the Public Hearing was published in the Florida Administrative Register. All draft project documentation was placed on display for public review at least 21 days in advance of, and ten days after, the Public Hearing date, at the FDOT District Six office (located at 1000 NW 111th Avenue, Miami, FL 33172) and at the Agricultural Center. As a result, 86 people attended the Public Hearing, including five public officials and three CAC members.

The purpose of the Public Hearing was to share information about the proposed improvements and provide an official forum, giving interested persons an opportunity to express their input into the process. The hearing began as an open-house, with a formal presentation, a public comment period, and additional time at the end for one-on-one discussion with FDOT personnel. The presentation introduced the study, explained the need for the project, provided an overview of the alternatives, presented the FDOT-recommended alternative, and detailed the impacts, effects, and benefits of the project. An aerial photograph of the study corridor, detailed aerial photographs overlaid with the recommended alternative, and the study typical sections were displayed at the Public Hearing.

Each attendee was afforded the opportunity to discuss the project with the study team members and was also given the opportunity to comment and make suggestions during the one-on-one discussions and during the official public comment period. A total of 12 individuals read their comments into the record during the Public Hearing. In addition, each attendee was presented with a comment card to complete, if they so chose. Seven individual comments were received at the meeting. An additional 15 comments were received after the hearing, by email, in the mail, through the Efficient Transportation Decision Making (ETDM) website, or via the project website. Comments were generally 41% percent in favor of the project and 9% against the project, with the balance of the comments dealing with specific questions about or suggestions to the project.

A copy of the Public Hearing materials, Public Hearing transcript, all correspondence received during the *Draft Environmental Impact Statement* comment period, and a matrix summarizing all comments received during the *Draft Environmental Impact Statement* comment period and FDOT's responses to these comments are provided as appendices to this *Final Environmental Impact Statement / Record of Decision*. Additionally, a copy of all correspondence received after the close of the *Draft Environmental Impact Statement* comment period, and a matrix summarizing all comments received after the close of the *Draft Environmental Impact Statement* comment period and FDOT's responses to these comments are provided as appendices to this *Final Environmental Impact Statement / Record of Decision*.

ALTERNATIVES CONSIDERED

Project alternatives considered during the study included alternate corridor options, typical section concepts, intersection layouts, and the no-build alternative. Other areas of the study included shared-use path options, drainage treatment options, traffic operations, maintenance of traffic, constructability issues, utilities, soils and geotechnical issues, socioeconomic and environmental impacts, construction segments, right-of-way costs, and bridge replacement design considerations. All alternatives were evaluated in terms of engineering, environmental, and socioeconomic aspects.

Alternate Corridors Evaluated

Three alternate corridor locations were considered in addition to the existing Krome Avenue corridor within the PD&E study limits. The following are the alternate corridors that were evaluated (see ***Figure 2-2a*** through ***Figure 2-2c*** on pages 2-5 through 2-7):

1. SW 187th Avenue/Redland Road;
2. SW 182nd Avenue/Roberts Road;
3. SW 177th Avenue/Krome Avenue (existing); and
4. SW 167th Avenue/Tennessee Road.

Any relocation of the existing corridor will require major social adjustments and produce impacts that result in substantial increases to noise levels. A relocation of the existing corridor would also maintain the existing unsafe and substandard conditions along Krome Avenue and at

intersections with local cross streets. Additionally, the Krome Avenue corridor provides regional connectivity that cannot be adequately replaced by any of the other corridors in the near future.

Based on an evaluation of the corridor alternates, as presented in the evaluation matrix (see ***Table 2-1*** on page 2-21), it was determined that ***Corridor Alternate # 3*** (Krome Avenue) is the most viable corridor for the improvement project. As a result, the existing SR 997/Krome Avenue/SW 177th Avenue corridor was selected and recommended for further consideration.

No-Build Alternative

The No-Build Alternative assumes that no improvements would be implemented within the corridor. With this alternative, the existing roadway would be maintained "as is," with a two-lane, undivided typical section. The lack of grass median and adequate shoulders, the substandard drainage and water quality treatment facilities, the non-optimized traffic operations, and the existing safety deficiencies would be retained. This alternative was considered viable during the Public Hearing and final selection phase to serve as a comparison to the other study alternatives. However, the No-Build Alternative fails to fulfill the purpose and need of the project.

Transportation System Management Alternative

This alternative involves selectively upgrading deficient roadway areas with improved signage, turn lanes, pavement markings and traffic signals. Improvements consistent with this alternative have already been applied and maximized along this corridor and additional similar improvements will not satisfy the safety, capacity, and traffic operations needs along this section of roadway. Most of the TSM improvements (intersection improvements) were incorporated into the corridor as short-term improvements. The congestion along Krome Avenue is caused by a lack of through-lane capacity and high turning volumes. The TSM analysis did not substantially enhance the operation of the signalized intersections or alleviate safety issues associated with this corridor and did not include corridor drainage improvements. Long-term improvements are necessary to mitigate the existing safety deficiencies, increase capacity to accommodate future travel demand, improve access management, and provide stormwater management. Therefore, further consideration of the TSM alternative was eliminated from the analysis. For further information on the TSM alternative, see ***Section 2.3.2*** of this document and Section 4.1.9 of the *Preliminary Engineering Report* (PER), which is available for review on file at the FDOT District Six offices in Miami, Florida, and is incorporated by reference.

Action Plan Alternative

The Krome Avenue Action Plan was developed in 1997 and approved by the Miami-Dade County MPO in 1999. The primary purpose of the plan was to identify and evaluate alternatives for transportation improvements other than additional general use lanes and restrictive medians along Krome Avenue. A two-lane undivided typical section with roadway improvements was recommended for implementation for Krome Avenue from SW 296th Street/Avocado Drive to US 27. The Krome Avenue Action Plan's original typical section was revised by the project team

in order to comply with FDOT criteria for reconstruction of a facility. The updated typical section was used during this study as a comparison with the proposed study alternatives. Both of the Action Plan Alternatives include a two-lane facility with a two-foot wide center painted buffer median. The Action Plan "original" and "modified" Alternatives both fail to fulfill the purpose and need of the project, including providing a grass median to separate northbound and southbound traffic, providing additional capacity, and providing a facility that adheres to the access management requirements. Therefore, both the "original" and the "modified" Action Plan Alternatives were eliminated from further consideration.

Alternative Typical Sections Considered

A total of 46 typical sections were developed during the initial alternative analysis. These conceptual alternatives were categorized by the number of lanes: ten two-lane undivided typical sections, eight two-lane divided typical sections, eight three-lane undivided typical sections, four two-lane divided typical sections with passing lanes, 15 four-lane divided typical sections, and one five-lane undivided typical section. The development of these typical sections was based on established design controls for the various elements of the project such as roadway width, median width, shoulder width, design speed, horizontal alignment, vertical alignment, drainage considerations, and intersecting roads. The selection of the appropriate criteria and standards was influenced by safety features, traffic volumes and composition, levels of service, functional classification, environmental considerations, and community issues.

After the initial evaluation of the 46 conceptual typical sections, five alternatives were identified to move forward, in addition to the No-Build, TSM and the Action Plan Alternatives. The five alternatives were considered viable with respect to public support. Alternatives 1 through 4 are rural for the entire study length and Alternative 5 is a combination of rural and suburban typical sections. These five build alternatives were developed based on the FIHS[2]/Strategic Intermodal System (SIS) criteria and the *Plans Preparation Manual* criteria using a design speed of 65 miles per hour (MPH) for the rural typical section and 55 MPH for the suburban typical section.

Build Alternatives Considered But Not Selected

The four build alternatives considered as part of the engineering analysis of this study but not selected are detailed in the sections below:

Alternative 1 – Two-Lane Divided Rural Roadway (see ***Figure 2-9*** on page 2-36)

This alternative would consist of the following elements: One 12-foot wide travel lane in each direction; 40-foot wide depressed grass median with inside shoulders; two eight-foot wide inside shoulders (two-foot paved and six-foot unpaved); two 12-foot wide outside shoulders (five-foot paved and seven-foot unpaved); ten-foot wide two-way shared-use path parallel to the southbound travel lanes; ten-foot wide roadside swale parallel to the southbound travel lanes; 22-foot wide roadside swale on the northbound direction; eight-foot wide grass harmonization area

[2] Since the time of alternative development for this project, the FIHS sunset in 2012 and was replaced with the SIS.

between the swale parallel to the northbound travel lanes and the right-of-way line; eight-foot wide grass horizontal clearance/harmonization between the shared-use path and the right-of-way line; design speed of 65 MPH; recoverable terrain (clear zone) of 36 feet from the edge of pavement; border width of 30 feet from the outside shoulder point; and a total typical section width of 148 feet.

Alternative 2 – Two-Lane Divided Rural Roadway with Passing Zones (see ***Figure 2-10*** on page 2-37)

Alternative 2 is the same as Alternative 1 with the addition of one 12-foot wide passing lane. Total typical section width is 160 feet. This typical section calls for a minimum of one passing zone segment area throughout the length of the project between SW 168th Street and SW 136th Street. Each passing zone segment would consist of one passing lane per direction alternatively.

Alternative 3 – Four-Lane Divided Rural Roadway (see ***Figure 2-11*** on page 2-38)

This alternative would consist of the following elements: Two 12-foot wide travel lanes in each direction; 54-foot wide depressed grass median with inside shoulders; two eight-foot wide inside shoulders (four-foot paved and four-foot unpaved); two 12-foot wide outside shoulders (five-foot paved and seven-foot unpaved); ten-foot wide two-way shared-use path parallel to the southbound travel lanes; 12-foot wide roadside swale parallel to the southbound travel lanes; 24-foot wide roadside swale parallel to the northbound travel lanes; 16-foot wide grass horizontal clearance/harmonization between the shared-use path and the right-of-way line; 16-foot wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line; design speed of 65 MPH; recoverable terrain (clear zone) of 36 feet from the edge of pavement; border width of 40 feet from the outside shoulder point; and a total typical section width of 206 feet. This typical section is in compliance with the FIHS/SIS facility design criteria.

Alternative 4 – Four-Lane Divided Rural Roadway (see ***Figure 2-12*** on page 2-39)

This alternative would consist of the following elements: Two 12-foot wide travel lanes in each direction; 40-foot wide depressed grass median with inside shoulders; two eight-foot wide inside shoulders (two-foot paved and six-foot unpaved); two twelve-foot wide outside shoulders (five-foot paved and seven-foot unpaved); ten-foot wide two-way shared-use path parallel to the southbound travel lanes; ten-foot wide roadside swale parallel to the southbound travel lanes; 22-foot wide roadside swale parallel to the northbound travel lanes; eight-foot wide grass horizontal clearance/harmonization between the shared-use path and the right-of-way line; eight-foot wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line; design speed of 65 MPH; recoverable terrain (clear zone) of 36 feet from the edge of pavement; border width of 30 feet from the outside shoulder point; and a total typical section width of 172 feet.

SELECTED ALTERNATIVE

Alternative 5 – Four-Lane Divided Rural/Suburban Roadway (with minimization treatment) (see ***Figure 2-13a*** and ***Figure 2-13b*** on pages 2-40 and 2-41, and ***Figure 2-15*** on page 2-56)

The selected alternative will consist of two distinct typical sections: a suburban section from SW 296th Street to 272nd Street and a rural section from SW 272nd Street to SW 136th Street.

The suburban section will consist of the following elements: Two twelve-foot wide travel lanes in each direction; 22-foot wide raised grass median with curb and gutter; two four-foot wide paved inside shoulders; two eight-foot wide outside shoulders (five-foot paved and three-foot unpaved); ten-foot wide two-way shared-use path parallel to the southbound travel lanes; eight-foot wide roadside swale parallel to the southbound travel lanes; 20-foot wide roadside swale parallel to the northbound travel lanes; seven-foot wide grass horizontal clearance/harmonization between the shared-use path and the right-of-way line; seven-foot wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line; design speed of 55 MPH; recoverable terrain (clear zone) of 30 feet from the edge of pavement; border width of 35 feet from the outside shoulder point; and a total typical section width of 148 feet.

The rural section will consist of the following elements: Two 12-foot wide travel lanes in each direction; 40-foot wide depressed grass median with inside shoulders; two eight-foot wide inside shoulders (two-foot paved and six-foot unpaved); two 12-foot wide outside shoulders (five-foot paved and seven-foot unpaved); ten-foot wide two-way shared-use path parallel to the southbound travel lanes; ten-foot wide roadside swale parallel to the southbound travel lanes; 22-foot wide roadside swale parallel to the northbound travel lanes; seven-foot wide grass horizontal clearance/harmonization between the shared-use path and the right-of-way line; five-foot wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line; design speed of 65 MPH; recoverable terrain (clear zone) of 36 feet from the edge of pavement; border width of 27 feet from the outside shoulder point; and a total typical section width of 166 feet.

Additional engineering analysis of the Alternative 5 resulted in a "Minimization Treatment" that further reduces the potential impacts to the EEL Owaissa Bauer Pineland Preserve Addition No. 1 site to the greatest extent practicable while maintaining safe engineering practices (i.e., roadway geometry, etc.). For the approximately 750 feet in the immediate area of the EEL parcel, the rural section is slightly modified to include the minimization treatment, as follows:

The modified rural section with minimization treatment applied will consist of the following elements: Two 12-foot wide travel lanes in each direction; 40-foot wide depressed grass median with inside shoulders; two eight-foot wide inside shoulders (two-foot paved and six-foot unpaved); a 12-foot wide outside shoulder (five-foot paved and seven-foot unpaved) on the southbound side; a 15.5-foot wide outside shoulder (eight-foot paved, with shoulder gutter and guardrail) on the northbound side; ten-foot wide two-way shared-use path parallel to the southbound travel lanes; ten-foot wide roadside swale parallel to the southbound travel lanes; 22-foot wide roadside swale parallel to the northbound travel lanes; seven-foot wide grass horizontal

clearance/harmonization between the shared-use path and the right-of-way line; five-foot wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line; design speed of 65 MPH; recoverable terrain (clear zone) of 36 feet from the edge of the pavement on the southbound side; border width of 27 feet from the outside shoulder point on the southbound side; border width of 5.5 feet from the outside shoulder point on the northbound side; and a total typical section width of 148 feet.

REASONS FOR SELECTION OF ALTERNATIVE

The preferred alternative for the Krome Avenue corridor is Alternative 5 (four-lane divided). This preferred alternative was based on the evaluation matrix and the analysis of several key evaluation parameters including: engineering considerations, environmental impacts, socio-economic impacts, and cost. Alternative 5 will meet the purpose and needs of the project and both alleviate the safety deficiencies and add the needed capacity to this roadway in Miami-Dade County. This alternative is the most prudent compared with the TSM Alternative, Action Plan Alternative, and build alternatives 1 through 4 for the following reasons:

1. The TSM Alternative does not address the needed safety between intersections, increase roadway capacity, improve access management, or provide adequate drainage. Therefore, further consideration of the TSM Alternative was eliminated from the analysis.

2. The Action Plan Alternatives, both “original” and “modified,” do not fulfill the purpose and needs of the project. Safety deficiencies will remain, future congestion will not be alleviated, and Krome Avenue will become even less effective as an evacuation route. Design deficiencies including median separation and access management requirements that will limit conflict points and enhance safety will continue to be unmet. The Action Plan Alternatives are not consistent with area growth management and transportation plans, which designate Krome Avenue as a four-lane roadway within the study limits. They will not accommodate the social and economic demands of a growing future Miami-Dade County. Therefore, both the “original” and the “modified” Action Plan Alternatives were eliminated from further consideration.

3. Both of the two-lane divided alternatives (Alternative 1 and Alternative 2) do not fulfill the purpose and needs of the project. Safety deficiencies will remain due to lack of continuous lane for passing around slow moving vehicles. Under these alternatives, in the future, roadway congestion during peak hours will increase. The congestion in the area may cause additional impacts to the roadway including excessive delay in travel time, large reduction of average travel speeds, and higher crash rates. In addition, Krome Avenue will become even less effective as an evacuation route for the area. Furthermore, both alternatives will not be consistent with area growth management and transportation plans, which designate Krome Avenue as a four-lane roadway within the study limits and will not accommodate the social and economic demands of a growing future Miami-Dade County. Therefore, Alternative 1 and Alternative 2 were eliminated from further consideration.

4. All of the four-lane divided alternatives (Alternative 3, Alternative 4, and Alternative 5) will provide enhanced safety, capacity, median separation (which is anticipated to reduce head-on and angle crashes between the intersections by limiting the conflict points along the corridor within the study limits) and drainage. Four-lane divided alternatives will also provide a second northbound lane which will enhance the facility as an evacuation route. In addition, these alternatives are consistent with the area growth management and transportation plans, and will accommodate future social and economic demands. However, the FHWA has determined that Alternative 3 would cause an adverse impact [under both Section 106 and Section 4(f)] to the Howard Schaff Residence/27450 SW 177th Avenue (8DA9674) due to removal of the large mango trees in front of the residence, while Alternative 4 and Alternative 5 will not require removal of the mango trees; therefore Alternative 3 was eliminated from further consideration.

5. The determining factor between Alternative 4 and Alternative 5 is the required right-of-way width for implementation of each alternative. Reducing the required right-of-way footprint will reduce impacts to cultural and historical resources, surface waters, environmentally endangered lands, businesses, farmlands, noise, and cost. Therefore, Alternative 5, with the least right-of-way width, is the preferred alternative.

6. Additional engineering analysis of the Preferred Alternative 5 resulted in a "Minimization Treatment" that further reduces the potential impacts to the EEL Owaissa Bauer Pineland Preserve Addition No. 1 site to the greatest extent practicable while maintaining safe engineering practices (i.e., roadway geometry, etc.). The proposed minimization treatment reduces the typical section width by 18 feet by using a guardrail for approximately 750 feet in the immediate area of the EEL parcel, reducing the outside shoulder and border width and eliminating the drainage swale in the northbound direction of Krome Avenue. Preferred Alternative 5 with minimization treatment will require a design variation for border width.

ISSUES CONSIDERED

Wetlands Finding

Wetland surveys of the project study area were conducted by project biologists in 2004 and 2010. No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the United States (U.S.), as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area. This includes natural wetland communities as well as swales or other manmade stormwater features. Therefore, no impacts (direct or indirect) to jurisdictional wetlands are anticipated as a result of implementation of any of the build alternatives. The proposed improvements do not take any wetlands, and, therefore, Executive Order 11990 does not apply.

Three areas characterized as surface waters consisting of two community types were identified and assessed. Alternative 1 would directly impact approximately 0.14 acres of surface waters; Alternative 2 would directly impact approximately 0.14 acres of surface waters; Alternative 3

would directly impact approximately 0.34 acres of surface waters; Alternative 4 would directly impact approximately 0.21 acres of surface waters; and Alternative 5 would directly impact approximately 0.15 acres of surface waters. Since the waterways will remain virtually intact following the proposed construction activities, the proposed impacts are expected to be minimal.

Floodplain Finding

Pursuant to Executive Order 11988, "Floodplain Management", the proposed action was determined to be within the base floodplain. Impacts associated with the encroachment have been evaluated and determined to be minimal. Therefore, the proposed action will not constitute a significant encroachment. Additionally, the project does not involve a regulated floodway.

Coastal Zone Consistency

The Florida Department of Environmental Protection (FDEP) has determined that this project is consistent with the Florida Coastal Management Program. A copy of the FDEP's letter (dated May 4, 2004) written in response to the Advance Notification (AN) has been enclosed as part of the Florida State Clearinghouse response to the AN in ***Appendix P***.

Cultural Resources

The *Cultural Resource Assessment Survey* (CRAS), conducted in 2005, identified three historic resources which were determined to be eligible for listing on the National Register of Historic Places (NRHP): the Howard Schaff Residence (8DA9674), the Clarence J. Parman Residence (8DA9675), and the Redland Golf Course (8DA10051). The CRAS Addendum prepared in 2012 identified the three previously identified resources and one additional historic resource, the Seaboard Air Line (CSX) Railroad (8DA10753), which was determined to be eligible for listing on the NRHP. The FHWA has determined that the proposed project improvements will have no adverse effect on the historic resources identified during the 2005 CRAS and subsequent 2012 CRAS Addendum, except for the removal of the large mango trees in front of the Howard Schaff Residence with implementation of Alternative 3; alternatives 1, 2, 4, and 5 would not require removal of the large mango trees and would not have an adverse impact on the Howard Schaff Residence or any of the other identified historic properties. The State Historic Preservation Officer (SHPO) concurred with this finding in a letter dated August 24, 2012.

Section 4(f)

Ten sites were initially considered for potential Section 4(f) involvement in this study. Five of which were not evaluated as potential Section 4(f) resources for the reasons discussed in ***Section 4.2.2*** (Camp Owaissa Bauer/Everglades Archery Range, Owaissa Bauer Pineland Preserve Addition No. 2 and No. 3, and the South Florida Water Management District (SFWMD) canal maintenance access roads). Uses at the five remaining properties [Owaissa Bauer Pineland Preserve Addition No. 1, the Howard Schaff and Clarence J. Parman residences, the Redland Golf Course, and the Seaboard Air Line (CSX) Railroad] have the potential to be impacted by the proposed build alternatives.

The FDOT has assessed the following historic properties based on each build alternative and, in concurrence with FHWA, has determined that there is no Section 4(f) use for the following resource/build alternative combinations:

- Clarence J. Parman Residence (8DA9675) for Alternatives 1, 2, 4, and 5
- Howard Schaff Residence (8DA9674) for Alternatives 1, 2, 4, and 5

All work in proximity to these resources for the identified build alternatives will occur inside the existing FDOT right-of-way. In addition, the SHPO has made a Determination of Effects finding of "No Adverse Effect" for all of these combinations.

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, Pub. L. 109-59, amended existing Section 4(f) legislation at Section 138 of Title 23 and Section 303 of Title 49 USC, to simplify the processing and approval of projects that have only a *de minimis* finding on lands protected as a Section 4(f) resource. In accordance with this policy, the following build alternatives qualify for a *de minimis* finding for the following historic resources, based on limited right-of-way acquisition:

- Clarence J. Parman Residence (8DA9675) for Alternative 3
- Redland Golf Course (8DA10051) for Alternative 1 through 5
- Seaboard Air Line (CSX) Railroad (8DA10753) for Alternative 1 through 5

For the Clarence J. Parman Residence, the required strip of right-of-way will not result in any alterations to the features that contribute to the property's eligibility for the NRHP. The residence will be approximately 65 feet from the edge of the roadway pavement as part of Alternative 3. The SHPO made a Section 106 Determination of "No Adverse Effect;" therefore this meets the qualifications for a *de minimis* finding under Section 4(f).

A strip of right-of-way is required from the 121-acre Redland Golf Course property. This strip, which also features a number of non-native trees, acts as a buffer between the golf course and the roadway and is located outside of the golf course's existing fence. There will be no alterations to the physical dimensions of the historic, playable golf course property or course layout as a result of the roadway improvements and right-of-way acquisition. For all alternatives (including Alternative 3, which has the greatest impact, at 1.1 acres), the required strip of right-of-way represents less than 1% of the total area of the Redland Golf Course property. Therefore, this meets the qualifications for a *de minimis* finding under Section 4(f).

The right-of-way needed for this project across the Seaboard Air Line Railroad will similarly have no effect on the purpose or function of the resource. There will be no changes to the features which render it NRHP-eligible. The corridor is already a transportation facility and will continue to serve the same purpose after the project is completed. The SHPO made a Section 106 Determination of Effects finding of "No Adverse Effect" for all five build alternatives across this resource. Therefore, this meets the qualifications for a *de minimis* finding under Section 4(f).

While all build alternatives would move the roadway and associated traffic, noise, and visual impacts closer to the identified resources, none of them will be adversely affected by the project under Section 106 criteria/standards. As there are no indirect adverse effects to the resources, a constructive use impact evaluation under Section 4(f) is not applicable. Based on this information and the Section 106 determination of "No Adverse Effects" to these resources and concurrence by the SHPO, these activities meet the qualifications for a *de minimis* Section 4(f) finding.

The FHWA concurred with and approved the FDOT's recommendation of a Section 4(f) *de minimis* finding for these resources in an email dated August 28, 2013:

> *In reviewing the revised information, the SHPO concurrence letter, the previous information provided that includes the 2/7/13 responses to the FHWA De Minimis Questionnaire, our 7/14/13 teleconference to discuss the Section 4(f) impacts, and … field review on 7/24/13 … the [FHWA] has sufficient information at this time to determine that some of the alternatives will have only a de minimis Section 4(f) impact on some of the resources. Specifically, FHWA agrees with your recommendation and has determined that the following build alternatives, as proposed, will have a de Minimis impact under Section 4(f) for the following historic resources:*
>
> - *Clarence J. Parman Residence (8DA9675) for Alternative 3*
> - *Redland Golf Course (8DA10051) for Alternative 1 to 5*
> - *Seaboard Air Line (CSX) Railroad (8DA10753) for Alternative 1 to 5*

For the Howard Schaff Residence, Alternative 3 would require removal of the large mango trees in front of the residence. The FHWA has determined that removal of these trees constitutes an adverse effect under Section 106, and the SHPO has concurred with this finding. Removal of these trees would also constitute a Section 4(f) finding. Therefore, in order to move forward with Alternative 3, an Individual Section 4(f) Evaluation would need to be prepared to evaluate the Section 4(f) use caused by removal of these trees. However, Alternative 3 is not the preferred alternative for this project.

Wildlife and Habitat

Based on the results of the *Endangered Species Biological Assessment* (ESBA) prepared for this project, the FDOT and FHWA made the following effect determinations for individual species: "*may affect, but not likely to adversely affect*" for the West Indian manatee, American alligator, and eastern indigo snake and a determination of "*no effect*" for the wood stork, Everglade snail kite, deltoid spurge, Garber's spurge, and tiny polygala plants. A copy of the ESBA was submitted by the FDOT to the U.S. Fish and Wildlife Service (USFWS) for review and concurrence on April 29, 2013. The USFWS issued a letter dated May 21, 2013, in which they concurred with the determination made by the FDOT and the FHWA of "*may affect, but not likely to adversely affect"* for the West Indian manatee and eastern indigo snake. The USFWS also acknowledged the determination made by the FDOT and the FHWA of "*no effect*" for the wood stork, Everglade snail kite, deltoid spurge, Garber's spurge, and tiny polygala plants. Per

telephone coordination with Mr. John Wrublik (USFWS), the USFWS no longer comments on a "*no effect*" finding for the American alligator, which is federally listed as threatened due to similarity of appearance to the American crocodile, unless the project also contains habitat for the American crocodile; the Krome South project does not contain any appropriate habitat for the American crocodile. Copies of all correspondence between the FDOT and the USFWS are included in ***Appendix Q***.

Since the original preparation of the ESBA conducted as part of the Krome South project, new information became available in relation to two species with the potential to occur within the Krome South study corridor – the Florida bonneted bat and Carter's small-flowered flax. Additionally, comments were received in reference to the Florida panther during the *Draft Environmental Impact Statement* public comment period for the project. Therefore, a supplemental existing conditions and impact analysis were conducted for these three species, which were incorporated into an *ESBA Supplemental Memorandum*. Based on the results of the *ESBA Supplemental Memorandum* prepared for this project, the FDOT and FHWA made a determination of "*may affect, but not likely to adversely affect*" for the Florida bonneted bat, Florida panther, and Carter's small-flowered flax for the selected alternative (Alternative 5 with minimization treatment). A copy of the *ESBA Supplemental Memorandum* was submitted by the FDOT to the USFWS for review and concurrence on March 4, 2014. The USFWS issued a letter dated April 3, 2014, in which they concurred with the determination made by the FDOT and the FHWA of "*may affect, but not likely to adversely affect*" for the Florida bonneted bat, Florida panther, and Carter's small-flowered flax. Copies of all correspondence between the FDOT and the USFWS are included in ***Appendix Q***.

Since the preparation of the *ESBA First Supplemental Memorandum* conducted as part of the Krome South project in March 2014, new information became available in relation to two butterfly species and one plant species with the potential to occur within the Krome South study corridor, the Florida leafwing and Bartram's scrub-hairstreak butterflies and Florida brickell-bush. Therefore, a supplemental existing conditions and impact analysis were conducted for these three species, which were incorporated into an *ESBA Second Supplemental Memorandum*. Based on the results of the *ESBA Second Supplemental Memorandum* prepared for this project, the FDOT and FHWA made a determination of "*may affect, but not likely to adversely affect*" for the Florida leafwing and the Bartram's scrub-hairstreak butterflies and their Critical Habitat and a determination of "*no effect*" for the Florida brickell-bush and its proposed Critical Habitat. A copy of the *ESBA Second Supplemental Memorandum* was submitted by the FDOT to the USFWS for review and concurrence on October 24, 2014. The USFWS issued a letter dated December 3, 2014, in which they concurred with the determination made by the FDOT and the FHWA of "*may affect, but not likely to adversely affect*" for the Florida leafwing and the Bartram's scrub-hairstreak butterflies and their Critical Habitat and "*no effect*" for the Florida brickell-bush and its proposed Critical Habitat. Copies of all correspondence between the FDOT and the USFWS are included in ***Appendix Q***.

Complete avoidance of the Miami-Dade County EEL Owaissa Bauer Pineland Preserve Addition No. 1 parcel was not possible. Therefore, additional engineering analysis was conducted resulting in a "Minimization Treatment" that would reduce the potential impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 site to the greatest extent practicable while maintaining

safe engineering practices (i.e., roadway geometry, etc.) (see ***Section 4.3.12.1*** for additional details). The minimization treatment reduces the overall proposed improvements to Krome Avenue at the Owaissa Bauer Pineland Preserve Addition No. 1 site by a linear distance range of 18 to 31 feet in width and reduces the impact area from a range of approximately 0.84 acres (Alternatives 1 and 2) to 1.27 acres (Alternative 3) to a minimum impact range of approximately 0.53 acres (Alternatives 1 and 2) to 0.82 acres (Alternative 3) depending on which build alternative the treatment is applied. With the minimization treatment applied to Alternatives 1 and 2, an additional 0.31 acres of the Owaissa Bauer Pineland Preserve Addition No. 1 site will be preserved. With the minimization treatment applied to Alternative 3, an additional 0.45 acres of the site will be preserved. With the minimization treatment applied to Alternative 4, an additional 0.31 acres of the site will be preserved. With the minimization treatment applied to Alternative 5, an additional 0.26 acres of the site will be preserved. With the minimization treatment applied to the typical sections, the majority of remaining impacts will occur within the westernmost edge of the site, which appears to be regularly disturbed by mowing, vehicle off-road parking and pedestrian traffic. In addition, as part of the minimization treatment, several protection measures will be provided for the remainder of the Owaissa Bauer Pineland Preserve Addition No. 1 site through the addition of guardrail and possibly fencing along the Krome Avenue side of the site (pending approval from the Miami-Dade County EEL Program representatives). During the final design phase of the project, in order to approve a proposed easement within the Owaissa Bauer Pineland Preserve Addition No. 1 site, the FDEP requires submittal of the "Upland Easement Application" to the State of Florida Board of Trustees of the Internal Improvement Trust Fund for review to apply for easement interest in the land. The application requires a resolution from the Miami-Dade County Board of County Commissioners and written approval from the managing agency [Miami-Dade County EEL and Miami-Dade County Parks, Recreation and Open Spaces Department (MDPROS)].

Essential Fish Habitat

The proposed project does not involve any areas designated as Essential Fish Habitat; therefore, coordination per the Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq.) does not apply to this project.

Farmlands

The FDOT has coordinated the evaluation of farmland conversion impacts for the project with the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). The *Farmland Conversion Impact Rating for Corridor Type Projects* (Form NRCS-CPA-106) was completed on January 9, 2012. All five alternatives intersect the same map units and the relative values of the Farmland (Part V) are very similar. For each build alternative, the potentially converted farmland was assigned a Land Evaluation Information Criterion Relative Value ranging from 19.7 points (Alternatives 1, 2, 4, and 5) to 19.9 points (Alternative 3) out of 100 (Part V). The FDOT determined a maximum Corridor Assessment Criteria score of 60 (out of 160) (Part VI), and thus, the Total Points score ranged from 79.7 points (Alternative 1, 2, 4, and 5) to 79.9 points (Alternative 3) out of 260. In accordance with Chapter 28-2.4.4 of the *PD&E Manual*, a total score of less than 160 is considered as minimal impacts to farmlands and no additional evaluation is necessary.

Air Quality

The project's No-Build and Build alternatives were assessed for potential air quality impacts at the project level using the FDOT's PC based Carbon Monoxide (CO) Florida 2012 screening model. The results of the CO screening analysis indicate that the proposed project is not expected to cause an exceedance of the one-hour or eight-hour National Ambient Air Quality Standards for CO (35 PPM and 9 PPM, respectively). The project passes the CO screening analysis, and air quality impacts resulting from the proposed project are not expected.

Noise

Design year (2040) traffic noise levels for Alternatives 1 and 2 (typical section widths of 148 feet and 160 feet, respectively) are predicted to approach or exceed the Noise Abatement Criteria (NAC) at three residences. With Alternative 3 (the widest typical section width of 206 feet), design year traffic noise levels are predicted to approach or exceed the NAC at 15 residences (including the Clarence J. Parman Residence, a residence eligible for NRHP-listing) and at the Florida Audubon Society property. Alternatives 4 and 5 are predicted to result in noise impacts at 13 residences (including the Clarence J. Parman Residence) and at the Florida Audubon Society property due to their slightly narrower typical sections of 172 feet for Alternative 4 and 148 feet and 166 feet for the suburban and rural typical sections of Alternatives 5, respectively. No sites are expected to experience any substantial noise level increases as defined by the FDOT [i.e., greater than 15.0 dB(A) over existing levels] with the build alternatives.

In accordance with FHWA requirements, noise abatement was considered for all noise sensitive locations where design-year traffic noise levels were predicted to equal or exceed the FDOT NAC for residential land use (including the Clarence J. Parman Residence) and for impacted areas at the privately-owned Florida Audubon Society property. A total of ten noise barriers were evaluated for feasibility and reasonableness. The results of this analysis indicate that construction of the noise barriers appears feasible. However, none of the noise barriers are considered reasonable since they either were unable to reduce noise levels by the FDOT's noise reduction design goal [7.0 dB(A) for at least one benefitted receptor] or their estimated construction cost exceeded the FDOT's cost reasonableness criteria ($42,000 per benefitted receptor site). Thus, none of the noise barriers evaluated for this study are recommended for further consideration and there are no apparent solutions available to mitigate the noise impacts at the impacted locations. The traffic noise impacts to these noise sensitive sites are considered to be an unavoidable consequence of the project.

Contamination

Twelve sites of potential contamination concern were identified for the Krome Avenue study corridor: four sites rated as High risk, seven sites rated as Medium risk, and one site rated as Low risk. For all of the build alternatives (Alternatives 1 through 5), the potential contamination concerns are nearly equivalent due to the proximity of the contamination concerns to the existing roadway (all of the sites are directly adjacent to the existing roadway). However, the information available in the Environmental Data Resources, Inc. report and/or from the environmental regulatory agencies did not clearly define the presence, location and extent of site contamination

plume within the FDOT's right-of-way. Therefore, further investigation is warranted for some of these sites. The FDOT will utilize the information contained in this report to determine the extent of additional investigation. A Level II Contamination Assessment investigation will be conducted prior to any right-of-way acquisition and/or early in the design phase. Based on the Level II findings, proper measures will be taken through plans notes and/or provisions to be included in project/contract plans to avoid/minimize construction impacts.

Nondiscrimination

This project has been developed in compliance with FDOT's nondiscrimination program. In accordance with 23 CFR Part 200 and 49 CFR Part 21, public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. No person may be treated unfavorably, excluded from participating in or denied the benefits of any FDOT program or activity because of their race, color, national origin, age, sex, religion, disability or family status. The FDOT will not retaliate against any person who complains of discrimination or who participates in an investigation of discrimination.

Relocations

All of the build alternatives will require acquisition of additional right-of-way along the study corridor. In general, the proposed project, depending on the alternative chosen, will cause the relocation of properties ranging from four to ten residences, three to six businesses, and one to four personal properties. The FDOT does not anticipate a disproportionate impact on minority or low income communities as a result of these relocations. The FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646, as amended by Public Law 100-17).

Cumulative Impacts

Based on the impact analyses in Chapter 4 of this document, no adverse direct or indirect impacts will occur to wetlands, water quality, floodplains, air quality, visual/aesthetic resources, or bicycle and pedestrian features; therefore, cumulative impacts for these resource topics were not analyzed. The potential cumulative impacts from the combined actions of this project and other past, present, and reasonably foreseeable future actions in the areas of influence were evaluated for this project. The details of this evaluation can be found in ***Section 4.3.18***.

Collectively, the past, present, and reasonably foreseeable future actions when combined with the Krome South project would have a beneficial cumulative impact on the social and economic characteristics of the area of influence.

The past, present, and reasonably foreseeable future actions could have both beneficial and adverse effects on the land use within the area of influence; however, this project has been determined to be consistent with the Miami-Dade County Comprehensive Plan.

The past, present, and reasonably foreseeable future actions could have an adverse cumulative impact on utilities and railroads in the area of influence, causing potential relocations of utilities and railroad crossings; however, the FDOT will continue to coordinate with utilities and railroad representatives during the design phase of the project to minimize impacts to the maximum extent practicable.

Due to the restricted area of influence for the NRHP-eligible resources evaluated for this project, none of the other projects in the region would be expected to have an effect on these resources. Therefore, there would be no cumulative impacts to historic resources within the area of influence from the combination of the proposed improvements from this project and other past, present, and reasonably foreseeable future actions.

Due to the restricted area of influence for the Section 4(f) resources evaluated for this project, none of the other projects in the region would be expected to have an effect on the Section 4(f) resources evaluated for this project. Therefore, there would be no cumulative impacts to Section 4(f) resources within the area of influence from the combination of the proposed improvements from this project and other past, present, and reasonably foreseeable future actions.

Due to the restricted area of influence for the specific resources evaluated for this project, none of the other projects in the region would be expected to have any impacts on these specific resources. The past, present, and reasonably foreseeable future actions could have both beneficial and adverse effects on recreational and parklands within the area of influence. This project would contribute a minor to moderate negative increment to the cumulative effect, depending upon the alternative chosen. However, due to the restricted area of influence for the specific resources discussed above, none of the other projects listed above would be expected to have any impacts on these specific resources.

The past, present, and reasonably foreseeable future actions could have an impact from noise within the area of influence, and this project could contribute to the unavoidable adverse effects. However, roadway projects such as the Krome South project are often required for the safety of those traveling the roadway. Thus, the noise impacts, which have been minimized to the maximum extent practicable while still providing the necessary safety improvements, are considered an unavoidable and acceptable consequence.

The extent of contamination identified along the Krome Avenue (South) corridor (the areas directly adjacent and the lands adjoining) appears to be localized to the study area. Taking this into consideration, it is anticipated that the collective impact of the past, present, and reasonably foreseeable future FDOT projects will likely not contribute to unacceptable cumulative impacts from the localized contamination.

The past, present, and reasonably foreseeable future actions could have both beneficial and adverse effects on wildlife and habitat within the area of influence. This project is only anticipated to contribute a negligible to minor increment to the cumulative effect.

Therefore, collectively, the past, present, and reasonably foreseeable future actions would be anticipated to only have negligible to minor adverse cumulative impacts to farmlands within the

area of influence. This project is only anticipated to contribute a negligible to minor increment to the cumulative effect.

MEASURES TO MINIMIZE HARM

This project incorporates all practical measures to avoid or minimize environmental harm. Although some impacts will occur, every effort will be made to minimize impacts through the institution of feasible measures applicable to each situation. Numerous specific commitments have been made including the following:

Commitments

Engineering

1. The FDOT will reduce down to/only provide 1:10 longitudinal profiles in the roadside swales parallel to Krome Avenue, in the vicinity of the C-102 and the C-103 canals, to facilitate SFWMD maintenance vehicle access to the canals.
2. The FDOT will provide vertical headwalls with pedestrian/bicycle railings at the culvert crossing, in order to avoid impacting the S-194 structure on the C-103 canal.
3. As the FDOT advances its design, it will continue to review medians consistent with its design and safety standards, as well as the Plans Preparation Manual and consider the need for truck turns to support agricultural operations.
4. As the FDOT advances its design, it will continue agency coordination and design for high water elevation with reliance on design and safety standards in the FDOT Drainage Manual and regional emergency management plans as communicated by local governments during the PD&E and Design processes and consider potential changes in the watershed from other projects, climate change, and general urbanization.

Community Services

5. The FDOT is committed to continued coordination with hospitals, libraries, churches, and other community organizations in the project area through the development, final design, and construction phases of the project.
6. The FDOT is committed to initiating coordination with Miami-Dade County Public Schools during the design phase of the project to discuss the maintenance of traffic and other measures to ensure the safety of student pedestrians and to help minimize disruptions to school operations, including bus transportation.

Wildlife and Habitat

7. The Florida Fish and Wildlife Conservation Commission's (FWC) *Standard Manatee Conditions for In-Water Work* will be employed during all in-water construction activities associated with this project.
8. The FDOT will incorporate the most current protection guidelines for the eastern indigo snake, currently entitled *Standard Protection Protocols for the Eastern Indigo Snake*, into

the final project design and will require that the construction contractor abide strictly to the guidelines during construction.

9. The FDOT is committed to coordinating with the USFWS regarding the most current survey protocols for the Florida bonneted bat and re-surveying all of the royal palms along the corridor within the footprint of Alternative 5 (preferred alternative) prior to construction activities for any signs of the Florida bonneted bat. If any signs of the Florida bonneted bat are observed, the FDOT is committed to reinitiating coordination with the USFWS and consultation, if necessary.

Owaissa Bauer Pineland Preserve Addition No. 1

10. The FDOT will apply the Owaissa Bauer "Minimization Treatment" to the final design of the selected alternative, including the installation of a guardrail to be placed approximately 5.5 feet inside the proposed project right-of-way line.
11. Notwithstanding the avoidance of listed and candidate species and roadway minimization measures that have already been implemented, the FDOT will consider additional minimization measures at the Owaissa Bauer property during design, if determined feasible and consistent with overall project purpose and safety.
12. During the final design phase of the project, in order to approve a proposed easement interest in the land within the Owaissa Bauer Pineland Preserve Addition No. 1 parcel, the FDEP requires submittal of the "Upland Easement Application" to the State of Florida Board of Trustees of the Internal Improvement Trust Fund.
13. To minimize the potential for adverse impacts to listed plant species at the Owaissa Bauer Pineland Preserve Addition No. 1 site along the project corridor, the FDOT will assess the viability of relocating listed plant species to a suitable area outside of the planned limits of construction, such as other graminoid-dominated areas of the site where these species are known to currently occur. The relocations, if determined to be viable, will be coordinated with the USFWS and will be conducted just prior to commencement of roadway construction activities.
14. The FDOT is committed to re-surveying during design for the Bartram's scrub-hairstreak and Florida leafwing butterflies and their host plant (pineland croton) at the Owaissa Bauer Pineland Preserve Addition No. 1 site along the project corridor. If any signs of the butterflies or their host plant are observed, the FDOT is committed to reinitiating coordination with the USFWS and consultation, if necessary.
15. The FDOT's contractor will install temporary construction fencing at the limits of construction along the Owaissa Bauer Pineland Preserve Addition No. 1 for plant protection purposes and maintain the temporary construction fencing until completion of construction at this location; no impacts will occur to vegetated areas outside of the limits of construction in accordance with the *FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property).*
16. Sod will not be planted in the FDOT right-of-way along the Owaissa Bauer Pineland Preserve Addition No. 1 site to avoid future encroachment of any landscaping grass into the adjacent natural areas.
17. Florida tree snails were observed on vegetation at the Owaissa Bauer Pineland Preserve Addition No. 1. Prior to vegetation removal or construction activities, FDOT will conduct

a biological survey within the limits of the proposed project. Individual snails observed on the trees to be impacted will be collected and relocated a safe distance outside of the areas of proposed impact per FWC guidelines (Shaw, 2006, Tree Snail Relocation Protocol).

Florida Audubon Society Property

18. Due to its use for bird watching (as designated by the private owner), the Florida Audubon Society property could be considered especially sensitive to construction noise and/or vibration; therefore, a reassessment of the project corridor for construction-related noise/vibration impacts to such sites will be performed during design in an attempt to minimize impacts to such sites.
19. To minimize the potential for adverse impacts to listed plant species at the Florida Audubon Society property along the project corridor, the FDOT will assess the viability of relocating listed plant species to a suitable area outside of the planned limits of construction. The relocations, if determined to be viable, will be conducted just prior to commencement of roadway construction activities.
20. The FDOT's contractor will install temporary construction fencing at the limits of construction along the Florida Audubon Society property for plant protection purposes and maintain the temporary construction fencing until completion of construction at this location; no impacts will occur to vegetated areas outside of the limits of construction in accordance with the *FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property).*
21. Sod will not be planted in the FDOT right-of-way along the Florida Audubon Society property to avoid future encroachment of any landscaping grass into the adjacent natural areas.

Noise

22. Coordination between the FDOT and the owners of any noise or vibration sensitive sites identified during design will occur, and the contractor will adhere to latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*.

MONITORING OR ENFORCEMENT PROGRAM

No specific commitments have been made regarding monitoring and enforcement for this project. The FDOT Reevaluation Process serves to ensure compliance with all applicable Federal and State laws and regulations prior to the advancement of the project to the next major production phase. This process also provides the mechanisms by which commitments made during the project development process are identified, updated, and their status confirmed. Any new commitments or laws which may have come into effect since the approval of the original final environmental document are addressed in the Reevaluation. As a result, the environmental documentation on a project is always current with prevailing rules and regulations, as well as any commitments resulting from the project development process, including permit requirements. The FDOT District Six tracks these commitments throughout the final design,

permitting, and construction phases of the project using the FDOT Project Commitments Record (FDOT Form No. 700-011-35).

OTHER GOVERNMENT ACTIONS AND PERMITS REQUIRED

Within the vicinity of the Krome Avenue study corridor, other potential city, county, state, or federal governmental actions which could occur within the timeframe of the Krome Avenue improvements include:

- Krome Avenue (North) (SW 136th Street/Howard Drive to SR 25/US 27/Okeechobee Road) (FDOT)
- Krome Avenue Truck Bypass (South of Flagler Avenue to SW 296th Street/Avocado Drive) (FDOT)
- Krome Avenue Canal (SFWMD)
- SR 836 Southwest Extension (NW 137th Avenue to SW 136th Street) (Miami-Dade County Expressway Authority)
- L-31N Canal Expansion (SFWMD)

Other projects that occur within the region but not in the direct vicinity of the Krome South project are discussed in ***Table 4-18***.

Both the U.S. Army Corps of Engineers (USACE) and SFWMD regulate impacts to wetlands/surface waters within the project area. Other agencies, including the U.S. Environmental Protection Agency (USEPA), National Marine Fisheries Service, USFWS, FDEP, and FWC, typically review and comment on permit applications. The following permits are anticipated to be required for this project regardless of the alternative selected: SFWMD Environmental Resource Permit, SFWMD Right-of-Way Occupancy Permit, SFWMD Water Use Permit (Construction Dewatering), USACE Section 404 Dredge and Fill Permit, and FDEP National Pollutant Discharge Elimination System Permit. During the final design phase of the project, in order to approve a proposed easement within the Owaissa Bauer Pineland Preserve Addition No. 1 site, the FDEP requires submittal of the "Upland Easement Application" to the State of Florida Board of Trustees of the Internal Improvement Trust Fund for review to apply for easement interest in the land. The application requires a resolution from the Miami-Dade County Board of County Commissioners and written approval from the managing agency (EEL and MDPROS).

CONSISTENCY WITH FEDERAL, STATE, OR LOCAL GOVERNMENT AUTHORITY

The Krome South project is consistent with the Miami-Dade County CDMP and relevant regional, state, and local transportation plans. The CDMP provides a detailed discussion which demonstrates the consistency of the proposed project with all relevant aspects of the CDMP including safety, capacity, system linkage, emergency evacuation, access management, and bicycle/pedestrian planning.

The CDMP specifically provides for the widening of Krome Avenue between US 27 and SW 296th Street. In the Land Use Element on the Land Use Plan map, Krome Avenue is designated as a Major Roadway (three or more lanes). In the Transportation Element, Traffic Circulation Sub-Element, Figure 1, "Planned Year 2025 Roadway Network," Krome Avenue is designated as a four-lane road.

Miami-Dade County completed its review of the CDMP in the 2010 Evaluation and Appraisal Report (EAR) (adopted March 2011). The EAR identified no issues with the designation of Krome Avenue and proposed no changes to its roadway classification.

The project falls within the service area of the Miami-Dade County MPO. From a regional perspective, the Miami-Dade MPO completed and approved the 2035 LRTP in October 29, 2009. This plan was developed to guide transportation investments in the metropolitan area through year 2035. The segment of Krome Avenue within the study limits was the subject of an LRTP amendment, MPO Resolution #25-13, approved July 18, 2013 (see ***Appendix E***).

Based on the LRTP amendment, the project is listed in the LRTP Cost Feasible Plan (CFP) as a Priority I (for design), Priority II (for right of way) and Priority III (for construction). Priority I corresponds to projects planned to be funded between 2010 and 2014; Priority II corresponds to projects planned to be funded between 2015 and 2020; and Priority III corresponds to projects planned to be funded between 2021 and 2025. Funding for design is estimated at $1.0 million; funding for right of way is estimated at $79 million; and funding for construction is estimated at $83 million.

To minimize impacts and improve constructability, the ten-mile PD&E project (Financial Management Number 249614-4) was split into three design segments. The three design projects are Financial Management Number 427369-1, from SW 296th Street to SW 232nd Street; Financial Management Number 427369-2, from SW 232nd Street to SW 184th Street; and Financial Management Number 427369-3, from SW 184th Street to SW 136th Street.

The Miami-Dade MPO approved the FY 2014-2018 Transportation Improvement Program (TIP) on May 23, 2013. The PD&E project is included in the FY 2014 TIP with state funding through fiscal year 2015. The three design projects are included in the FY 2014 TIP with funds allocated for preliminary engineering (fiscal years 2014 to 2016), right-of-way (fiscal years 2016 to 2018), and construction (beyond 2018). Per the FY 2014 TIP, for all three of the design segments, the funding sources for preliminary engineering and right-of-way are all at the state level, while the funding source for construction is anticipated to use both state and federal funds.

The County TIP is a key component of the Florida State Transportation Improvement Program (STIP), the state's four- year planning document. The TIP is updated annually, around July; the latest STIP report available (Fiscal Year 2014) is dated July 24, 2013. The three design projects are included in the FY 2014 STIP, consistent with all the phases, dates, and funding presented in the FY 2014 TIP.

From a local perspective, the *Homestead Traffic and Mobility Study* encompasses the greater Homestead area, including Krome Avenue. The transportation study, developed by the City of Homestead, includes interconnecting roadways to unincorporated Miami-Dade County and Florida City; areas to be developed; maintenance of Level of Service (LOS); and traffic patterns through the year 2016. In the study, Krome Avenue is recognized as fulfilling a vital transport role, providing the main corridor in western Miami-Dade County for north-south flow of traffic serving both local and regional trips, through Homestead and to and from neighboring areas. Focusing on both motorized and non-motorized transportation needs in that community, the study recommended the widening of Krome Avenue from two to four lanes, with median and turn lanes, to improve mobility and accessibility.

In addition, the *City of Homestead Downtown Area Transportation Plan March 2005 Update* anticipated access management, safety, trail, and bicycle improvements along Krome Avenue between US 1 and US 27. Other Krome Avenue proposed improvements noted in the study include widening, intersection, median, hurricane evacuation, and drainage, as well as the consideration of a truck by-pass route.

The People's Transportation Plan, approved by Miami-Dade County, paved the way for a dedicated funding source exclusively for the improvement of transportation. The People's Transportation Plan Major Highway & Road Improvements for the years 2003 through 2013 called for accelerated safety enhancements and lane improvements for Krome Avenue.

As funding becomes available, it is possible that more than one segment of Krome Avenue could be in construction at any given time. Coordination during construction and maintenance of traffic at the beginning and end of each project segment will be essential to facilitate safety of the motoring public. ***Table R-2*** summarizes the current and estimated funding for the Krome South PD&E project, as well as the three design segments.

Table R-2 – Funding Summary

Phase	Time Frame	Estimated Cost	Funding Source[1]
PD&E[1]	<2014 to 2015	$ 2 M	State
Final Design[1]	<2014 to 2016	$ 3 M	State
Right-of-Way[2]	2015-2020	$ 79 M	State
Construction[2]	2021-2025	$ 83 M	State and Federal
	TOTAL	**$ 167 M**	

1: Funding information comes from the FY 2014 TIP and FY 2014 STIP, unless otherwise noted.
2: Funding Time Frame and Estimated Cost information for the Right-of-Way and Construction Phases comes from the CFP of the Miami-Dade County 2035 LRTP, as amended by MPO Resolution #25-31, dated July 18, 2013.

A thorough review of state and local governmental transportation plans was conducted, focusing on the Krome Avenue study corridor area, including the CDMP, the CFP of the Miami-Dade County LRTP, the STIP, the Miami-Dade County TIP, and the People's Transportation Plan. In conclusion, based on the above, this Krome South project is consistent with state, regional, and local transportation plans. A copy of the Planning Consistency Form completed for this project, and the supporting documentation, is provided in ***Appendix E***.

AREAS OF CONTROVERSY

The Krome Avenue corridor has been the subject of many FDOT studies (dating back to the 1980s) and several applications to amend the Miami-Dade County's CDMP, which proposed the widening of the roadway from two to four lanes.

In 2002, FDOT conducted two separate traffic and safety studies (*SR 997/Krome Avenue Existing LOS Study* and *SR 997/Krome Avenue Future Conditions Analysis and Mitigation Measures*) on Krome Avenue. The purpose of the first study was primarily focused on LOS and safety issues and the results of this study clearly demonstrated the need for LOS and safety improvements along the Krome Avenue corridor. The second study detailed the problems with passing maneuvers on a two-lane undivided Krome Avenue. The principal recommendation of the latest study was the creation of a four-lane section in order to address the safety issues associated with the passing maneuvers.

In 2002, the Miami-Dade County Board of County Commissioners amended the Miami-Dade CDMP and changed the designation of Krome Avenue from a "Minor Roadway" to "Major Roadway" on the 2005 and 2010 Land Use Plan Map and changed the Plan Year 2015 roadway network to reflect Krome from two to four lanes. That plan amendment was found "in compliance" by the State Department of Community Affairs. That compliance determination was challenged. After litigation, the compliance finding was upheld. This followed recognition by the Miami-Dade County Board of County Commissioners of the safety issues on the existing two lane corridor.

The CDMP has been updated and continues to show Krome as four lanes for its entire length on the planned year 2025 roadway network map. Krome continues to be identified as a state principal arterial on the roadway functional classification map for 2025. Krome remains designated as a major route on the designated evacuation route – 2015 map in the CDMP.

The Miami-Dade MPO LRTP has been updated since the Notice of Intent for this project. In the 2035 LRTP Krome Avenue is shown as a 2035 cost-feasible segment improvement and the various Krome segments are shown as part of the 52 projects that satisfy the criteria for regional projects.

Miami-Dade County has conducted a required periodic review of the CDMP through the EAR process and adopted its 2010 EAR in March 2011. The EAR does not identify any major issues with the designation of Krome Avenue and did not propose any changes to its designation. No changes to the roadway classification of Krome Avenue were proposed in the EAR.

As recommended by the Krome Avenue Action Plan, beginning in 2003 the FDOT began providing additional interim safety improvements by widening a number of intersections along the study corridor to provide right and left turn lanes which promote traffic through-movements and reduce the likelihood of rear-end collisions. Those safety improvement projects were completed by 2007. Also, in 2004, the FDOT initiated this PD&E study, with a commitment to the MPO to fully evaluate both two-lane and four-lane typical section alternatives.

The controversy surrounding this project has been historically based on concerns regarding project-related potential land use changes and additional growth and development in the area. These concerns are well documented in the CAC meeting minutes and supporting documentation (see ***Appendix Y***).

UNRESOLVED ISSUES

Coordination has been conducted with the Miami-Dade County Department of Regulatory and Economic Resources, Environmental Monitoring and Restoration Division, EEL Program, and the MDPROS Natural Areas Management Program regarding the Owaissa Bauer Pineland Preserve Addition No. 1 site. The FDOT will continue such coordination throughout the final design phase of the project in reference to avoidance/minimization efforts and potential mitigation in relation to unavoidable impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 site.

PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

All of the build alternatives will require acquisition of additional right-of-way along the study corridor and associated relocations, as discussed in the ***"Relocations"*** section above.

Traffic noise impacts to noise sensitive sites are anticipated to occur and are considered to be an unavoidable consequence of the project, as discussed in the ***"Noise"*** section above. None of the noise barriers evaluated are considered reasonable since they either were unable to reduce noise levels by the FDOT's noise reduction design goal or their estimated construction cost exceeded the FDOT's cost reasonableness criteria. Thus, none of the noise barriers evaluated for this study are recommended for further consideration and there are no apparent solutions available to mitigate the noise impacts at the impacted locations.

Complete avoidance of the Owaissa Bauer Pineland Preserve Addition No. 1 (a Miami-Dade County EEL protected pineland) was not possible, as discussed in the ***"Wildlife and Habitat"*** section above.

IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

Complete avoidance of the Owaissa Bauer Pineland Preserve Addition No. 1 (a Miami-Dade County EEL protected pineland) was not possible, as discussed in the ***"Wildlife and Habitat"*** section above.

FEASIBLE MEASURES TO AVOID OR MINIMIZE POTENTIAL ADVERSE IMPACT

This project incorporates all practical measures to avoid or minimize environmental harm. Although some impacts will occur, every effort will be made to minimize impacts through the institution of feasible measures applicable to each situation. Numerous specific commitments have been made to minimize potential adverse impacts, as detailed in the ***"Measures to Minimize Harm – Commitments"*** section above.

All of the build alternatives will require acquisition of additional right-of-way along the study corridor and associated relocations, as discussed in the ***"Relocations"*** section above. The FDOT will carry out a right-of-way and relocation program to minimize potential adverse impacts from relocations.

Complete avoidance of the Owaissa Bauer Pineland Preserve Addition No. 1 (a Miami-Dade County EEL protected pineland) was not possible, as discussed in the ***"Wildlife and Habitat"*** section above. The FDOT will apply the Owaissa Bauer "Minimization Treatment" to the final design of the selected alternative, including the installation of a guardrail to be placed approximately 5.5 feet inside the proposed project right-of-way line. Additionally, during the final design phase of the project, in order to approve a proposed easement within the Owaissa Bauer Pineland Preserve Addition No. 1 site, the FDEP requires submittal of the "Upland Easement Application" to the State of Florida Board of Trustees of the Internal Improvement Trust Fund for review to apply for easement interest in the land. The application requires a resolution from the Miami-Dade County Board of County Commissioners and written approval from the managing agency (Miami-Dade County EEL and MDPROS).

SHORT-TERM IMPACTS VERSUS LONG-TERM ENVIRONMENTAL BENEFITS

Short-term impacts associated with the project will exist during construction operations. These include inconveniences to motorists, business owners, and neighbors. Temporary air pollution from dust and road emissions, along with noise associated with construction operations cannot be avoided. Every effort will be made to minimize these impacts by utilizing best management practices and adhering to the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*.

Long-term benefits will result from the proposed project, which will help to resolve safety, physical, and functional deficiencies within the corridor and provide overall capacity needs. Primarily, the project will address safety deficiencies along this section of the Krome Avenue corridor. Secondarily, the project will provide additional capacity to accommodate anticipated future area travel demand and address other design deficiencies along the roadway. Additionally, the project will support the effectiveness of the corridor as an emergency evacuation route and provide for regional connectivity.

COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT

The *Draft Environmental Impact Statement* was approved for circulation on November 6, 2013, and the notice of its availability was published in the Federal Register on November 20, 2013, with a request that comments be postmarked by December 30, 2013. The FHWA, in coordination with the FDOT, has taken into consideration all pertinent correspondence, documents, and technical reports postmarked through December 30, 2013. FDOT has adequately responded to all substantive comments received from interested parties regarding the content and accuracy of the *Draft Environmental Impact Statement* and supporting studies for selection of the preferred alternative (Alternative 5).

SUMMARY OF COMMENTS AND RESPONSES CONCERNING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

A summary of the substantive comments received during the *Draft Environmental Impact Statement* comment period and FDOT's responses are provided in ***Table R-3***. Additionally, a summary of the substantive comments received after the close of the *Draft Environmental Impact Statement* comment period and FDOT's responses are provided in ***Table R-4***

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
The proposed action does not comply with NEPA, Section 4(f) of the Transportation Act, and the ESA.	This project was developed in full consideration of and in full compliance with NEPA, Section 4(f) of the Transportation Act, the ESA, CEQ implementing regulations, and the FDOT PD&E Manual.
The DEIS does not closely examine a range of reasonable alternatives.	As detailed **in Section 2.2.5 on pages 2-17 through 2-21, and Section 2.3.4.1 on pages 2-28 through 2-31 of the FEIS/ROD and Sections 3.2.1, 4.1.9, 8.2, 8.6, and 8.7 of the PER**, a total of four (4) corridors and forty-six (46) typical sections were analyzed as part of the initial alternative analysis for this project, including a no action alternative. The conceptual typical sections included a wide range of reasonable alternatives, including ten (10) two-lane undivided typical sections, eight (8) two-lane divided typical sections, eight (8) three-lane undivided typical sections, four (4) two-lane divided typical sections with passing lanes, fifteen (15) four-lane divided typical sections, and one (1) five-lane undivided typical section. The development of the 46 typical sections was based on established design controls for the various elements of the project such as roadway width, median width, shoulder width, design speed, horizontal alignment, vertical alignment, drainage considerations, and intersecting roads. The selection of the appropriate criteria and standards was influenced by safety features, traffic volumes and composition, levels of service, functional classification, environmental considerations and community issues. From these 46 conceptual alternatives, five were identified for more detailed analysis. A reasonable range of alternatives was considered in the context of the project purpose and need, safety.
The DEIS does not analyze whether any of the three alternate corridors could otherwise address the safety deficiencies in the area without directly impacting the environmental resources along Krome Avenue.	- As stated **in Section 2.2.5 on pages 2-17 through 2-21 of the FEIS/ROD** and further detailed in Section 7 of the PER, all four corridors considered were evaluated based on several factors, including: - Available right-of-way through which an improvement providing acceptable service could be routed. - Cultural features including public and private development. - Natural features which could be impacted by the project. - Preservation of the agricultural character of lands outside the designated urban growth area. - Logical termini giving consideration to directness, length, and service. The rejection of the other three corridors was based on a combination of the factors listed above. As shown **in Table 2-1 on page 2-21 of the FEIS/ROD**, the other three corridors evaluated would have resulted in far greater impacts in terms of corridor discontinuity and intersection development, relocations, and construction and right-of-way costs. None of the other corridors would address the documented safety deficiencies on Krome Avenue.
The TSM alternative is dismissed without adequate data; there is no explanation of the meaning of the "safety issues" or "safety ratios" in regards to the TSM alternative.	A summary and explanation of the safety issues and safety ratios for the project corridor, which were used in part to justify the dismissal of the TSM alternative, are provided **in Section 2.3.2 on page 2-23, and Section 1.2.2.1 on pages 1-6 through 1-9 of the FEIS/ROD; and in Section 3.2.1 on pages 3-9 through 3-11, Section 4.1.9 on pages 4-6 through 4-11, and Section 4.1.9.1 on pages 4-11 through 4-14 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
The TSM alternative only considers TSM improvements that were implemented between 2003 and 2007 and does not explain whether additional improvements could further improve safety along the corridor.	The primary purpose and need for the project is safety. The congestion along the project is caused by a lack of through lane capacity and high turning volumes. Non-TSM improvements are necessary to mitigate the existing safety deficiencies, increase capacity to accommodate future travel demand, improve access management, and provide stormwater management. Non-TSM improvements are necessary to mitigate the impacts that the high percentage of trucks and slow moving farm vehicles have on the corridor. **See Section 2.6 on pages 2-54 through 2-56 of the FEIS/ROD.**
FHWA's rejection of Build Alternatives 1 and 2 is flawed. Even though these alternatives only partially satisfy the purpose and need for the project, FHWA must still provide a detailed analysis as to why their limitations outweigh their significant environmental benefits over the preferred alternative.	Build Alternatives 1 and 2 were fully analyzed as part of the NEPA process for this project and have been considered viable throughout the project process. The complete analysis of environmental, physical, and social impacts associated with these two alternatives was fully evaluated against that of the other build and no-build alternatives, as detailed in the FEIS/ROD document. **Table 2-3 on pages 2-50 through 2-53 in the FEIS/ROD** presents a full summary of the evaluation factors (impacts and benefits) of each of the five alternatives, including Build Alternatives 1 and 2. Through the evaluation process, Build Alternatives 1 and 2 were determined to have greater overall impacts and fewer benefits than the preferred alternative.
FHWA so narrowly defines the purpose, need, and objectives of the project that only the preferred alternative would completely satisfy these elements. Therefore, the FHWA must reassess the purpose and need statement and redefine it in such a way that allows for a reasonable range of alternatives to be fully considered.	The commenter confuses the project's purpose with the various factors considered by the agency in evaluating the alternatives in meeting the project's overall purpose, which is safety. The project's purpose is not overly specific so as to limit alternatives; in fact over forty alternatives have been considered throughout the process. Many alternatives met the project's purpose but when compared with other alternatives and considered in the context of the environmental and social impacts, the increased safety needs, the costs, logistics and other factors Alternatives 1 and 2 did not meet the applicant's needs. The purpose and need for this project was screened by numerous federal and state agencies through the ETDM process for this project and no comments were received by agencies other than FHWA.
FHWA has failed to rigorously explore and objectively evaluate all reasonable alternatives. An alternative such as that adopted for the US-1 18-mile stretch project should be considered.	A full range of reasonable alternatives was considered during the NEPA process. The typical section for the US-1 18-mile stretch project was unique and not transferrable to this project as it fails to meet the purpose and need of this Krome South project.
Improvements such as those in the KAAP must now be reconsidered and reanalyzed with new reduced population projections for Miami-Dade County.	The current population projections for Miami-Dade County were fully considered as part of the NEPA analysis for the project, **see Section 3.1.1 on pages 3-1 through 3-3 of the FEIS/ROD**. Population in the project area has increased at a rate higher than the County as a whole. Two alternatives, the original KAAP and a modified version of the KAAP, were considered and dismissed due to their inability to meet the project purpose, **see Table 2-3 on pages 2-50 through 2-53, and Section 2.6 on pages 2-54 through 2-56 of the FEIS/ROD**. The typical section from the KAAP (original or modified) fails to meet the purpose and need of this Krome South project.

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
FHWA unlawfully segments a 37-mile road widening project; NEPA requires that agencies analyze the impacts of all phases of construction as "connected actions" and "cumulative actions."	Although the entire Krome Avenue corridor is being considered for four laning to address safety issues, each segment displays independent utility or significance from the others. As discussed **in Section 2.2.5.6 on pages 2-19 through 2-20 of the FEIS/ROD**, "the project identified also displays independent utility or independent significance. Construction of the project will address documented safety and capacity needs and address the primary project purpose even if no additional transportation improvements in the area are made. The project is usable and a reasonable expenditure even if other safety issues outside the limits of this Krome South project are not addressed. These improvements do not force other improvements on the corridor." Therefore, this project was not evaluated as a "connected action" to any other project. It is reasonable to address the safety issues as resources are available, particularly given the documented safety deficiencies throughout the area. **Section 1.2.2.1 on pages 1-6 through 1-9 of the FEIS/ROD** documents the crash history and safety ratios for the project area. Addressing the safety issues within the project boundary will improve the safety of the corridor and will not "automatically trigger" other actions which may require environmental impact statements within the meaning of 40 C.F.R. §1508.25. The project can proceed independently of any other safety projects along the corridor and the net result will still be an increase in safety along the corridor; it may proceed regardless whether other safety projects along the corridor are undertaken previously or simultaneously and it does not depend on other projects for its justification. Each segment of Krome Avenue under consideration is undergoing federal and state permitting and has been or will be analyzed pursuant to NEPA. Each segment is being cumulatively studied with the others to ensure that all direct, indirect and cumulative impacts which are reasonably foreseeable are being considered. A full analysis of past, present and reasonably foreseeable actions associated with this Krome South project were considered in the cumulative impacts analysis conducted for this project, presented **in Section 4.3.18 on pages 4-76 through 4-86, and Section 2.2.5.6 on pages 2-19 through 2-20 of the FEIS/ROD.**
The DEIS fails to consider the indirect, growth inducing impacts of the project; the DEIS fails to adequately analyze the impacts of the four proposed Developments of Regional Impact (DRIs) in the project area.	The indirect effects of the project, including the potential for inducing growth in the area, are discussed **in Section 4.3.17 on pages 4-63 through 4-75 of the FEIS/ROD**. As also discussed in Section 1.2.4,there are only two remaining potential DRI projects in the area (the other two have since been withdrawn). Of the remaining two, one is already under construction and the other has a pre-existing application that would require an Urban Development Boundary (UDB) modification by the County. The issue of UDB modification is discussed extensively **in Section 4.3.17 on pages 4-69 through 4-72 of the FEIS/ROD**. Neither of these two projects would qualify as "indirect effects" within the meaning of the term as defined in 40 C.F.R. §1508.08. Neither of these projects were "caused by the action"; they pre-date the Krome South PD&E study. They are likewise therefore not "later in time" within the meaning of the term. The potential of the project to induce changes in the pattern of land use, population, density, or growth rate has been discussed extensively **in Section 4.3.17 on pages 4-65 through 4-69 and pages 4-73 through 4-75 of the FEIS/ROD**. Given the significant independent constraints on the ability to alter land use in the project area and the history of protection of the area by Miami-Dade County it is not "reasonably foreseeable" that the pattern will change in response to the project. Miami-Dade County, the local government with land use authority in the project area, has recently (March 2011) completed a periodic, required reevaluation of its CDMP through the EAR process. Their 2010 EAR report has concluded that "it is evident that the County has been successful in directing development inside the UDB consistent with its participation through its comprehensive land use planning." The EAR proposes no changes to those policies limiting UDB expansion. It is reasonable for FDOT to rely upon the local land use authority in its assessment of the efficacy of the CDMP. The project is a safety project and no additional capacity, beyond the demand represented by the existing land uses in the area, is being created.

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
The DEIS fails to consider the indirect, growth inducing impacts of the project; the DEIS fails to consider the potential for induced traffic from the preferred alternative or any other alternative.	The primary project purpose is safety, not the relief of congestion. **Section 1.2.2.2 on page 1-9 of the FEIS/ROD** recognizes that with the project future projected volumes will not be accommodated at all locations and several signalized intersections and links are expected to operate below acceptable LOS. The potential for area traffic to relocate to Krome Avenue when it is improved has been accounted for in the traffic analyses in the long range transportation model future volumes. The South East Regional Planning Model (version.6.5.2, released in 2012) was used to prepare updated Annual Average Daily Traffic and Directional Design Hourly Volumes for opening year and design year for the project study area. This analysis is presented in a Technical Memorandum **in Appendix A of the PER incorporated by reference into the FEIS/ROD on page 1-1**. The post-project projected volumes assigned by the model take into account distributional changes occasioned by the improvement of Krome Avenue, and by the future condition of the area roadway network. The future projected volumes, discussed **in Section 1.2.2.2 on page 1-9 of the FEIS/ROD, and in Section 6.2 on pages 6-4 through 6-6 of the PER**, include the induced traffic which relocates as a result of the laneage improvements. Because the project is a safety project and because there are significant constraints on land use changes, no additional capacity, beyond what is represented by existing land use, is being designed into the project.
The DEIS fails to consider the indirect, growth inducing impacts of the project; the DEIS must discuss the effects of the growth-inducing impacts on the Comprehensive Everglades Restoration Plan.	The project has been and continues to be extensively coordinated with the SFWMD regarding consistency with the Comprehensive Everglades Restoration Plan (**see page 4-79, pages 5-4 through 5-5, and Appendix P of the FEIS/ROD – the April 9, 2004 SFWMD letter, included as part of the state clearinghouse response)**. As discussed in responses above, the project is based on the demand represented by existing land uses. Given the existing constraints, it is not foreseeable that the pattern will change as a result of the project. The 2010 EAR identifies growth in the project area in southwestern Miami-Dade County to be a function of existing land use and zoning and does not propose changes to the existing pattern in the project area.
The proposed project does not comply with Section 4(f) of the Transportation Act – the FHWA's Section 4(f) finding for the Miami-Dade County EEL Owaissa Bauer Pineland Preserve No. 1 parcel is arbitrary and capricious, and the parcel should qualify as a Section 4(f) site under the "Wildlife and Waterfowl Refuge" category.	A Determination of Applicability was prepared for the Owaissa Bauer Pineland Preserve No. 1 parcel and it was determined that the primary function of this site is a "preserve" with several listed plant species. This primary function does not qualify as a Section 4(f) site under the "Wildlife and Waterfowl Refuge" category.
The proposed project violates the Endangered Species Act – the FHWA must conduct Section 7 consultation with the USFWS for this project.	Section 7 consultation with the USFWS was conducted for this project. The USFWS issued a concurrence letter for this project on May 21, 2013, concurring with the FHWA's findings presented in the DEIS. A supplemental memorandum to the ESBA for this project was prepared to analyze potential impacts to the Florida panther, Florida bonneted bat, and Carter's small-flowered flax. The results of the supplemental memorandum have been included into the FEIS/ROD. The USFWS issued a second concurrence letter for this project on April 3, 2014, concurring with the FHWA's findings presented in the supplemental memorandum and included in the FEIS/ROD. Both USFWS concurrence letters are included **in Appendix Q of the FEIS/ROD**.

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
The proposed project violates the Endangered Species Act – the project is within the range of recorded telemetry points for tagged Florida panthers and the FHWA has not analyzed impacts to this species or conducted Section 7 consultation with the USFWS for this species.	The project corridor is not within the primary, secondary, or dispersal zones for identified Florida panther habitat. The project corridor is dominated by agricultural uses and contains few natural habitats. Of those natural habitats present along the corridor, none provide suitable habitat for the Florida panther. A supplemental memorandum to the ESBA for this project was prepared to analyze potential impacts to the Florida panther. The results of the supplemental memorandum have been included into the FEIS/ROD. The USFWS issued a second concurrence letter for this project on April 3, 2014, concurrring with the FHWA's findings presented in the supplemental memorandum and included in the FEIS/ROD. Both USFWS concurrence letters are included **in Appendix Q of the FEIS/ROD.**
Can right-of-way impacts to the EEL parcel be further minimized.	Extensive avoidance and minimization efforts for the Miami-Dade County's DRER EMRD EEL parcel have already occurred during the course of project development as discussed **in Section 4.3.12.1 on pages 4-42 through 4-55 of the FEIS/ROD**. In addition, close coordination with the EEL staff will continue as the project moves into the design phase. During the design phase, the FDOT will continue to review the proposed design at this location to look for ways to further reduce the required right-of-way width from the EEL parcel, if possible. The concurrence letters for this project from the USFWS are included **in Appendix Q of the FEIS/ROD.**
Can right-of-way impacts to the EEL parcel be further minimized.	Extensive avoidance and minimization efforts for the Miami-Dade County's DRER EMRD EEL parcel have already occurred during the course of project development as discussed **in Section 4.3.12.1 on pages 4-42 through 4-55 of the FEIS/ROD**. In addition, close coordination with the EEL staff will continue as the project moves into the design phase. During the design phase, the FDOT will continue to review the proposed design at this location to look for ways to further reduce the required right-of-way width from the EEL parcel, if possible. The concurrence letter for this project from the USFWS is included **in Appendix Q of the FEIS/ROD.**
Safety should continue to be a priority to minimize or eliminate danger on this roadway.	Safety is, and will continue to be, the primary purpose and need for this project; **see Section 1.2.2.1 on pages 1-6 through 1-9 of the FEIS/ROD.**
The proposed bicycle pathway is too dangerous and instead a pathway for slow moving vehicles such as tractors intrinsic to the agricultural area should be considered.	The shared use path (bicycle pathway) has been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, which are themselves based on safety for the users, and which are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The shared use path will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel. The shared use path, as currently designed, was presented to, and endorsed by, the CAC for this project; **see Section 5.3.1 on page 5-27 and Appendix Y of the FEIS/ROD** for a discussion on the CAC. Slower moving vehicles (including tractors) that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
Reduce the number of lanes and the speed limit as the road transitions to Homestead.	3. This project has been conceptually designed following FDOT standards and guidelines for a SIS facility. The transition from four lanes down to two lanes will occur south of SW 296th Street, at the entrance to the City of Homestead; **see Sheet 1 and Sheet 2 of the Conceptual Plans in Appendix H of the PER, incorporated by reference into the FEIS/ROD on page 1-1.** The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER.** The existing posted speed limit within the City of Homestead is 30 MPH.

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Happy that the current posted speed limit of 45 MPH is being maintained.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Happy that flooding potential and drainage is being addressed.	The proposed project recommends a combination of both swales and French drains throughout the corridor to meet required water quality and quantity standards, as discussed **in Section 4.3.6 on pages 4-32 through 4-34 of the FEIS/ROD.**
Happy that no curbing is proposed that would affect access to properties.	The proposed typical sections do not propose any outside curbing. Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the Florida Administrative Code (FAC). The access management standards control access and reduce conflict points, enhancing safety along the project.
Happy that entire corridor will not having lighting and that it will be limited to intersections.	Lighting is being kept or proposed only at major intersections, consistent with suggestions from the CAC to maintain the character of the area, as documented **in Section 4.1.6.2 on page 4-6, Section 4.3.2 on pages 4-13 through 4-14, Section 5.3.1 on page 5-27, and Appendix Y of the FEIS/ROD.**
Happy that the only landscaping in the medians will be grass.	The median is proposed as grass, only. Potential inclusion of landscaping will be refined during the design phase of the project, as discussed **in Section 4.3.2 on pages 4-13 through 4-14 of the FEIS/ROD.**
Would like to see new signals at SW 280th St, SW 272nd St, SW 192nd St, and SW 168th St.	A traffic signal warrant analysis must be met before new signalization can be installed at any intersection. Signalization will continue to be evaluated during the design phase of the project, and these intersections will be reviewed for traffic signal warrants.
Suggests moving the Shared Use Path to the east side of the road and including a "slow moving vehicle path" on the west side of the road, which will minimize the impact of dust from tractors and ATVs.	Coordination of with Miami-Dade County Bicycle and Pedestrian Advisory Committee on the location of the shared use path will continue during the design phase of the project. Although a "slow moving vehicle path" was discussed by some participants at CAC meetings, it was not adopted. Over the course of project development, the CAC also considered, and rejected, an equestrian path. The shared use path, as currently designed, was presented to, and endorsed by, the CAC for this project; for a discussion on the CAC, **see Section 5.3.1 on page 5-27 and Appendix Y of the FEIS/ROD.** Slower moving vehicles that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic. The proposed typical sections are made up of paved roadway and grassed swales which are not anticipated to increase dust in the area.
Suggests that left turn lane storage lengths be extra long for additional storage.	Left-turn lane taper and storage lengths have been conceptually designed based on FDOT Design Standard Index 301. These lengths are based on traffic volumes, and will be refined during the design phase of the project, if longer lengths are indicated.
Suggests flatter cross slope grades extending out from the shoulders.	The cross slope grades of the shoulders have been conceptually designed to meet FDOT roadway design and drainage standards and guidelines. The cross slopes are designed to provide swales for drainage; property access from Krome Avenue (across the proposed swales) will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Suggests that both a wider median and the elimination of bicycle path are required to allow large trucks to make U-turns.	The project as conceptually designed allows for large wheel-based trucks to safely make U-turns at both the full median openings and at signalized intersections.
Suggests placing a partial barrier in the medians.	The proposed project typical sections, with grassed median separation, comply with the FDOT Plans Preparation Manual (PPM), Volume 1, Chapter 2, and will enhance the safety of the corridor; for a discussion on the typical sections, **see Section 2.3.4.1 on pages 2-28 through 2-31 of the FEIS/ROD.**

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Suggests consideration of making an economic impact study on tolling Krome Avenue, north of the study limits of this project.	This project extends from SW 296th Street to SW 136th Street. No tolling has been considered along the study segment of Krome Avenue as part of this project.
Requests traffic signalization at SW 272nd Street, with left-turn arrow.	A traffic signal warrant analysis must be met before new signalization can be installed at any intersection. Signalization will continue to be evaluated during the design phase of the project, and this intersection will be reviewed for traffic signal warrants. A left-turn lane in both directions has been conceptually designed at this intersection.
Requests that the existing posted speed limit 45 MPH be maintained.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on pages 2-28 through 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1**.
Suggests placing a three foot wall for the median.	The proposed project typical sections, with grassed median separation, comply with the FDOT Plans Preparation Manual (PPM), Volume 1, Chapter 2, and will enhance the safety of the corridor; for a discussion on the typical sections, **see Section 2.3.4.1 on pages 2-28 through 2-31 of the FEIS/ROD.**
Requests school speed limit signs to slow down traffic at the Redland Christian Academy.	Appropriate Manual on Uniform Traffic Control Devices (MUTCD) signs for school crossings and approaches will be included in the design phase of this safety project.
Suggests acceleration lanes or signs are needed for merging trucks.	The conceptually designed typical sections for the project provide for two lanes in each direction which will safely accommodate entering traffic. Slower moving vehicles that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
What are the project benefits of changing from two to four lanes?	Changing from two lanes to four lanes will improve safety and capacity along the corridor; for a discussion on project benefits, **see Section 1.2 on page 1-4, Section 1.2.2.1 on pages 1-6 through 1-9, and Section 2.5 on pages 2-45 through 2-53 of the FEIS/ROD.**
Traffic increases dust.	The proposed typical sections are made up of paved roadway, paved shared use path, and grassed swales which are not anticipated to increase dirt or dust in the area.
Why not extend project limit to US 41?	1. This project extends from SW 296th Street to SW 136th Street. There is another separate project to the north from SW 136th Street to US 27/Okeechobee Road that also proposes a four lane divided roadway typical section; **see Section 4.3.18 on page 4-79 of the FEIS/ROD**.
Consider extending the Turnpike.	2.Improvements to the Turnpike, or parallel facilities, will not meet the purpose and need for this project; **see Section 1.2 on page 1-4, and Section 2.2 on pages 2-4 through 2-7 of the FEIS/ROD.**
Confused about the flood problems on the corridor.	The project is not expected to cause changes in flood stage and flood limits. Any minor changes, if any, resulting from this project will not result in any adverse impacts on the natural and beneficial floodplain values or any changes in flood risk or damage. Details are provided **in Section 4.3.10 on pages 4-35 through 4-36 of the FEIS/ROD.**
Confused about West Indian manatee on the corridor.	For this project, the USFWS has concurred with the FDOT- and FHWA-determination of "may affect, but not likely to adversely affect" for the West Indian manatee. USFWS concurrence is discussed on **in Section 4.3.12 on pages 4-38 through 4-39 and on page 4-42 of the FEIS/ROD** and the concurrence letters are included **in Appendix Q of the FEIS/ROD.**
Why will it cost $159 million to build this road?	The preliminary cost estimate for this project ($158,804,525) includes preliminary engineering design costs, right-of-way acquisition costs, construction costs, and construction engineering inspection costs. A summary is provided **in Section 2.5 on pages 2-47 through 2-49 of the FEIS/ROD** and details are provided **in Section 9.6 on page 9-5, in Section 9.7 on page 9-6, and in Appendix I of the PER, incorporated by reference into the FEIS/ROD on page 1-1**.

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Concerned how customers will access property.	Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Why do you need a bicycle path?	The shared use path (bicycle path) has been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and is consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The shared use path will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.
Concerned that their input has not been asked for.	A Public Involvement Program (PIP) was developed at the beginning of the project which outlined opportunities for public participation. Property owners immediately adjacent to this project were notified a by mail a number of times, to solicit input and participation into this project development process. A CAC was formed for this project and met 12 times over the ten-year course of the project. Additionally, 74 other meetings were held with project stakeholders. A Public Workshop was held in 2006 and a Public Hearing was held in 2013. Details of the community outreach for this project are provided **in Section 5.3 on pages 5-23 through 5-43, and in Appendix U, Appendix V, Appendix Y, Appendix Z, Appendix AA, Appendix BB, Appendix CC, and Appendix DD, Appendix EE, and Appendix FF of the FEIS/ROD.**
Concerned about the impact to agricultural industry in area.	The U.S. Department of Agriculture preliminarily evaluated the farmland conversion impacts for the project, and found minimal impacts to farmlands, with no additional evaluation necessary, **see Section 4.3.14 on page 4-60 and Appendix T of the FEIS/ROD**. In addition, property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Happy there are bicycle lanes and a bicycle path.	The proposed typical sections for the project include provisions for bicycles. The bicycle lanes and bicycle path have been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The bicycle lanes and bicycle path will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.
Suggests raising the bridge at the Mowry Canal so bicycles can cross Krome Avenue underneath it.	At the C-103 Mowry Canal, a new bridge will be constructed which will allow bicycles to cross the canal, either on the bicycle lanes or on the shared use path, providing continuity of bicycle travel along Krome Avenue. There are no existing or proposed provisions for bicycles to cross Krome Avenue at this location. In the future, the County may propose other considerations for bicycles as part of its bicycle plans: the SFWMD, the owner of the unimproved canal maintenance access road, has no plans at this time for development of the canal road for trail use; the Miami-Dade County 2009 Master Plan Vision Map notes the canal road as a "potential future greenway".
Suggests adding a second 12-foot diameter parallel culvert next to the canal culvert at the Princeton Canal so bicycles can cross Krome Avenue underneath the road.	At the C-102 Princeton Canal, the FDOT is providing continuity of bicycle travel along Krome Avenue with bicycle lanes and a shared use path. There are no existing or proposed provisions for bicycles to cross Krome Avenue at this location. In the future, the County may propose other considerations for bicycles as part of its bicycle plans: the SFWMD, the owner of the unimproved canal maintenance access road, has no plans at this time for development of the canal road for trail use; the Miami-Dade County 2009 Master Plan Vision Map notes the canal road as a "potential future greenway".

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Supportive of project, but concerned about a 65 MPH speed limit.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Concerned about bicycles separated from traffic by only a painted line.	The bicycle lanes have been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. Bicycles will have a choice of bicycle lanes or the shared use path, which will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.
Suggests there is a need for more left turn openings to provide access to property.	As many proposed median openings with left turn bays for east and west traffic from Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** The access management standards in Rule Chapter 14-97 of the FAC control access and reduce conflict points, enhancing safety along the project.
Concerned about the need to make U-turns.	The project as conceptually designed allows for vehicles to safely make U-turns at both the proposed median openings and the signalized intersections.
Suggests that the construction phase be segmented into shorter parts, each with shorter durations.	The project has been divided into three design projects. Construction limits may be further refined during the design phase depending on funding availability and construction duration estimates.
Concerned about agricultural business, and other business, impacts during construction.	Business impacts during construction will be minimized to the maximum extent possible. Best Management Practices (BMPs) will be used during the maintenance of traffic. Per the BMPs, the FDOT will not completely close a business access during construction.
Concerned about grade of cross slopes in the swales affecting dirt road access to nursery properties.	As part of this safety improvement project, the FDOT will add drainage improvements, such as swales, along the corridor. Reasonable property access from abutting agricultural properties to Krome Avenue will be maintained. Coordination with the FDOT driveway permits department may be required. Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Concerned about the need to analyze environmental impacts of the roadway widening and subsequent increased traffic on wildlife and habitat.	All of the potential direct, indirect, and cumulative impacts of the roadway improvement project were evaluated and analyzed as part of the PD&E/NEPA process for this project. A Wetland Evaluation Report (WER), ESBA, Contamination Screening Evaluation Report (CSER), and Air Quality Technical Memorandum were prepared as part of the project documentation, were available for review during the public comment period, and are incorporated by reference into the FEIS/ROD.
Concerned about environmental impacts from roadway runoff.	A Water Quality Impact Evaluation was conducted as part of this project and **is provided in Appendix N of the FEIS/ROD**. The proposed drainage system for the project will be self-contained and able to retain the contributing runoff with no offsite discharge. The project will use BMPs to minimize impacts on surface water quality. Potential impacts are limited to erosion/turbidity during the construction phase. Overall, water quality in the project area will be improved with the new stormwater management system.
Concerned about environmental impacts to water quality.	All necessary precautions and BMPs pertaining to construction will be followed to prevent adverse impacts to the underlying sole source aquifer (Biscayne Aquifer). The USEPA reviewed the proposed project and concluded that the project will have no adverse impacts to the sole source aquifer if all necessary BMPs are employed. A copy of the USEPA's letter was included **in Appendix O of the FEIS/ROD.**

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Concerned that the project will limit access to business property.	As many proposed median openings with left turn bays for east and west traffic from Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Concerned that large trucks cannot make U-turns.	The project as conceptually designed allows for large wheel-based trucks to safely make U-turns at both the full median openings and at signalized intersections.
Concerned about bicycles traveling on the paved shoulder.	The bicycle lanes have been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. Bicycles will have a choice of bicycle lanes or the shared use path, which will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.
Concerned about raising speed limit from 45 MPH.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Wants clarification on the transition from four lanes to two lanes in Homestead.	Within the limits of the City of Homestead, the proposed four lane typical section transitions back to two lanes over six city blocks, ending just north of NW 17th Street; **see Sheet 1 and Sheet 2 of the Conceptual Plans in Appendix H of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Wants to know if there will be a lot of lighting from SW 296th Street to SW 176th Street.	Lighting is being kept or proposed only at major intersections, consistent with suggestions from the CAC to maintain the character of the area, as documented **in Section 4.1.6.2 on page 4-6, Section 4.3.2 on pages 4-13 through 4-14, in Section 5.3.1 on page 5-27, and Appendix Y of the FEIS/ROD.**
Does not understand why there is a bicycle path.	The shared use path (bicycle path) has been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and is consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The shared use path will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.
Concerned about 65 MPH speed limit.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Concerned about access to property.	As many proposed median openings from Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.

Table R-3 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Concerned that input from farmers who live there has not been asked for.	A Public Involvement Program (PIP) was developed at the beginning of the project which outlined opportunities for public participation. Property owners immediately adjacent to this project were notified a by mail a number of times, to solicit input and participation into this project development process. A CAC was formed for this project and met 12 times over the ten-year course of the project; farmers' interests were represented in the CAC. Additionally, 74 other meetings were held with project stakeholders. A Public Workshop was held in 2006 and a Public Hearing was held in 2013. Details of the community outreach for this project are provided **in Section 5.3 on pages 5-23 through 5-43, and in Appendix U, Appendix V, Appendix Y, Appendix Z, Appendix AA, Appendix BB, Appendix CC, and Appendix DD, Appendix EE, and Appendix FF of the FEIS/ROD.**
Concerned that they will have to relocate.	The preliminary design plans for the project do not require any right-of-way taking from the residential parcel at 17101 SW 177th Avenue, **see Sheet 32 of the Conceptual Plans in Appendix H of the PER, incorporated by reference into the FEIS/ROD on page 1-1.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Does not understand the purpose of doing the project.	Safety is, and will continue to be, the primary purpose and need for this project; **see Section 1.2.2.1 on pages 1-6 through 1-9 of the FEIS/ROD.**
Concerned how people will pick up kids from Redland's Christian Academy.	With the proposed project, school children will continue to be picked up and dropped off as they are today, from the driveways on the school property.
Concerned about access to property with a median.	As many proposed median openings from Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Concerned about how project will impact rural / agricultural area.	The U.S. Department of Agriculture preliminarily evaluated the farmland conversion impacts for the project, and found minimal impacts to farmlands, with no additional evaluation necessary, **see Section 4.3.14 on page 4-60 and Appendix T of the FEIS/ROD**. In addition, property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. It is foreseeable that existing uses will continue.
Concerned there are no acceleration lanes for semi-trucks.	The conceptually designed typical sections for the project provide for two lanes in each direction which will safely accommodate entering traffic. Slower moving vehicles that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
Concerned about how people will drop off children at Redlands Christian Academy.	With the proposed project, school children will continue to be picked up and dropped off as they are today, from the driveways on the school property.
Wants school speed limit signs.	Appropriate Manual on Uniform Traffic Control Devices (MUTCD) signs for school crossings and approaches will be included in the design phase of this safety project.
Concerned about raising speed limit to 65 MPH.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**

Table R-4 – Summary of Substantive Comments Received After the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Concerned that the project will limit access to property.	As many proposed median openings along Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Suggests flattening the slope of the shoulders to facilitate farm access.	The cross slope grades of the shoulders have been conceptually designed to meet FDOT roadway design and drainage standards and guidelines. The cross slopes are designed to provide swales for drainage; property access from Krome Avenue (across the proposed swales) will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Suggests including a "slow moving vehicle path."	Although a "slow moving vehicle path" was discussed by some participants at CAC meetings, it was not adopted; **see Section 5.3.1 on page 5-26 of the FEIS/ROD for a discussion on the CAC**. Slower moving vehicles (including tractors) that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
Wants only limited lighting at intersections.	Lighting is being kept or proposed only at major intersections, consistent with suggestions from the CAC to maintain the character of the area, as documented **in Section 4.1.6.2 on page 4-6, Section 4.3.2 on pages 4-13 through 4-14, Section 5.3.1 on page 5-26, and Appendix Y of the FEIS/ROD.**
Wants only limited landscaping for the project.	The median is proposed as grass, only. Potential inclusion of landscaping will be refined during the design phase of the project, as discussed **in Section 4.3.2 on pages 4-13 through 4-14 of the FEIS/ROD.**
Wants to ensure that hazardous waste and contamination be properly managed during construction.	The project will comply with federal, state, and local regulations and guidelines concerning hazardous waste and contamination during construction. In addition, the contractor shall follow applicable FDOT specifications for areas of unforeseen contamination. These specifications require that in the event any hazardous material or suspected contamination is encountered during construction or if any spills caused by construction related materials should occur the contractor shall be instructed to stop work immediately and notify the FDOT Construction Project Manager. The Project Manager will notify the District Contamination Impact Coordinator (District Six Intermodal Systems Management Office) who will in turn coordinate with appropriate environmental regulatory agencies for assistance and resolution of the contaminated areas. For details, **see Section 4.3.8 on page 4-35 of the FEIS/ROD**.
Encourages continuing to try to reduce the width of the right-of-way footprint in future project phases, in an effort to further minimize potential impacts to community cohesion and relocations.	During the design phase, the FDOT will continue to review the proposed design to look for ways to further reduce the required right-of-way width, if possible.
Wants clarification on property access.	As many proposed median openings along Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Wants clarification on the frontage roads discussed in the proposed Binding Access Control Plan.	The service (frontage) road concept proposed in the Binding Access Control Plan is an option that Miami-Dade County may use to maintain the operational capacity of Krome Avenue in connection with development approvals in the future. The service road concept is not part of the improvements that will be constructed by the FDOT for this project. The Binding Access Control Plan is discussed **in Section 1.2.2.3 on page 1-11, Section 2.3.4.1 on page 2-30, Section 4.3.17 on page 4-74, and Section 5.2.2.2 on page 5-6 of the FEIS/ROD and in Section 3.2.3 on page 3-13, Section 4.1.10 on page 4-16, Section 8.4.1 on page 8-9, and Section 9.23 on pages 9-42 to 9-43 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**

Table R-4 – Summary of Substantive Comments Received After the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Wants to prevent impacts to viable agricultural businesses in the area.	The U.S. Department of Agriculture preliminarily evaluated the farmland conversion impacts for the project, and found minimal impacts to farmlands, with no additional evaluation necessary, **see Section 4.3.14 on page 4-60 and Appendix T of the FEIS/ROD**. In addition, property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Asks if farm vehicles would be permitted to utilize the shared use path.	The shared use path has been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, which are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel. The shared use path is provision for non-vehicular travelers along the state roadway. Slower moving vehicles (including tractors and farm vehicles) that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
Encourages the FDOT to work with the relevant agency to address access needs to canals.	Both of the canals (the C-102 and the C-103) that cross this project are under the jurisdiction of the SFWMD. Coordination has been and will continue to be conducted with the SFWMD as this project advances to the design phase. One of the proposed commitments for this project is that the FDOT will reduce down to/only provide 1:10 longitudinal profiles in the roadside swales parallel to Krome Avenue, in the vicinity of the C-102 and the C-103 canals, to facilitate SFWMD maintenance vehicle access to the canals; **see Section 6.1 on page 6-1 of the FEIS/ROD.**
Encourages the FDOT to work with the relevant agency to address access needs to environmentally-sensitive lands.	There is one ecologically important parcel of land adjacent to the Krome Avenue corridor, the 9.39-acre Owaissa Bauer Pineland Preserve Addition No. 1 property, located south of SW 264th Street along the east side of Krome Avenue. This property is owned by the state of Florida (acquired with Conservation and Recreation Lands Program funds) and is managed by the Miami-Dade County DRER EMRD EEL Program. One of the proposed commitments for this project is that the FDOT will apply the Owaissa Bauer Pineland Preserve Addition Number 1 parcel "Minimization Treatment" to the final design of the selected alternative, which includes the installation of a guardrail to be placed approximately 5.5 feet inside the proposed project right-of-way line. Extensive avoidance and minimization efforts for the EEL parcel have already occurred during the course of project development as discussed **in Section 4.3.12.1 on pages 4-42 through 4-55 of the FEIS/ROD**. In addition, close coordination with the EEL staff will continue as the project moves into the design phase.
Requests a maximum speed of 45 MPH.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Wants clarification on property access.	As many proposed median openings along Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Wants clarification on the frontage roads discussed in the proposed Binding Access Control Plan.	The service (frontage) road concept proposed in the Binding Access Control Plan is an option that Miami-Dade County may use to maintain the operational capacity of Krome Avenue in connection with development approvals in the future. The service road concept is not part of the improvements that will be constructed by the FDOT for this project. The Binding Access Control Plan is discussed **in Section 1.2.2.3 on page 1-11, Section 2.3.4.1 on page 2-30, Section 4.3.17 on page 4-74, and Section 5.2.2.2 on page 5-6 of the FEIS/ROD and in Section 3.2.3 on page 3-13, Section 4.1.10 on page 4-16, Section 8.4.1 on page 8-9, and Section 9.23 on pages 9-42 to 9-43 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**

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Requests a maximum speed of 45 MPH.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**

CONCLUSION

For the foregoing reasons, and based upon consideration of all the social, economic, and environmental evaluation contained in this *Final Environmental Impact Statement / Record of Decision*, with the input received from other agencies, organizations, and the public; the FHWA has determined that the *Draft Environmental Impact Statement* preferred alternative (Alternative 5 with minimization treatment), namely the Four-Lane Divided Rural/Suburban Roadway with minimization treatment, is hereby the selected alternative.

1.0 PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

This National Environmental Policy Act (NEPA) study was conducted for the Krome Avenue project ("Krome South") to evaluate and comprehensively examine various alternatives for roadway and safety improvements to a ten-mile segment of Krome Avenue (SR 997/SW 177th Avenue) from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive) in unincorporated Miami-Dade County, Florida (see ***Figure 1-1***). A corridor analysis was conducted first and then alternatives were developed along the recommended corridor. These alternatives included the No-Build Alternative, a Transportation System Management (TSM) Alternative, Action Plan Alternative, and five build alternatives. The primary focus of this study was to identify the location, type, and size of improvements that would address the deficiencies along this portion of the roadway network in Miami-Dade County. Due to the project's potential for substantial controversy [as identified during the public involvement process and Citizen's Advisory Committee (CAC) meetings], the level of study required to examine project impacts was determined to be an Environmental Impact Statement. The study seeks a solution that most effectively addresses the project needs while minimizing environmental impacts. As discussed in more detail in the following sections, other minor safety projects have been implemented at various intersection locations along the corridor over the past ten years; however, the cumulative effect of those improvements has not completely met the overall need for this project, which is to address safety deficiencies along the entire study segment of the Krome Avenue corridor. As part of the NEPA study conducted for the Krome South project, the following reports were prepared, which are available for review on file at the Florida Department of Transportation (FDOT) District Six offices in Miami, Florida and are incorporated into this *Final Environmental Impact Statement / Record of Decision* by reference.

Engineering Reports

- *Corridor Analysis Report* (March 2011)
- *Design Traffic Technical Memorandum* (May 2005)
- *Existing Traffic Report* (April 2004)
- *Geotechnical Report* (April 2004)
- *Preliminary Drainage Report* (September 2013)
- *Preliminary Engineering Report* (September 2013)
- *Sub-Area Model Validation Report and Development of Design Hour Volumes* (April 2005)
- *Traffic Analysis Technical Memorandum* (December 2006)
- *Value Engineering Report* (April 2007)

Environmental Reports

- *Air Quality Technical Memorandum* (September 2013)
- *Contamination Screening Evaluation Report* (September 2013)
- *Cultural Resource Assessment Survey* (February 2005)
- *Cultural Resource Assessment Survey Addendum* (June 2012)
- *Draft Environmental Impact Statement* (November 2013)
- *Endangered Species Biological Assessment* (September 2013)
- *Endangered Species Biological Assessment Supplemental Memorandum* (March 2014)
- *Endangered Species Biological Assessment Second Supplemental Memorandum* (October 2014)
- *Noise Study Report* (September 2013)
- *Section 106 Documentation and Determination of Effects* (December 2006)
- *Section 4(f) Determination of Applicability* (June 2006)
- *Wetland Evaluation Report* (September 2013)

Public Involvement Reports

- *Public Involvement Plan* (June 2004)

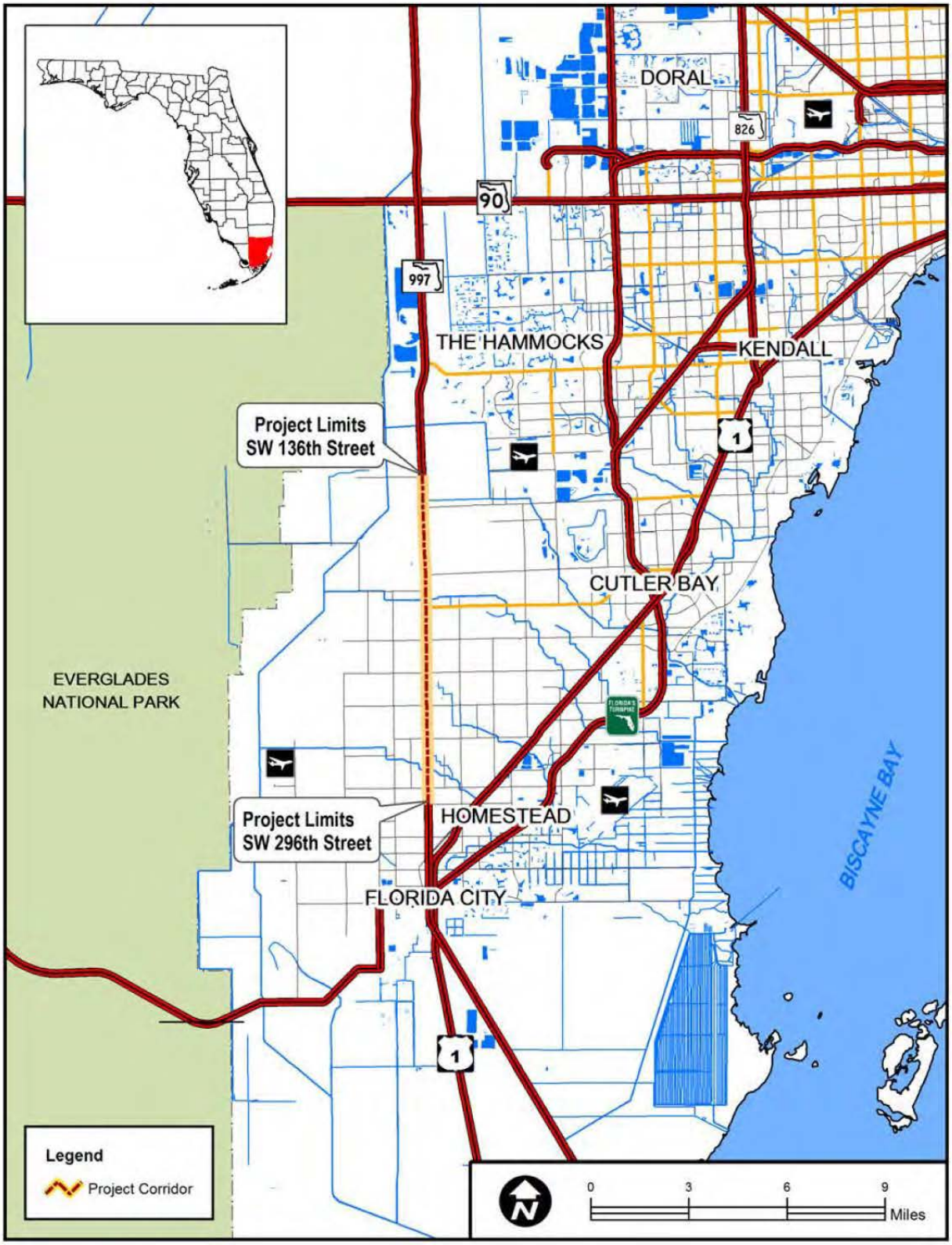


Figure 1-1 – Location Map

1.2 PURPOSE AND NEED FOR ACTION

The need for improvements on this corridor is based on a combination of safety, physical, and functional deficiencies within the corridor plus overall capacity needs. The primary objective of the project is to address safety deficiencies along this section of the Krome Avenue corridor. The secondary objectives of the project are to provide additional capacity to accommodate anticipated future area travel demand and address other design deficiencies along the roadway. Additional secondary objectives include maintaining the effectiveness of the corridor as an emergency evacuation route and improving regional connectivity.

1.2.1 Background

The Krome Avenue corridor has been the subject of many FDOT studies and several applications to amend the Miami-Dade County's Comprehensive Development Master Plan (CDMP), proposing the widening of the roadway from two to four lanes. In mid-1980's, FDOT District Six began a Project Development and Environment (PD&E) Study for Krome Avenue that was evaluating a four-lane rural typical section. The project was temporarily paused due to public opposition and environmental concerns related to the four-lane proposal.

The widening of Krome Avenue was identified in the FDOT's 1988 Strategic Transportation Plan (October 1987), with construction planned from 1999 to 2008. In April 1988, the Miami-Dade County Planning Department issued the Proposed Traffic Circulation Element of the Draft 2000 and 2010 CDMP Update, which included the widening of Krome Avenue from US 27/SR 25/Okeechobee Road to US 1/SR 5. The Board of County Commissioners adopted the CDMP Update with changes in December 1988, but retained Krome Avenue as a two-lane facility.

In April 1990, the Miami-Dade County Planning Department filed Application No. 32 to amend the CDMP to provide consistency with a pending Metropolitan Planning Organization (MPO) 2010 Long Range Transportation Plan (LRTP) Update. The proposed change was the widening of Krome Avenue for its full length from US 1 to US 27. The Board of County Commissioners again retained Krome Avenue as a two-lane roadway. In April 1993, the Miami-Dade County Planning Advisory Board filed Application No. 7 to amend the CDMP, proposing to revise the "Planned Year 2010 Roadway Network" map of the Traffic Circulation Element to re-designate Krome Avenue, from US 1 to SW 328th Street and between SW 296th Street and US 27, from a Minor Roadway to a Major Roadway in the Land Use Plan. This application was withdrawn by the Planning Advisory Board at its final hearing.

During the 1990s, Krome Avenue was designated as a Florida Intrastate Highway System (FIHS) facility. The 1994 Transportation Improvement Program (TIP) for Krome Avenue was modified to reflect a two-lane roadway and a PD&E phase study to begin in 1995-96. Rather than begin a PD&E Study, the FDOT, in consultation with the MPO, decided to proceed with a Corridor Action Plan that would evaluate Krome Avenue from a planning perspective with project recommendations. These recommendations would include right-of-way protection/preservation, ultimate improvements consistent with its FIHS designation, interim operational improvements and extensive public involvement and consensus building.

From 1992 to 1994, the FDOT improved Krome Avenue from S.W. 296th Street/Avocado Drive to SW 8th Street/Tamiami Trail in order to provide interim safety improvements by adding four feet of paved shoulders to each side of the roadway along with associated drainage improvements, milling and resurfacing, and pavement markings.

In May 1994, the FDOT filed Application No. 12 to amend the CDMP, proposing widening of Krome Avenue within the same limits as the above-referenced 1993 CDMP Application No. 7. The Board of County Commissioners denied the transmittal of this application to the Florida Department of Community Affairs (DCA) [today known as the Florida Department of Economic Opportunity (FDEO)], which effectively maintained the two-lane designation in the CDMP. Then, in February 1997, the FDOT initiated the Krome Avenue Action Plan to determine ultimate improvements to the two-lane facility to address safety and mobility.

In October 1999, the Miami-Dade County Department of Planning and Zoning filed Application No. 6 to amend the CDMP Traffic Circulation Sub-element to change the designation of Krome Avenue from US 1 to S.W. 328th Street from two lanes (Minor Roadway) to four lanes (Major Roadway), and from S.W. 328th Street to S.W. 296th Street from four lanes (Major Roadway) to two lanes (Minor Roadway) on the Land Use Plan. In October 2000, the Board of County Commissioners adopted Application No. 6. Adoption of this application maintained consistency with the recommendations of the MPO adopted Krome Avenue Plan.

In 2002, FDOT conducted two separate traffic and safety studies [*SR 997/Krome Avenue Existing Level of Service (LOS) Study* (see ***Appendix A***) and *SR 997/Krome Avenue Future Conditions Analysis and Mitigation Measures* (see ***Appendix B***)] on Krome Avenue. The purpose of the first study was primarily focused on LOS and safety issues and the results of this study clearly demonstrated the need for LOS and safety improvements along the Krome Avenue corridor. The second study detailed the problems with passing maneuvers on a two-lane undivided Krome Avenue. The principal recommendation of the *SR 997/Krome Avenue Future Conditions Analysis and Mitigation Measures* was the creation of a four-lane section in order to address the safety issues associated with the passing maneuvers.

In 2002, the Miami-Dade County Board of County Commissioners amended the Miami-Dade CDMP and changed the designation of Krome Avenue from a "Minor Roadway" to "Major Roadway" on the 2005 and 2010 Land Use Plan Map and changed the Plan Year 2015 roadway network to reflect Krome Avenue from two to four lanes. That plan amendment was found "in compliance" by the State Department of Community Affairs. That compliance determination was challenged. After litigation, the compliance finding was upheld. This followed recognition by the Miami-Dade County Board of County Commissioners of the safety issues on the existing two lane corridor (see Resolution R-199-02, ***Appendix C***).

The CDMP has been updated and continues to show Krome Avenue as four lanes for its entire length on the planned year 2025 roadway network map. Krome Avenue continues to be identified as a state principal arterial on the roadway functional classification map for 2025. Krome Avenue remains designated as a major route on the designated evacuation route – 2015 map in the CDMP.

The Miami-Dade MPO LRTP has been updated since the Notice of Intent for this project. In the 2035 LRTP Krome Avenue is shown as a 2035 cost-feasible segment improvement and the various Krome Avenue segments are shown as part of the 52 projects that satisfy the criteria for regional projects.

Miami-Dade County has conducted a required periodic review of the CDMP through the Evaluation and Appraisal Report (EAR) process and adopted its 2010 EAR in March 2011. The EAR does not identify any major issues with the designation of Krome Avenue and did not propose any changes to its designation. No changes to the roadway classification of Krome Avenue were proposed in the EAR.

As recommended by the Krome Avenue Action Plan, beginning in 2003 the FDOT began providing additional interim safety improvements by widening a number of intersections along the study corridor to provide right and left turn lanes which promote traffic through-movements and reduce the likelihood of rear-end collisions. Those safety improvement projects were completed by 2007. Also, in 2004, the FDOT initiated this PD&E study, with a commitment to the MPO to fully evaluate both two-lane and four-lane typical section alternatives.

1.2.2 Project Needs Within the Study Area

The following sections discuss the needs specific to the proposed study corridor. In particular, roadway safety, corridor capacity, and a variety of design deficiencies need to be addressed.

1.2.2.1 Safety

It is evident that traffic volume growth and the resulting congestion have contributed to driver frustration and attempts to make risky maneuvers along Krome Avenue. Combined with the fact there is a very high percentage of truck traffic (ranging between 26% - 32% based on average annual daily traffic) along with slow moving farm vehicles, these conditions have contributed to the high rate of crashes and crash severity along the Krome Avenue study corridor.

The FDOT utilizes the 'Rate-Quality Control' method to identify hazardous locations along state roadways. The 'Rate-Quality Control' method uses the crash rate (Number of Crashes per Million Vehicle-Miles) of a particular location of roadway and applies a statistical test to determine whether the crash rate is significantly abnormal compared to predetermined crash rate for segments of roadways of similar characteristics (Ref.: FDOT TOPIC # 500-000-100-c). The abnormal crash location is identified by a Safety Ratio of greater than 1.0. The hazardous locations, referred to as High Crash Segments or Spots, are compiled annually and utilized to develop and prioritize improvements to reduce the frequency of crashes along state roadways. FDOT crash data is available from the commencement of this study through the year 2010. Within the study area of Krome Avenue are many sections which have appeared in the High Crash Segment lists for every one of the twelve analysis years (1999 – 2010). A detailed list is presented in ***Appendix D***. The manually calculated Safety Ratios (weighted averages) for the entire study segment of Krome Avenue for the ten year analysis are presented graphically in ***Figure 1-2***.

Figure 1-2 – Safety Ratios (Weighted Averages)

A Safety Ratio higher than 1.0 is an indicator that a particular segment/location of a state roadway had experienced crash rates higher than statewide averages for similar roadways. The calculated Safety Ratio along the entire study segment of Krome Avenue has remained at or above twice the statewide average for the past 12 years. A total of 1,424 crashes were reported along the corridor over the 12-year period. A total of 26 fatalities in 23 fatal crashes were reported during this period with 58% of all crashes resulting in injuries. ***Table 1-1*** presents statistics for the entire study corridor in terms of injuries and fatalities. It should be noted that there were various short-term improvement projects constructed within the study area from 2003-2004 and again during 2007.

Table 1-1 – Crash Data by Severity – SR 997/Krome Avenue from SW 296th Street to SW 136th Street

Year	Number of Crashes	Number of Injury Crashes	Number of Injuries	Number of Fatal Crashes	Number of Fatalities
1999	97	63	120	2	2
2000	94	64	120	3	3
2001	116	74	157	3	4
2002	91	60	106	2	2
2003	106	61	134	2	3
2004	121	67	125	0	0
2005	128	66	112	2	2
2006	128	69	109	1	1
2007	132	66	111	1	1
2008	141	86	169	3	3
2009	136	76	127	3	4
2010	134	69	120	1	1
Total	1424	821	1510	23	26
Average/Year	119	69	126	1.9	2.2

Source: FDOT Crash Analysis Reporting System

Along the approximately ten mile long two-lane roadway there are eight signalized intersections and numerous unsignalized intersections. Three unsignalized intersections (280th, 272th and 136th Street) are considered to be large enough for specific evaluation due to the potential need for future signalization. There have been a variety of short-term safety TSM improvement projects implemented at ten intersections within the study area, between 2003-2004 and again in 2007. The intersection improvements primarily consisted of adding separate turn lanes or modifying the pavement markings to separate turn lanes where required. These TSM intersection improvements were anticipated to reduce crashes at the intersections. A before-and-after analysis of available crash data indicated that while the improvements did increase safety at some of the intersections, in some locations, angle type crashes have actually increased over time.

Crashes that occur in between the intersections, such as head-on and run-off-the-road type crashes, which are typically more severe crashes compared to intersection crashes, would not be reduced by these TSM improvements. A previous Krome Avenue study recognized the need for improvements along the long stretches of roadway between the intersections and recommended adding a median separation as a potential long-term solution to reduce/eliminate head-on and angle type crashes that have increased the crash severity within the study area. ***Table 1-2*** presents crash statistics for the entire study corridor by crash type. Proposed improvements within the Krome Avenue study area need to consider alternatives that will improve safety along the corridor.

Table 1-2 – Crash Data by Type of Crash – SR 997/Krome Avenue from SW 296th Street to SW 136th Street

Type of Crash	Total Percentage	Number of Crashes*
Rear End	36%	514
Angle	24%	344
Left Turn	10%	149
Sideswipe	8%	108
Head-on	2%	34
All Other	19%	275

* 1999-2010 Total Crashes = 1,424
Source: FDOT Crash Analysis Reporting System

1.2.2.2 Capacity

The Krome Avenue corridor will require additional capacity improvements to alleviate congestion and to maintain the desired LOS D, where feasible, in the future. Proposed improvements need to address the enhancement of both intersection and roadway capacity in order to accommodate traffic demands.

Traffic projections indicate an annual growth range between 3.11 and 4.74 percent per year in traffic during the study time-frame (i.e. 2004-2040). The programmed improvements for Krome Avenue will not provide the required capacity to adequately accommodate future projected volumes. Several signalized intersections and links are anticipated to operate at an unacceptable LOS based upon future volumes and programmed improvements.

If additional physical improvements (beyond the programmed improvements already identified in the FDOT's Work Program) are not made within the corridor, the overall arterial LOS for Krome Avenue will decrease from LOS C to LOS E for the northbound direction during the AM peak period. Similarly, the southbound direction overall arterial LOS will decrease during the PM peak period from LOS C to LOS E. A latent demand of approximately 18,700 vehicle-trips per day will be absorbed by other roadways in the area in the absence of additional capacity created on Krome Avenue by a four-lane alternative.

Of the 11 intersections analyzed under the No-Build conditions, three intersections operate at LOS D or worse during one or both, AM and PM, peak periods for the Existing Year 2004 conditions. Six intersections are projected to operate at LOS D or worse during one or both peak periods for Opening Year 2020. By Mid-Design Year 2030, all intersections will operate at LOS D or worse during one or both peak periods. By Design Year 2040, all intersections are projected to operate at LOS D or worse during both peak periods. Proposed improvements within the Krome Avenue study area need to consider alternatives that will improve capacity along the corridor.

For additional information on the traffic capacity analyses conducted for this project, refer to Appendix A of the *Preliminary Engineering Report* (PER), which is incorporated by reference.

1.2.2.3 Design Deficiencies

In addition to the need for improvement based on safety and capacity, Krome Avenue exhibits design deficiencies that need to be addressed. These issues include, but are not limited to: roadside clear zone, drainage, and access management.

Roadside Clear Zone

The roadside clear zone provides a 'forgiving' environment to the motorists. When a vehicle swerves off the road there should be an adequate clear recovery area for the driver to regain control of the vehicle and safely come to a full-stop without hitting a fixed object, another vehicle, a pedestrian or a bicyclist. Lack of clear recovery area on the left side is particularly important along Krome Avenue, because it often results in a centerline crossover head-on collision, which is one of the most severe types of crash. Lack of adequate clear recovery area on the right side is one of the primary and direct contributors to fixed object collisions, which also often result in higher severity crashes.

There were 34 head-on crashes during the 12 year period, 17 of which occurred in the section between SW 184th Street and SW 136th Street. There were 88 crashes that involved vehicles hitting a roadside object, including utility poles, sign posts and ran into ditch/culvert. Most of these crashes (48) occurred in the section between SW 296th Street and SW 232nd Street. Capacity restriction is a secondary contributor to rear-end, angle, and left turn crashes. These three types of crashes accounted for 1,007 of the 1,424 crashes (70%) along the Krome Avenue corridor during the past 12 years. Proposed improvements within the Krome Avenue study area need to consider alternatives that address the factors that improve the clear recovery areas along the corridor, to help reduce head-on and roadside object crashes.

Drainage

The existing stormwater management system along the Krome Avenue corridor is inadequate, consisting of direct offsite discharge via overland flow from the embankment. A few intermittent roadside dirt swales/depressional areas exist; however, no formal water quality facilities occur along the corridor. There are also a few isolated systems constructed by off-site developments which are typically found at the larger intersections along the study corridor. The existing soil infiltration rates range from good to excellent allowing these systems to retain the contributing runoff onsite without any overflow. However, since stormwater treatment or peak attenuation is not provided throughout the corridor, Miami-Dade County and South Florida Water Management District (SFWMD) water quality/quantity treatment standards are not being met. Proposed improvements within the Krome Avenue corridor need to address water quality and water quantity for pre-treatment of runoff, thereby improving overall regional water quality.

Access Management

Krome Avenue is a two-lane undivided roadway that carries an access designation of Class 2 within the study limits. In some sections along the corridor the facility is characterized by frequent and closely spaced driveways. Left-turns are unrestricted resulting in random interruptions to through traffic movement and a substantial number of potential conflict points along Krome Avenue.

Krome Avenue is part of the State Highway System (SHS) and Strategic Intermodal System (SIS); therefore, it should have as strict adherence to the Access Management Standards as practical. The lack of median separation limits the opportunities to implement access management principles that will meet the access management requirements. Furthermore, the lack of access control contributes to side friction which reduces the roadway capacity and contributes to potential safety problems. Traffic demand is projected to increase along the corridor, creating additional issues related to existing capacity and safety concerns. A preliminary access management evaluation of existing conditions is presented in Section 4.1.10 of the PER, which includes a discussion of the coordination with Miami-Dade County and the development of a *Binding Access Control Plan* for the entire Krome Avenue corridor (from SR 5/US/Dixie Highway to SR 25/US 27/Okeechobee Road). The FDOT submitted the *Binding Access Control Plan* to Miami-Dade County in September 2012. Proposed improvements within the Krome Avenue study area need to consider alternatives that will improve access management along the corridor.

1.2.3 Area Wide Needs

Area wide needs are defined by, and related to, those needs addressed in the documents associated with local government comprehensive plans and/or the Cost Feasible Plan (CFP) from the local MPO. The following sections discuss these regionally-based needs.

1.2.3.1 Evacuation Routes and Emergency Services

Krome Avenue provides regional access to major expressways within northwest Miami-Dade County. Krome Avenue is one of only three north-south arterials within the study area which provides regional access to the Florida Turnpike (SR 821), the Palmetto Expressway (SR 826), US 41 (SR 90/Tamiami Trail) and US 27 (SR 25/Okeechobee Road). Accordingly, Krome Avenue provides an important emergency evacuation route, not only for hurricanes, but also for "all hazards," such as an incident at the Turkey Point Nuclear Power Plant. In particular, the Miami-Dade County Comprehensive Emergency Management Plan designates Krome Avenue as a primary north-south evacuation route for the Florida Keys and southern Miami-Dade County. In addition, the Miami-Dade County CDMP, in the Transportation Element, Traffic Circulation Sub-Element, Figure 7, Designated Evacuation Routes 2025, designates Krome Avenue between US 27 and US 1 as a Major Route. The current effectiveness of Krome Avenue as an evacuation route is diminished by the fact that some of its intersections do not meet the desirable LOS. In addition, under the No-Build scenario, by the Design Year 2040, all intersections are projected to operate at LOS D or worse during both peak periods. Without

improvements, as traffic and population continues to grow, Krome Avenue will become even less effective as an evacuation route in accommodating the peak surge of surrounding area traffic resulting from residents trying to access the various Miami-Dade County expressways. Proposed capacity improvements would better accommodate peak surges that may result during emergency situations by providing a second northbound lane which could accommodate evacuating vehicles from Monroe and southern Miami-Dade Counties during an emergency event.

1.2.3.2 Consistency with Federal, State, or Local Government Authority

The Krome South project is consistent with the Miami-Dade County CDMP and relevant regional, state, and local transportation plans. The CDMP provides a detailed discussion which demonstrates the consistency of the proposed project with all relevant aspects of the CDMP including safety, capacity, system linkage, emergency evacuation, access management, and bicycle/pedestrian planning.

The CDMP specifically provides for the widening of Krome Avenue between US 27 and SW 296th Street. In the Land Use Element on the Land Use Plan map, Krome Avenue is designated as a Major Roadway (three or more lanes). In the Transportation Element, Traffic Circulation Sub-Element, Figure 1, "Planned Year 2025 Roadway Network," Krome Avenue is designated as a four-lane road.

Miami-Dade County completed its review of the CDMP in the 2010 EAR (adopted March 2011). The EAR identified no issues with the designation of Krome Avenue and proposed no changes to its roadway classification.

The project falls within the service area of the Miami-Dade County MPO. From a regional perspective, the Miami-Dade MPO completed and approved the 2035 LRTP in October 29, 2009. This plan was developed to guide transportation investments in the metropolitan area through year 2035. The segment of Krome Avenue within the study limits was the subject of an LRTP amendment, MPO Resolution #25-13, approved July 18, 2013 (see ***Appendix E***).

Based on the LRTP amendment, the project is listed in the LRTP CFP as a Priority I (for design), Priority II (for right of way) and Priority III (for construction). Priority I corresponds to projects planned to be funded between 2010 and 2014; Priority II corresponds to projects planned to be funded between 2015 and 2020; and Priority III corresponds to projects planned to be funded between 2021 and 2025. Funding for design is estimated at $1.0 million; funding for right of way is estimated at $79 million; and funding for construction is estimated at $83 million.

To minimize impacts and improve constructability, the ten-mile PD&E project (Financial Management Number 249614-4) was split into three design segments. The three design projects are Financial Management Number 427369-1, from SW 296th Street to SW 232nd Street; Financial Management Number 427369-2, from SW 232nd Street to SW 184th Street; and Financial Management Number 427369-3, from SW 184th Street to SW 136th Street.

The Miami-Dade MPO approved the FY 2014-2018 TIP on May 23, 2013. The PD&E project is included in the FY 2014 TIP with state funding through fiscal year 2015. The three design projects are included in the FY 2014 TIP with funds allocated for preliminary engineering (fiscal years 2014 to 2016), right-of-way (fiscal years 2016 to 2018), and construction (beyond 2018). Per the FY 2014 TIP, for all three of the design segments, the funding sources for preliminary engineering and right-of-way are all at the state level, while the funding source for construction is anticipated to use both state and federal funds.

The County TIP is a key component of the Florida State Transportation Improvement Program (STIP), the state's four- year planning document. The TIP is updated annually, around July; the latest STIP report available (Fiscal Year 2014) is dated July 24, 2013. The three design projects are included in the FY 2014 STIP, consistent with all the phases, dates, and funding presented in the FY 2014 TIP.

From a local perspective, the *Homestead Traffic and Mobility Study* encompasses the greater Homestead area, including Krome Avenue. The transportation study, developed by the City of Homestead, includes interconnecting roadways to unincorporated Miami-Dade County and Florida City; areas to be developed; maintenance of LOS; and traffic patterns through the year 2016. In the study, Krome Avenue is recognized as fulfilling a vital transport role, providing the main corridor in western Miami-Dade County for north-south flow of traffic serving both local and regional trips, through Homestead and to and from neighboring areas. Focusing on both motorized and non-motorized transportation needs in that community, the study recommended the widening of Krome Avenue from two to four lanes, with median and turn lanes, to improve mobility and accessibility.

In addition, the *City of Homestead Downtown Area Transportation Plan March 2005 Update* anticipated access management, safety, trail, and bicycle improvements along Krome Avenue between US 1 and US 27. Other Krome Avenue proposed improvements noted in the study include widening, intersection, median, hurricane evacuation, and drainage, as well as the consideration of a truck by-pass route.

The People's Transportation Plan, approved by Miami-Dade County, paved the way for a dedicated funding source exclusively for the improvement of transportation. The People's Transportation Plan Major Highway & Road Improvements for the years 2003 through 2013 called for accelerated safety enhancements and lane improvements for Krome Avenue.

As funding becomes available, it is possible that more than one segment of Krome Avenue could be in construction at any given time. Coordination during construction and maintenance of traffic at the beginning and end of each project segment will be essential to facilitate safety of the motoring public. ***Table 1-3*** summarizes the current and estimated funding for the Krome South PD&E project, as well as the three design segments.

Table 1-3 – Funding Summary

Phase	Time Frame	Estimated Cost	Funding Source[1]
PD&E[1]	<2014 to 2015	$ 2 M	State
Final Design[1]	<2014 to 2016	$ 3 M	State
Right-of-Way[2]	2015-2020	$ 79 M	State
Construction[2]	2021-2025	$ 83 M	State and Federal
	TOTAL[3]	**$ 167 M**	

1: Funding information comes from the FY 2014 TIP and FY 2014 STIP, unless otherwise noted.
2: Funding Time Frame and Estimated Cost information for the Right-of-Way and Construction Phases comes from the CFP of the Miami-Dade County 2035 LRTP, as amended by MPO Resolution #25-31, dated July 18, 2013.
3: ***Section 2.5*** cost estimates were based on the FDOT 2011 right-of-way estimate, the FDOT 2012 Long Range Estimating System, and the 2013 PER.

A thorough review of state and local governmental transportation plans was conducted, focusing on the Krome Avenue study corridor area, including the CDMP, the CFP of the Miami-Dade County LRTP, the STIP, the Miami-Dade County TIP, and the People's Transportation Plan. In conclusion, based on the above, this Krome South project is consistent with state, regional, and local transportation plans. A copy of the Planning Consistency Form completed for this project, and the supporting documentation, is provided in ***Appendix E***.

1.2.4 Social Demand or Economic Developments

A review of the South Florida Regional Planning Council's map of current and proposed Developments of Regional Impact (DRIs) indicates that four DRIs have been proposed in or near the study area. These DRIs include the Kendall Town Center DRI east of Krome Avenue, Parkland Planned Community DRI just east of Krome Avenue, the Providence DRI just north of the study area, and the Florida City Commons DRI located southeast of the study area. The Kendall Town Center DRI is currently under development with several facilities already completed. The only DRI under review by the FDEO and Miami-Dade County is the Parkland DRI. In order for the Parkland DRI to be approved, the Urban Development Boundary (UDB) line would have to be moved to encompass the proposed development. The Providence and Florida City Commons DRI submittal packages have been withdrawn by the applicants because Miami-Dade County, to date, has not authorized or approved any reconfiguration of the UDB line to encompass these developments. Therefore, there are no current designations for urban development under the approved CDMP which allow for these DRIs to be approved. These projects would not be considered indirect effects of the project as defined in 40 CFR Section 1508.8 (discussed in ***Section 4.3.17***) as they are not caused by the project. Moreover, because of the policies discussed in ***Section 4.3.17*** and the fact that they are not allowed under the CDMP, they are not reasonably foreseeable.

Miami-Dade County has long been the largest and one of the fastest growing counties in Florida. According to the 2010 US Census, Miami-Dade County's population was 2,496,435 which was a 10.8% increase over the 2000 population of 2,253,779. Per the EAR, projected population for 2030 is 3,178,164, which represents a 27% increase over the 2010 population. The population growth in Miami-Dade County can be attributed to tourism-related activities, access to international markets, a second home market and the overall economic growth of southeast Florida. Proposed improvements to Krome Avenue will aid in the overall ability of the area

transportation network to accommodate this population growth. The population growth and distribution is detailed in the 2010 EAR. Residential land supply and demand is projected as a function of existing CDMP land use and zoning regulations, reduced slightly to account for build out limitations.

In addition to population growth, the socioeconomic data from each of the Traffic Analysis Zones within one-mile of the corridor as it compares to similar statistics for Miami-Dade County indicates percentage increases up to 61.34% by the year 2030. Socioeconomic characteristics for Miami-Dade County and the study area indicate a modest growth between 2010 and 2030 in population and school enrollment. Between the years 2000 and 2010, there is small drop in the labor force which is estimated to recover and grow by the year 2030. Proposed improvements within the Krome Avenue study area need to consider alternatives that will be consistent with the anticipated social and economic demands of Miami-Dade County in the future along the corridor. Socioeconomic conditions are also discussed in ***Section 3.1***.

1.2.5 Modal Interrelationships

The existing typical section for Krome Avenue does not provide designated pedestrian or bicycle facilities for the length of the project area. The proposed action will include provisions for pedestrian and bicycle access. Miami-Dade Transit currently does not provide a route along Krome Avenue for their MetroBus system and there are no future plans for a route on Krome Avenue. Two unimproved SFWMD canal maintenance access roads bisect Krome Avenue within the study limits. One of the maintenance access roads runs parallel to the SFWMD C-102/Princeton Canal, which crosses Krome Avenue at approximately SW 196th Street, while the other maintenance access road runs parallel to the SFWMD C-103/Mowry Canal, which crosses Krome Avenue just north of SW 280th Street. These roads are currently mowed/maintained by the SFWMD for maintenance access to the adjacent canals. The Miami-Dade County Parks, Recreation, and Open Spaces (MDPROS) Master Plan Vision Map (dated November 11, 2009) shows both of these maintenance access roads as potential future “greenways” in the MDPROS Master Plan. However, the SFWMD, the owner of these canal maintenance access roads, has no plans at this time for development of these canal maintenance access roads for trail use. Proposed improvements to the Krome Avenue corridor need to consider providing continuous pedestrian and bicycle features, which will allow for interconnectivity with any trails (existing or future) in the area within the study limits.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 PROJECT DESCRIPTION

The project is located in Miami-Dade County and involves roadway and safety improvements to Krome Avenue from SW 296th Street/Avocado Drive) to SW 136th Street/Howard Drive). Krome Avenue is a major north-south rural/urban principal arterial that extends approximately 36 miles from SR 5/US 1 to SR 25/US 27 /Okeechobee Road in unincorporated Miami-Dade County. Under the PD&E study for this ten mile long project, various alternatives were developed and analyzed, including a No-Build alternative, a TSM alternative, and five build alternatives including considerations of two-lane, three-lane, four-lane and five-lane typical sections.

The Krome Avenue corridor has been the subject of extensive study and discussion for the past two decades. The section of Krome Avenue from the intersection of SW 136th Street to the intersection of Okeechobee Road in Miami-Dade County was the subject of another PD&E Study, completed November 2006, that extends approximately 23 miles.

Krome Avenue provides regional connectivity from as far south as the Florida Keys to Broward County and points north. Further, it is one of only three evacuation routes serving the Florida Keys and southern Miami-Dade County. Other concerns include safety issues, capacity, design deficiencies including clear zone, drainage, and access management.

The proposed project is consistent with both regional and local transportation plans. From a regional perspective, it is consistent with the 2035 Miami-Dade LRTP adopted October 2009, the TIP, and Florida Transportation Plan. From a local viewpoint, the *Homestead Traffic and Mobility Study* include the development of interconnecting roadways to unincorporated Miami-Dade County and Florida City.

The existing daily traffic is approximately 15,000 vehicles per day (vpd) with a projected design year traffic ranging between 21,000 to 58,000 vpd, depending on the proposed alternative (two-lane, two-lane modified or four-lane). Traffic is a mixture of local, short distance trips and through traffic (longer trips). Future projections indicate substantial traffic congestion, as the capacity of the existing two-lane section will be inadequate.

2.1.1 Existing Conditions

The section of Krome Avenue from SW 296th Street (MP 3.827) to SW 272nd Street/Epmore Drive (MP 5.342) is classified as an Urban Principal Arterial and from SW 272nd Street to SW 136th Street (MP 13.895) is classified as a Rural Principal Arterial. The existing speed limit is posted at 45 miles per hour (MPH) along the study corridor. The access management classification within the study limits is Class 2 Restrictive. Also, the Krome Avenue corridor is part of the SHS and the SIS.

The existing typical section of Krome Avenue from SW 296th Street to SW 136th Street varies slightly, consisting primarily of two undivided 12-foot-wide travel lanes (less than 12 feet at some locations), with five-foot wide paved shoulders (less than five feet at some locations) and soil/grass swales. The existing right-of-way varies from 35 feet to 200 feet (see ***Figure 2-1***).

No designated pedestrian facilities currently exist along Krome Avenue or any of the adjacent side streets within the corridor study. No designated bicycle facilities exist within the study limits. There are no crosswalks and/or pedestrian pushbuttons provided at the signalized intersections within the study limits.

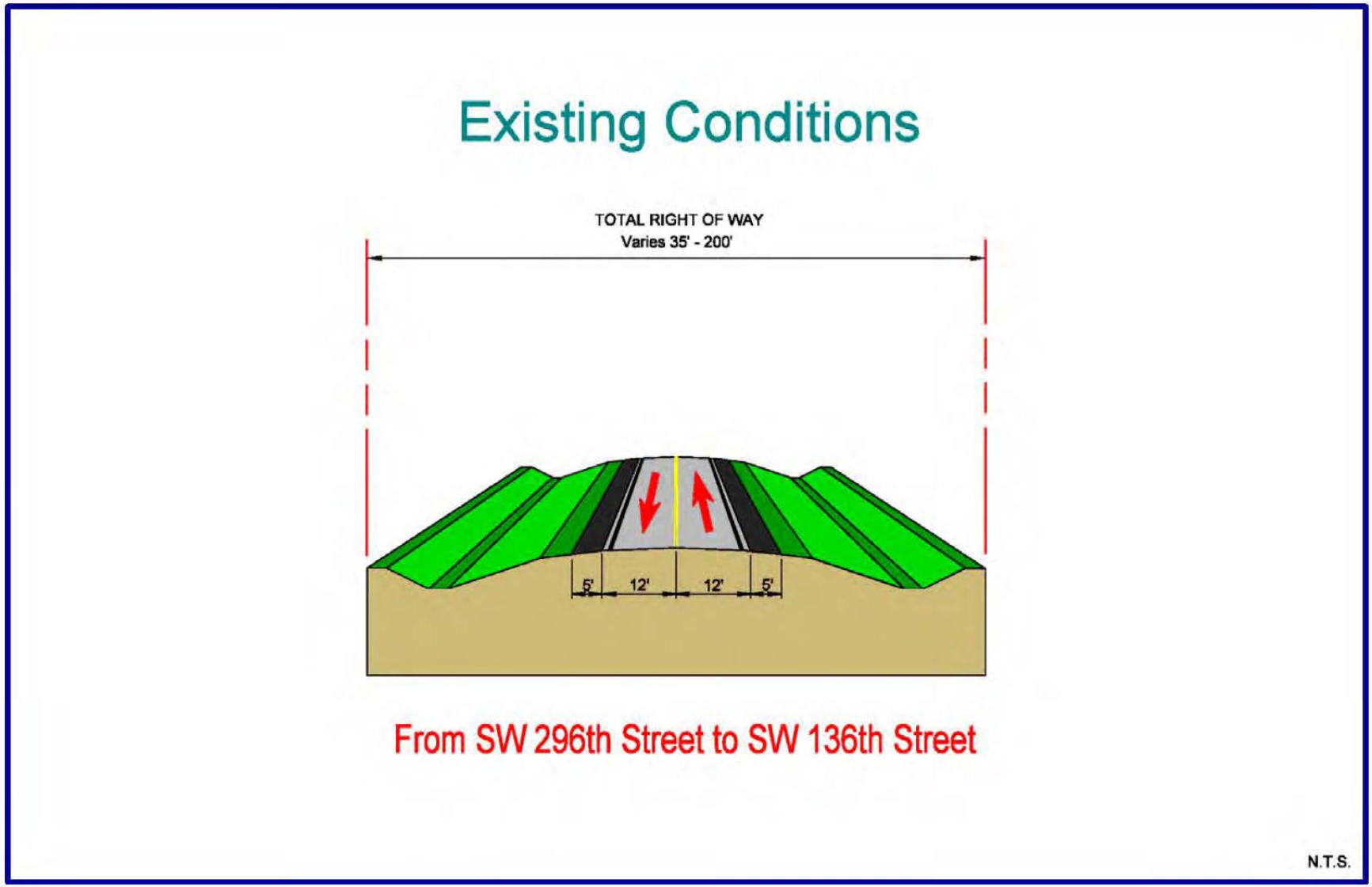


Figure 2-1 – Existing Two-Lane Rural Typical Roadway Section

2.2 ALTERNATE CORRIDORS EVALUATED

Alternate corridors were evaluated as part of this study in the *Corridor Analysis Report* (dated March 2011), a companion document to this PD&E study. The report identified and evaluated corridor alternates in the area surrounding the Krome Avenue facility to determine reasonable corridor alternative considerations. Factors relating to the design and location of the facility as well as information and issues relevant to the project decision were considered including socioeconomic, environmental, and engineering issues as well as the following alignment controls which may influence corridor location:

- Available right-of-way through which an improvement providing acceptable service could be routed.
- Cultural features including public and private development.
- Natural features which could be impacted by the project.
- Preservation of the rural character of lands outside the designated urban growth area.
- Logical termini giving consideration to directness, length, and service.

Each corridor alternate was analyzed and evaluated to a point of rejection or selection as a viable corridor. The impacts for each alternate corridor were identified and compared to other corridor alternates through the use of an evaluation matrix, which is presented in ***Table 2-1***, Corridor Evaluation Matrix (at the end of this section).

Three alternate corridor locations were considered in addition to the existing Krome Avenue corridor within the PD&E study limits as part of this analysis. The alternates consisted of parallel corridors to the Krome Avenue corridor. The analysis examined each of the corridors over the same approximate ten-mile project length. The analysis for all corridors begins at SW 296th Street/Avocado Drive and ends at SW 136th Street/Howard Drive. The following are the alternate corridors that were selected for evaluation (see ***Figure 2-2a*** through ***Figure 2-2c***):

1. SW 187th Avenue/Redland Road
2. SW 182nd Avenue/Roberts Road
3. SW 177th Avenue/Krome Avenue (existing)
4. SW 167th Avenue/Tennessee Road

There are no anticipated changes in land use designations for any of the study corridors at the time of this study. The CDMP updated land use plan (2015 and 2025) show no changes in land use in the project area from the earlier (2005 and 2015) land use plan. The 2010 EAR takes the same approach. The distinctive elements of each of these alternates are discussed in more detail in ***Section 2.2.1*** through ***Section 2.2.4***.

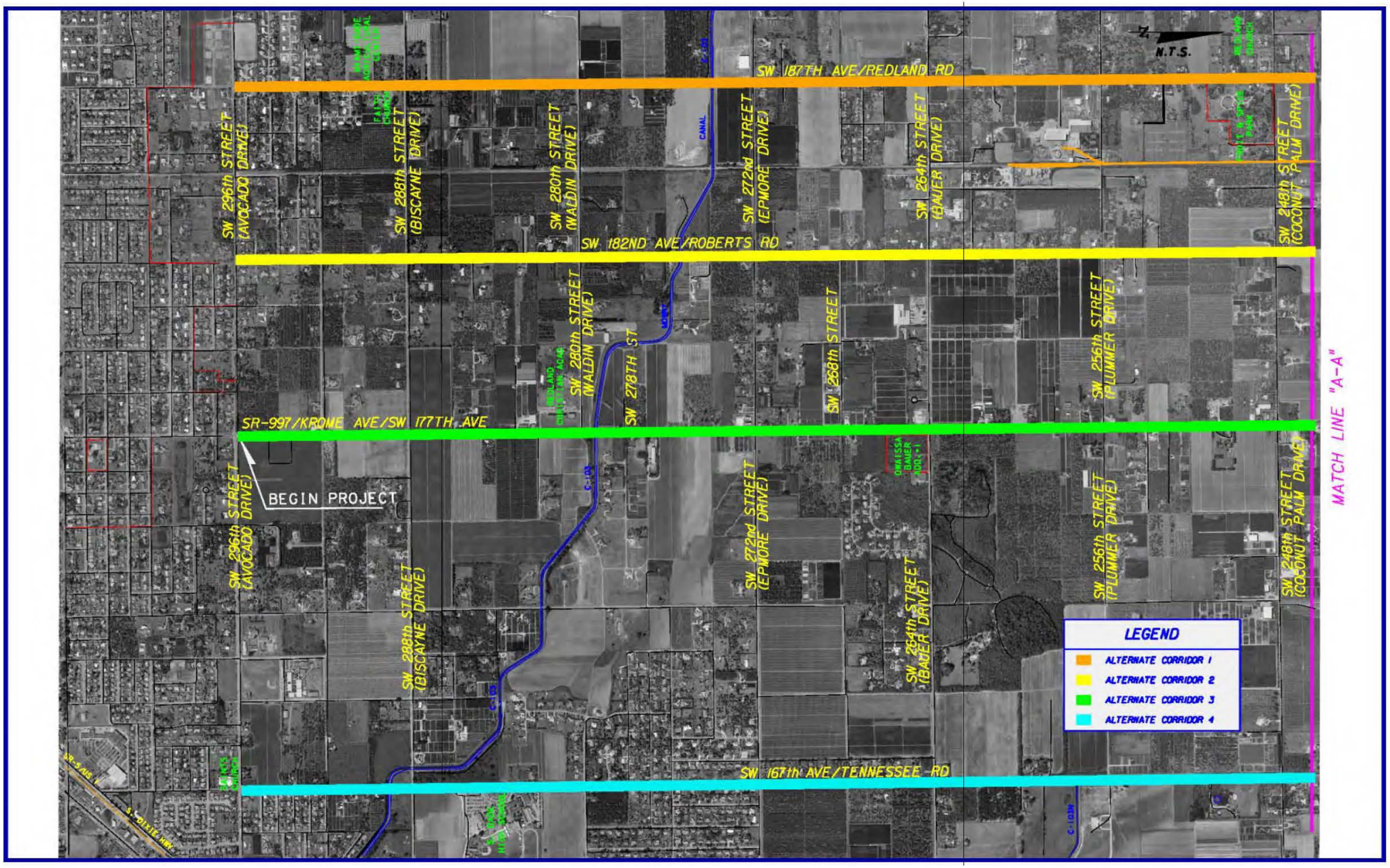


Figure 2-2a – Alternate Corridors

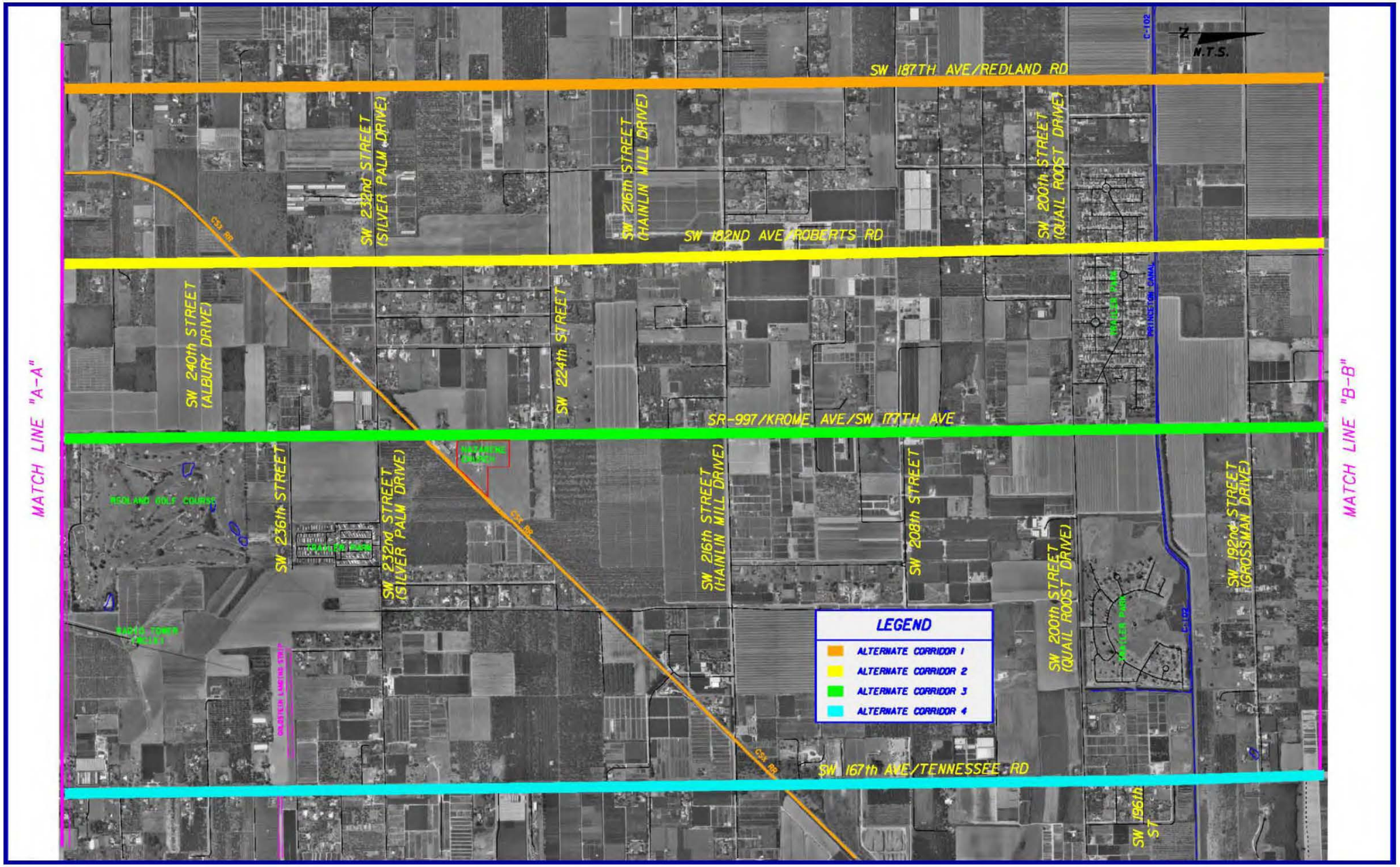


Figure 2-2b – Alternate Corridors

Figure 2-2c – Alternate Corridors

2.2.1 Alternate Corridor 1: SW 187th Avenue/Redland Road

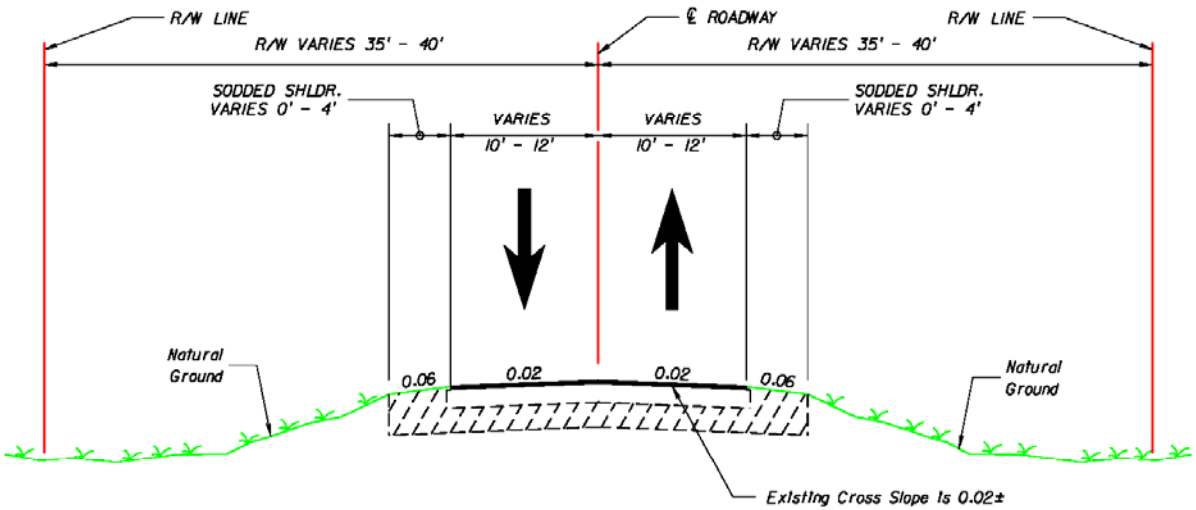
The existing roadway along this corridor alternate consists of a two-lane undivided typical section with no paved shoulders. The lanes vary from ten feet to 12 feet in width with sodded swales on both sides. The right-of-way varies from 70 feet to 80 feet in width. The posted speed limit varies from 30 MPH to 40 MPH. ***Figure 2-3*** illustrates the typical section of the SW 187th Avenue/Redland Road corridor.

The typical land use through this corridor consists of agricultural land with some residential and institutional uses. The roadway crosses both the SFWMD C-103/Mowry Canal and the C-102/Princeton Canal. The corridor also crosses the following major intersections: 1) SW 296th Street/Avocado Drive, 2) SW 288th Street/Biscayne Drive, 3) SW 280th Street/Waldin Drive, 4) SW 272nd Street/Epmore Drive, 5) SW 264th Street/Bauer Drive, 6) SW 256th Street/Plummer Drive, 7) SW 248th Street/Coconut Palm Drive, 8) SW 232nd Street/Silver Palm Drive, 9) SW 216th Street/Hainlin Mill Drive, and 10) SW 200th Street/Quail Roost Drive.

The University of Florida Miami-Dade County Cooperative Extension Service Agricultural Center/Institute of Food and Agricultural Sciences is located at the Miami-Dade County John D. Campbell Agricultural Center (18710 SW 288th Street) at the intersection of SW 187th Avenue and SW 288th Street. The Faith Church of the Redlands (28945 SW 187th Avenue) is located across from the Agricultural Center.

The Redland Community United Methodist Church (18700 SW 248th Street) is located at the intersection of SW 187th Avenue and SW 248th Street. The Miami-Dade County Preston B. Bird & Mary Heinlein Fruit & Spice Park (24801 SW 187th Avenue) is located across from the church.

Two historical sites exist along this corridor. The Pioneer Guild Hall, founded by the Women of Redland in 1907, is the last remaining structure from that time period found in this area and is located at the intersection of SW 187th Avenue and SW 272nd Street/Epmore Drive. The Walton House (12801 SW 187th Avenue) was built by W.K. Walton circa 1919. This wood frame, stucco covered residence is designed in the style of an English cottage and is not typical of other houses built during the same period in rural south Dade.



EXISTING TYPICAL SECTION
ALTERNATE CORRIDOR 1
SW 187th AVENUE/REDLAND ROAD

N.T.S.

Figure 2-3 – Alternate Corridor 1 Typical Section

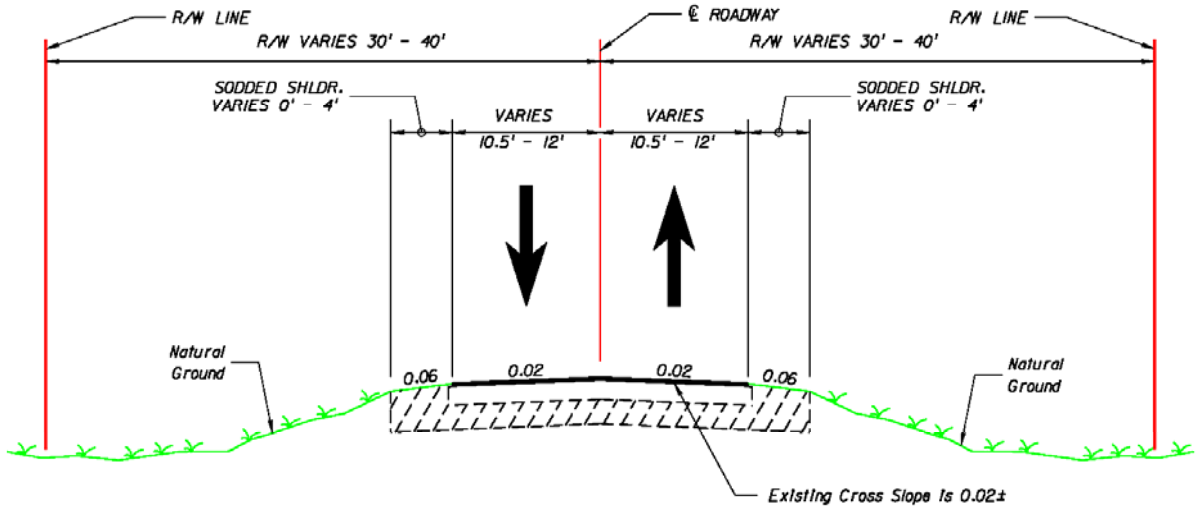
2.2.2 Alternate Corridor 2: SW 182nd Avenue/Roberts Road

The existing roadway along this corridor alternate consists of a two-lane undivided typical section with no paved shoulders. The lanes vary from 10.5 feet to 12 feet in width with sodded swales on both sides. The right-of-way varies from 60 feet to 80 feet in width. The posted speed limit varies from 30 MPH to 40 MPH. ***Figure 2-4*** illustrates the typical section of the SW 182nd Avenue/Roberts Road corridor.

The typical land use through this corridor consists of agricultural land with some residential uses. The roadway crosses the C-103/Mowry Canal, the CSX railroad line, and the following major intersections: 1) SW 296th Street/Avocado Drive, 2) SW 288th Street/Biscayne Drive, 3) SW 280th Street/Waldin Drive, 4) SW 272nd Street/Epmore Drive, 5) SW 264th Street/Bauer Drive, 6) SW 248th Street/Coconut Palm Drive, and 7) SW 232nd Street/Silver Palm Drive.

North of SW 224th Street the existing typical section changes to an unimproved two-lane dirt road. The roadway crosses the following major intersections: 8) SW 216th Street/Hainlin Mill Drive, and 9) SW 200th Street/Quail Roost Drive.

The roadway continues north as a minor (pseudo-private) roadway, and is known as Ferry Avenue (running down the middle of a large well established residential and trailer park area) for the segment north of SW 200th Street and south of the C-102/Princeton Canal (approximately SW 196th Street). The road stops at this point as there is no existing bridge crossing at the C-102/Princeton Canal. SW 182nd Avenue picks up again on the north side of the C-102/Princeton Canal (approximately SW 196th Street) and from that point the corridor is comprised of discontinuous intermittent paved, dirt or gravel roadway segments interspersed among agricultural or unimproved parcels of land, until it reaches the northern project terminus at SW 136th Street/Howard Drive.



EXISTING TYPICAL SECTION
ALTERNATE CORRIDOR 2
SW 182nd AVENUE/ROBERTS ROAD

N.T.S.

Figure 2-4 – Alternate Corridor 2 Typical Section

2.2.3 Alternate Corridor 3: SW 177th Avenue/Krome Avenue

The existing roadway along this corridor alternate varies slightly consisting primarily of two undivided lanes, varying in width from 10.5 feet to 12 feet; paved shoulders ranging from zero feet to five feet; and roadside swales. The right-of-way varies from 35 feet to 200 feet in width. The existing speed limit is posted at 45 MPH along the Krome Avenue corridor. ***Figure 2-5*** illustrates the typical section for this corridor. The existing Krome Avenue corridor traverses a farming and residential community. The agricultural land uses include numerous agricultural fields and herbaceous, ornamental, and fruit tree nurseries. The agricultural fields include seasonal "self-pick" fields with fruit/vegetable stands. There are many nurseries found scattered along much of the southern stretch of Krome Avenue; most are open to the public with direct access onto Krome Avenue.

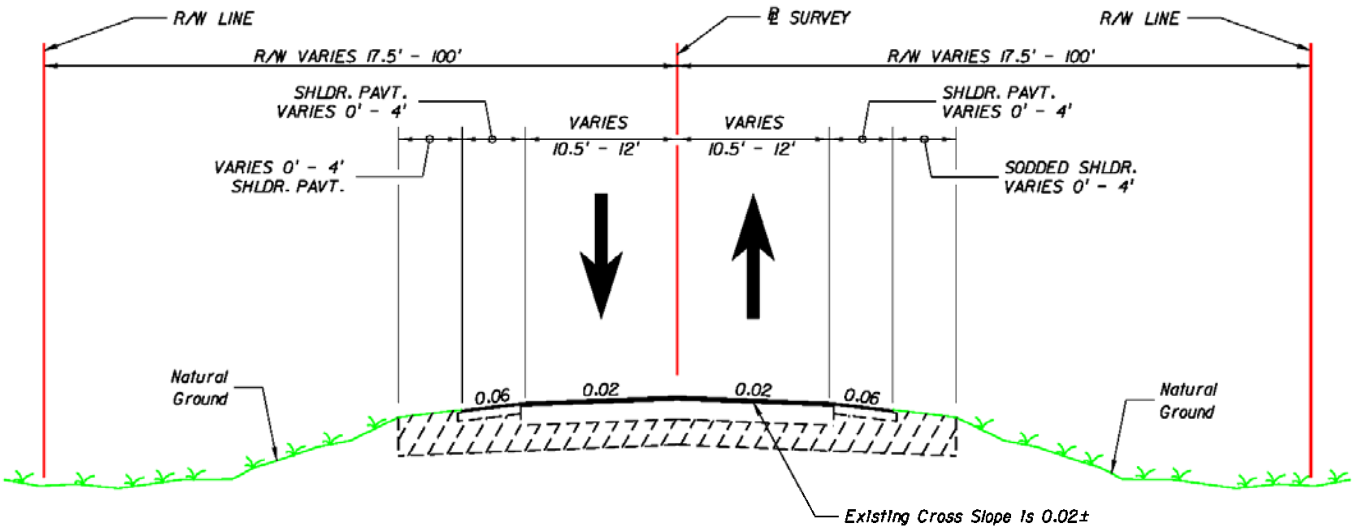
From SW 296th Street to SW 288th Street, residential estate densities of one to 2.5 dwelling units per acre occur on both sides of Krome Avenue. From SW 288th Street to SW 272nd Street, residential estates occur only on the east side of Krome Avenue, while agricultural land use occurs on the west side. North of SW 272nd Street, agriculture dominates land use along Krome Avenue, with the exception of some intersections that are designated business and office land uses. Office and business land uses along Krome Avenue are found at the intersections of SW 272nd Street, SW 248th Street, SW 232nd Street, and SW 200th Street. There are at least eight gas stations along the corridor. Along the southern portion of the Krome Avenue South corridor, between SW 288th Street and SW 184th Street, three establishments were found to have active horse hitching posts, which provide evidence of the historically preserved rural character of Krome Avenue. Other land uses include an airplane glider facility located at the intersection of SW 168th Street and Krome Avenue, three churches, and one religious school found along the corridor.

There is one ecologically important parcel of land adjacent to the Krome Avenue corridor, the 9.39-acre Owaissa Bauer Pineland Preserve Addition No. 1 property, located south of SW 264th Street along the east side of Krome Avenue. This property is owned by the state of Florida (acquired with Conservation and Recreation Lands Program funds) and is managed by the Miami-Dade County Department of Regulatory and Economic Resources (DRER), Environmental Monitoring and Restoration Division (EMRD), Environmentally Endangered Lands (EEL) Program. Important habitat consisting of pine rockland exists on this parcel along with several protected plant species. The Federal Highway Administration (FHWA) has determined that Section 4(f) does not apply to the Owaissa Bauer Pineland Preserve Addition No. 1.

Two unimproved SFWMD canal maintenance access roads bisect Krome Avenue within the study limits. One of the maintenance access roads runs parallel to the SFWMD C-102/Princeton Canal, which crosses Krome Avenue at approximately SW 196th Street, while the other maintenance access road runs parallel to the SFWMD C-103/Mowry Canal, which crosses Krome Avenue just north of SW 280th Street. These roads are currently mowed/maintained by the SFWMD for maintenance access to the adjacent canals. The MDPROS Master Plan Vision Map (dated November 11, 2009) shows both of these maintenance access roads as potential

future "greenways" in the MDPROS Master Plan. However, the SFWMD, the owner of these canal maintenance access roads, has no plans at this time for development of these canal maintenance access roads for trail use. Due to their current status as SFWMD canal maintenance access roads, they were not evaluated as potential Section 4(f) resources.

The historic Redland Golf Course is located adjacent to the eastern Krome Avenue right-of-way, north of SW 248th Street/Coconut Palm Drive. The FHWA has determined that the Redland Golf Course site qualifies for a *de minimis* Section 4(f) finding (see ***Section 4.2.2*** for details).



EXISTING TYPICAL SECTION

ALTERNATE CORRIDOR 3

SR 997/ KROME AVENUE/ SW 177TH AVENUE

N.T.S.

Figure 2-5 – Alternate Corridor 3 Typical Section

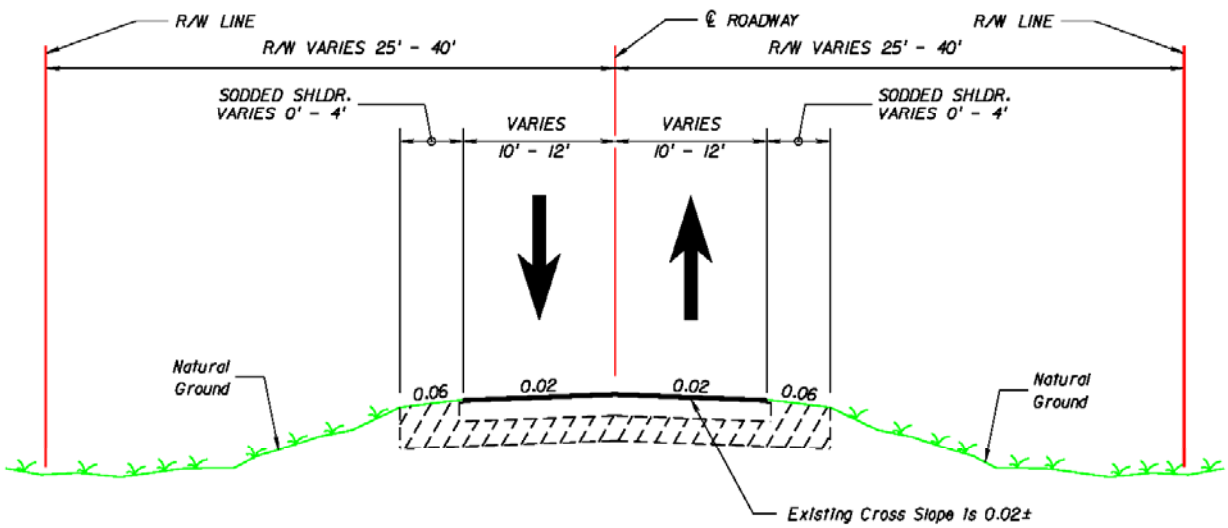
2.2.4 Alternate Corridor 4: SW 167th Avenue/Tennessee Road

The existing roadway along this corridor alternate consists of a two-lane undivided typical section with no paved shoulders. The lanes vary from ten feet to 12 feet in width with sodded swales on both sides. The right-of-way varies from 50 feet to 80 feet in width. The posted speed limit varies from 35 MPH to 40 MPH. ***Figure 2-6*** illustrates the typical section of the SW 167th Avenue/Tennessee Road corridor.

The typical land use through this corridor consists of agricultural land with numerous residential and institutional uses. The roadway crosses the C-103/Mowry Canal, the CSX railroad line and the following major intersections: 1) SW 296th Street/Avocado Drive, 2) SW 288th Street/Biscayne Drive, 3) SW 280th Street/Waldin Drive, 4) SW 272nd Street/Epmore Drive, 5) SW 264th Street/Bauer Drive, 6) SW 256th Street/Plummer Drive; 7) SW 248th Street/Coconut Palm Drive, 8) SW 232nd Street/Silver Palm Drive, 9) SW 216th Street/Hainlin Mill Drive, and 10) SW 200th Street/Quail Roost Drive.

North of SW 195th Street, the SW 167th Avenue corridor is comprised of discontinuous intermittent paved, dirt or gravel roadway segments. The segments are interspersed among agricultural or unimproved parcels of land, until the road reaches the northern project terminus at SW 136th Street/Howard Drive. SW 167th Avenue does not contain a bridge crossing for the C-102/Princeton Canal (approximately SW 196th Street).

The Church of Jesus Christ of Latter-Day Saints is located at the southwest corner of the SW 167th Avenue with SW 296th Street intersection. The South Dade Senior High School is located south of SW 282nd Street. The corridor borders the Camp Owaissa Bauer protected natural area. The Miami-Dade Transit bus, Route 70, services this area along this corridor from SW 296th Street/Avocado Drive to SW 280th Street/Waldin Drive. The Route 70 service area includes SW 212th Street/SW 85th Avenue (during midday only), South Dade Health Center, City of Homestead, Homestead High School, City of Florida City, and Prime Outlets at Florida City.



EXISTING TYPICAL SECTION
ALTERNATE CORRIDOR 4
SW 167th AVENUE/TENNESSEE ROAD

N.T.S.

Figure 2-6 – Alternate Corridor 4 Typical Section

2.2.5 Evaluation of Alternate Corridors

In order to evaluate the relative merits of each of the corridor alternates, a series of 16 different criteria including engineering, environmental, socioeconomic, and cost considerations were taken into account. Subsequently, each criterion was rated based on its degree of impact or improvement. The evaluations were generally qualitative (based on field review, data analysis and engineering judgment) and were used for comparisons between the alternates. The resulting corridor evaluation matrix is presented in ***Table 2-1*** (at the end of this section). The summary of the corridor analysis is detailed below:

2.2.5.1 Alternate 1 (SW 187th Avenue)

Alternate 1 (SW 187th Avenue) does not address the critical need for improved safety on Krome Avenue. The analysis also indicates that this alternate is anticipated to create undesirable impacts to noise levels. Social, neighborhood and community facility impacts are anticipated along this corridor, including potential impacts to the rural residences in the area, as well as potential impacts to two churches and a park, among others. Implementing improvements along this corridor will require some right-of-way to be acquired from both residential and agricultural business parcels. There is not a high density of residential uses along the corridor and moderate right-of-way costs are anticipated. SW 187th Avenue is presently not a state road facility. Implementing the improvements will require attaining a State Road designation and an upgrade of the facility to SIS standards.

2.2.5.2 Alternate 2 (SW 182nd Avenue)

Alternate 2 (SW 182nd Avenue) does not address the critical need for improved safety on Krome Avenue. The analysis also indicates that this alternate is anticipated to create undesirable impacts to noise levels. Social and neighborhood impacts are anticipated along this corridor, including impacts through the mobile home park. Implementing improvements along this corridor will produce substantial residential relocation impacts and will require substantial right-of-way to be acquired from both residential and agricultural business parcels. The unimproved segment of SW 182nd Avenue will require the construction of a bridge crossing at the C-102/Princeton Canal (at approximately SW 196th Street). SW 182nd Avenue is presently not a state road facility. Implementing the improvements will require attaining a State Road designation and an upgrade of the facility to SIS standards.

2.2.5.3 Alternate 3 (Krome Avenue/SW 177th Avenue)

Alternate 3 (Krome Avenue/SW 177th Avenue) provides the only solution to the existing deficient safety issues on Krome Avenue and has the least impacts and the greatest benefits. The analysis indicates that this Alternate improves safety on Krome Avenue resulting from better roadway geometrics and operational conditions. Implementing improvements along Krome Avenue will enhance the regional network connectivity and the local business economy. The analysis also indicates that this alternate is anticipated to create an increase over existing noise levels. Community facility impacts are anticipated along this corridor, including potential impacts to three churches and a school, among others; however, because the churches and the

park are set back from the existing roadway, the impacts are anticipated to only affect unimproved land and not the actual facilities. Implementing improvements along this corridor is not anticipated to require residential relocations.

2.2.5.4 Alternate 4 (SW 167th Avenue)

Alternate 4 (SW 167th Avenue) does not address the critical need for improved safety on Krome Avenue. The analysis also indicates that this Alternate is anticipated to create undesirable impacts to noise levels. Social, neighborhood and community facility impacts are anticipated along this corridor, including potential impacts to the numerous existing residences along the corridor as well as potential impacts to a school and a church, among others. This alternative is anticipated to negatively impact the less rural traffic patterns in the area. Implementing improvements along this corridor will produce high residential relocation impacts and will require substantial right-of-way to be acquired from a variety of local area businesses, as well as from residential and agricultural parcels of land. The unimproved segment of SW 167th Avenue will require the construction of a bridge crossing for the C-102/Princeton Canal (at approximately SW 196th Street). SW 167th Avenue is presently not a state road facility. Implementing the improvements will require attaining a State Road designation and an upgrade of the facility to SIS standards.

2.2.5.5 Alternate Comparison

Any relocation of the existing corridor (Krome Avenue) will require major social adjustments and produce impacts that result in substantial increases to noise levels. A relocation of the existing corridor would also maintain the existing unsafe and substandard conditions along Krome Avenue and at intersections with local cross streets. Additionally, the Krome Avenue corridor provides regional connectivity that cannot be adequately replaced by any of the other corridors in the near future.

Based on an evaluation of the corridor alternates, as presented in the evaluation matrix, it was determined that ***Alternate Corridor #3*** (Krome Avenue) is the most viable corridor for the improvement project. The analysis indicates that there is no practical and/or viable alternate corridor to Krome Avenue, and needed improvements to this roadway must be implemented to improve safety and traffic operations. Selecting the existing Krome Avenue corridor provides the clearest separation between urban and rural land use in the area and also provides capacity and system linkage solutions that could not be accomplished by the other alternates without causing unnecessary environmental and/or social impacts. Implementing improvements along the Krome Avenue / SW 177th Avenue corridor is the only way to meet the critical need for improved area safety and provides the best solution to problems associated with network connectivity and congestion, resulting in the best service to the overall public interest.

As a result, the existing SR 997/Krome Avenue/SW 177th Avenue corridor was selected and recommended for further consideration. A more detailed investigation and evaluation of specific improvement alternatives to address safety, geometric, operational, and access issues for this corridor is provided in the PER prepared as part of the PD&E study.

2.2.5.6 Project Termini

The alternatives analyzed have been reviewed pursuant to 23 CFR §771.111(f) and FHWA guidance published November 5, 1993 (NEPA and Transportation Decision-making, The Development of Logical Project Termini "Guidance") regarding the development of logical project termini. This analysis is informed principally by the project purpose and need. As discussed in ***Section 1.0***, the primary objective of the project is to address safety deficiencies along this section of the Krome Avenue corridor. Secondary objectives are to provide additional capacity to accommodate anticipated future area travel demand, address other design deficiencies along the roadway, maintain the effectiveness of the corridor as an emergency evaluation route and improve regional connectivity.

The regulations outline three general principles to use in analysis of highway projects. The proposed action shall:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
2. Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Logical termini are defined as rational end points for a transportation improvement and for a review of the environmental impacts. Logical termini are a function of project purpose. Typically such termini have been points of major traffic generation due to the fact that in most cases traffic generators determine the size and type of project being proposed. Where congestion is not the primary purpose of a project this type of termini selection is not appropriate. Safety projects present such an example.

The FHWA Guidance distinguishes safety projects. One case study provided focuses on a road segment with a number of high accident locations and site specific geometric deficiencies. The project termini selected (an intersection and another point along the roadway without an intersection) were reasonable. The guidance indicated that "for projects involving safety improvements, almost any termini (e.g., political jurisdictions, geographical features) can be chosen to correspond to those sections where safety improvements are most needed." The guidance recognizes that even if other safety improvements are needed beyond the segment shown, the project does not need to be expanded to include those other improvements.

The Krome South project's primary purpose is safety. The PER documents abnormally high crash rates for the entire project length. The safety issues identified relate not just to the intersections but also to the fundamental corridor design. The high proportion of truck traffic, undivided two lane section, roadside clear zone, lack of median and access management issues all compromise safety. The project identified from SW 296th Street to SW 136th Street exhibits the safety deficiencies identified and under the Guidance represent logical project termini.

Although the entire Krome Avenue corridor is being considered for four laning to address safety issues, each segment displays independent utility or significance from the others. Construction of the project will address documented safety and capacity problems and address the primary project purpose even if no additional transportation improvements in the area are made. The project is usable and a reasonable expenditure even if the other safety issues along the Krome Avenue corridor are not addressed. These improvements do not force other improvements on the corridor.

Finally, the project improvements do not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. Other alternatives, whether they be other corridors or improvements to the Krome Avenue corridor beyond project boundaries would not alter the fact that the project area is and would remain deficient from a safety point of view. The selection of other projects would not eliminate the need for this project, nor would this project prejudice consideration of others.

Therefore, this project was not evaluated as a "connected action" to any other project. It is reasonable to address the safety issues as resources are available, particularly given the documented safety deficiencies throughout the area. ***Section 1.2.2.1*** documents the crash history and safety ratios for the project area. Addressing the safety issues within the project boundary will improve the safety of the corridor and will not "automatically trigger" other actions which may require environmental impact statements within the meaning of 40 C.F.R. §1508.25. The project can proceed independently of any other safety projects along the corridor and the net result will still be an increase in safety along the corridor; it may proceed regardless whether other safety projects along the corridor are undertaken previously or simultaneously and it does not depend on other projects for its justification. Each segment of Krome Avenue under consideration is undergoing federal and state permitting and has been or will be analyzed pursuant to NEPA. Each segment is being cumulatively studied with the others to ensure that all direct, indirect and cumulative impacts which are reasonably foreseeable are being considered. A full analysis of past, present and reasonably foreseeable actions associated with this Krome South project were considered in the cumulative impacts analysis conducted for this project, presented in ***Section 4.3.18***.

Table 2-1 – Corridor Evaluation Matrix

CRITERIA		ALTERNATE CORRIDORS			
		ALTERNATE 1 (SW 187th Avenue)	ALTERNATE 2 (SW 182nd Avenue)	ALTERNATE 3 (SW 177th Avenue)	ALTERNATE 4 (SW 167th Avenue)
ENGINEERING	Roadway Safety	Unspecified traffic diversion is anticipated to alleviate congestion issues with low - moderate residual safety improvement.	Unspecified traffic diversion is anticipated to alleviate congestion issues with low - moderate residual safety improvement.	Improved geometric and operational conditions including: median separator, uniform pavement width, striping, shoulder and intersections provide high safety benefit.	Unspecified traffic diversion is anticipated to alleviate congestion issues with low - moderate residual safety improvement.
	Local Land Use Plan Compliance	Maintain Status Quo.	Maintain Status Quo.	Maintain Status Quo.	Maintain Status Quo.
	Traffic Service /Travel Demand	Significant increase to existing volume of traffic.	Significant increase to existing volume of traffic.	Improved traffic service.	Significant increase to existing volume of traffic.
	Transportation Network / Regional Connectivity	Moderate local network improvements.	Moderate local network improvements.	Improved regional network connectivity.	Moderate local network improvements.
	Access Management	No significant impacts.	No significant impacts.	Some impacts anticipated.	No significant impacts.
	Maintenance of Traffic	Temporary impacts.	Temporary impacts.	Temporary impacts to businesses.	Temporary impacts.
	Utility Impacts	Moderate impacts expected no RR crossing.	Moderate impacts expected, with RR crossing.	Moderate impacts expected, with RR crossing.	Moderate impacts expected, with RR crossing.
ENVIRONMENT	Environmental Considerations	Significant increase in noise levels anticipated.	Significant increase in noise levels anticipated.	Moderate increase in noise levels anticipated.	Significant increase in noise levels anticipated.
	Physical Impacts	Temporary construction impact.	Temporary construction impact.	Temporary construction impact and temporary access disruption to businesses.	Temporary construction impact.
	Natural Habitat Impacts	Adjacent to protected natural areas with no potential for impacts during construction.	Adjacent to protected natural areas with a potential for impacts during construction.	Adjacent to protected natural areas with a potential for impacts during construction.	Adjacent to protected natural areas with a potential for impacts during construction.
COST	Corridor extension to the north and at various intersections	Corridor discontinuity and intersection development.	Corridor discontinuity and intersection development.	Some improvement at various intersections needed.	Corridor discontinuity and intersection development.
	Relocation Potential and Mitigation Cost	Moderate relocation potential.	Significant relocation potential.	Limited additional R/W needed.	Significant relocation potential.
	Construction and R/W Cost	High construction cost and moderate R/W cost anticipated.	High construction cost and high R/W cost anticipated.	Moderate construction cost and low R/W cost anticipated.	High construction cost and high R/W cost anticipated.
SOCIO-ECONOMIC	Social & Neighborhood Impacts	Significant impacts anticipated.	Significant impacts anticipated.	No significant changes.	Significant impacts anticipated.
	Economic Impacts	Minimal impact to local economy anticipated.	Minimal impact to local economy anticipated.	Benefit to local business economy anticipated. Moderate impact to agricultural land use anticipated.	Minimal impact to local economy anticipated.
	Community Facilities Impacts	Significant impacts to churches, park and other community facilities anticipated.	Limited community impacts.	Potential impacts to churches and other community facilities anticipated.	Potential impacts to school, church and parks anticipated.

KEY:

Least negative impacts and/or most favorable outcomes
Moderate impacts and/or moderate outcomes
Most negative impacts and/or least favorable outcomes

Source: Corridor Analysis Report, March 2011

2.3 PROJECT ALTERNATIVES

Both no-build and build alternatives were considered for the Krome Avenue corridor between SW 296th Street to SW 136th Street as part of this PD&E Study. The alternatives were prepared to provide appropriate levels of service commensurate with the anticipated social, economic, and environmental impacts involved. The alternatives developed were further refined with the objective of avoidance and minimization of impacts. The decisions to achieve these objectives are documented in the PER and summarized below.

2.3.1 No-Build Alternative

The No-Build Alternative assumes that no improvements would be implemented within the corridor. With this alternative, the existing roadway would be maintained "as is", with a two-lane, undivided typical section (*see* ***Figure 2-1***). The lack of grass median and adequate shoulders, the substandard drainage and water quality treatment facilities, the non-optimized traffic operations, and the existing safety deficiencies would be retained. This alternative was considered viable during the Public Hearing and final selection phase to serve as a comparison to the study proposed alternatives.

The No-Build Alternative has a number of positive aspects, since it would not require expenditure of public funds for design, right-of-way acquisition, construction or utility relocation. Traffic would not be disrupted due to construction, thereby avoiding inconveniences to local residents and businesses. Also, there would be no direct or indirect impacts to the environment, the socio-economic characteristics, community cohesion, or system linkage of the area.

However, the No-Build Alternative fails to fulfill the needs of this project for the area. If no improvements are made, the safety deficiencies associated with this corridor will remain. A grass median, which is anticipated to reduce head-on and angle crashes between the intersections, will not be provided along the corridor within the study limits, with this alternative.

Under the No-Build Alternative, future roadway congestion during peak hours will increase. Krome Avenue, within the study limits, and its cross roads will experience congestion during peak hours and operate below the desirable LOS. If improvements are not constructed before the year 2040, Krome Avenue will operate at LOS E or F, and all signalized intersections will operate at LOS F. The congestion in the area may cause additional impacts to this roadway. Such impacts may include excessive delays in travel time, large reduction of average travel speeds, excess fuel consumption from idling vehicles, increased air pollutants [particularly hydrocarbons and carbon monoxide (CO)], and higher crash rates. Krome Avenue will become even less effective as an evacuation route for the area.

Furthermore, the design deficiencies along the corridor within the study limits identified in ***Section 1.2.2.3*** will not be addressed by the No-Build Alternative. Left side clear recovery area, which is anticipated to reduce centerline cross over head-on crashes, will not be provided. No stormwater treatment or peak attenuation will be provided. No median separation will be

provided, so SHS access management requirements that will limit conflict points and enhance safety will continue to be unmet.

The No-Build Alternative will not be consistent with area growth management and transportation plans, which designate Krome Avenue within the study limits as a four-lane roadway. The No-Build Alternative will not accommodate the social and economic demands of a growing Miami-Dade County. Lastly, the No-Build Alternative will maintain the existing typical section, which does not provide for either pedestrian or bicycle continuous access along Krome Avenue within the study limits.

2.3.2 Transportation System Management Alternative

This alternative involves selectively upgrading deficient roadway areas with improved signage, turn lanes, pavement markings, and traffic signals. TSM intersection improvements have already been constructed along portions of the study corridor. However, this alternative will not satisfy the safety, capacity, and traffic operations improvement needs along this section of roadway. Short-term safety improvement projects were implemented at ten intersections along Krome Avenue within the study limits between the years 2003 to 2007.

1. SW 136th Street (2003-2004)
2. SW 168th Street (2003-2004)
3. SW 184th Street (2007)
4. SW 192nd Street (2003-2004)
5. SW 200th Street (2007)
6. SW 216th Street (2007)
7. SW 256th Street (2003-2004)
8. SW 272nd Street (2003-2004)
9. SW 288th Street (2007)
10. SW 296th Street (2007)

These intersection improvements consisted of adding separate turn lanes or modifying pavement markings to delineate turn lanes. These improvements were anticipated to reduce crashes at the intersections with the exception of head-on and ran-off-the-road crashes. The TSM improvements did not substantially enhance the operation of the signalized intersections or safety issues associated with this corridor and did not include corridor drainage improvements. The crash data analysis for this project, provided in the PER, documents that the safety ratios have remained at or above twice the statewide average subsequent to these improvements. The congestion along Krome Avenue is caused by a lack of through lane capacity and high turning volumes. Long-term improvements are necessary to mitigate the existing safety deficiencies, increase capacity to accommodate future travel demand, improve access management, and provide stormwater management. Therefore, further consideration of this alternative was eliminated from the analysis.

2.3.3 Action Plan Alternative

The Krome Avenue Action Plan was developed in 1997 and approved by the MPO in 1999. The primary purpose of the plan was to identify and evaluate alternatives for transportation improvements other than additional general use lanes and restrictive medians along Krome Avenue. The limits of the Action Plan were from SR 5/US 1 to SR 25/US 27. The plan considered improvements to accommodate present and future traffic conditions within the

corridor. The proposed improvements were primarily oriented toward access management, intersection improvements, multi-modal improvements, resurfacing, drainage improvements, and pedestrian/bicycle and equestrian facilities.

The goal of the Krome Avenue Action Plan was to develop corridor modifications to improve safety and future LOS along the corridor. The main focus of the Action Plan was to develop the immediately needed improvements and to address future mobility along Krome Avenue. Long-term improvement alternatives included safety enhancements, intersection modifications, traffic signal modifications, access management, and shoulder enhancements

In the Action Plan a two lane undivided typical section (see ***Figure 2-7***) with roadway improvements was recommended for implementation for Krome Avenue north of SW 296th Street/Avocado Drive. This typical section would consist of the following elements:

- One 12-foot (12') wide travel lane in each direction
- Two-foot (2') wide center painted buffer median
- Two eight-foot (8') wide outside shoulders [five-foot (5') paved and three-foot (3') unpaved]
- Roadside swale width varies throughout the project depending on existing right-of-way
- Eight-foot (8') wide bike path parallel to the southbound travel lanes
- Eight-foot (8') wide equestrian path parallel to the northbound travel lanes.
- Design Speed of 45 MPH (reconstruction criteria)
- Recoverable Terrain (Clear Zone) is 18 feet (18') wide from the edge of pavement (minimum)
- Border Width varies from the shoulder point throughout the project depending on existing right-of-way [eight feet (8') minimum)]
- The total width of this typical section is 62 feet (62') minimum

The border width is measured from the shoulder point to the right-of-way line. The border width accommodates roadside components such as signing, drainage features, guardrail, fencing and clear zone, the construction and maintenance of the facility, and permitted public utilities.

The Action Plan Alternative typical section does not comply with horizontal clearance distance criteria and does not meet design criteria to tie to and harmonize with the existing ground. Right-of-way acquisition is required for this typical section since some areas have an existing right-of-way of 35 feet and the minimum right-of-way for the proposed typical section is 62 feet.

The Krome Avenue Action Plan's original typical section was revised by the PD&E Study project team in order to comply with FDOT criteria for reconstruction of a facility. The updated typical section was used during this study as a comparison with the proposed study alternatives (see ***Figure 2-8***). This "modified" typical section would consist of the following elements:

- One 12-foot (12') wide travel lane in each direction
- Two-foot (2') wide center painted buffer median
- Two eight-foot (8') wide outside shoulders [five-foot (5') paved and three-foot (3') unpaved]
- Roadside swale width varies throughout the project depending on existing right-of-way
- Eight-foot (8') wide bike path parallel to the southbound travel lanes
- Eight-foot (8') wide equestrian path parallel to the northbound travel lanes
- Eight-foot (8') wide grass horizontal clearance between the bike path and the right-of-way line (includes harmonization areas)
- Nine-foot (9') wide grass horizontal clearance between the equestrian path and the right-of-way line (includes harmonization areas)
- Design Speed of 45 MPH (reconstruction criteria)
- Recoverable Terrain (Clear Zone) is 18 feet (18') wide from the edge of pavement (minimum)
- Border Width varies from the shoulder point throughout the project depending on existing right-of-way [eight feet (8') minimum]
- The total width of this typical section is 78 feet (78') minimum

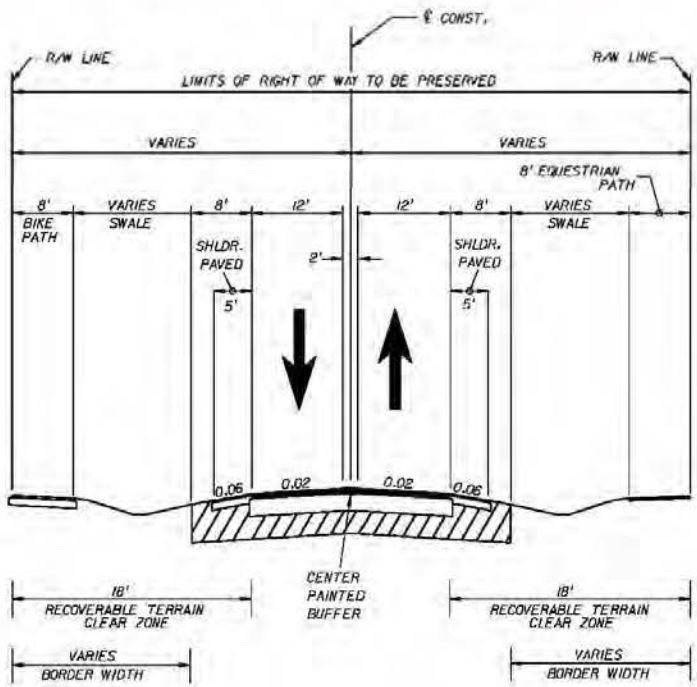
The Action Plan "original" and "modified" alternatives both fail to fulfill the needs of this project for the area. With each of these alternatives, the safety deficiencies associated with this corridor will remain. A grass median, which is anticipated to reduce head-on and angle crashes between the intersections, will not be provided along the corridor within the study limits with either of these alternatives.

Under the "original" or the "modified" Action Plan alternatives, future roadway congestion during peak hours will increase. The congestion in the area may cause additional impacts to this roadway. Such impacts may include excessive delays in travel time, large reduction of average travel speeds, excess fuel consumption from idling vehicles, increased air pollutants, and higher crash rates. In addition, Krome Avenue will become even less effective as an evacuation route for the area with the Action Plan alternatives.

Furthermore, the design deficiencies along the corridor within the study limits will not be addressed by either the "original" or the "modified" Action Plan alternative. Adequate left side clear recovery area, which is anticipated to reduce centerline cross over head-on crashes, will not be provided. No median separation will be provided, so SHS access management requirements that will limit conflict points and enhance safety will continue to be unmet.

The Action Plan Alternatives, "original" and "modified," will not be consistent with area growth management and transportation plans, which designate Krome Avenue within the study limits as a four-lane roadway. Neither alternative will accommodate the social and economic demands of a growing future Miami-Dade County. Therefore, both the "original" and the "modified" Action Plan alternatives were eliminated from further consideration.

Action Plan - Original



RECONSTRUCTION CRITERIA

DESIGN SPEED ≥ 45 MPH
RECOVERABLE TERRAIN / CLEAR ZONE = 18' (MINIMUM)
BORDER WIDTH = 8' (MINIMUM)
MEDIAN PAINTED BUFFER WIDTH = 2'

NOTE:

1. TYPICAL SECTION DOES NOT COMPLY WITH HORIZONTAL CLEARANCE AND TIE DOWN DISTANCES.
2. LIMITS OF R.O.W. CANNOT BE PRESERVED WITH THIS TYPICAL SECTION SINCE SOME AREAS HAVE AN EXISTING R.O.W. OF 35' AND THE MINIMUM R.O.W. FOR THE PROPOSED TYPICAL IS ≥ 62'.
3. SWALES SHOULD BE A MINIMUM OF 12'.
4. BIKE PATH SHOULD BE A MINIMUM OF 10'.

N.T.S.

Figure 2-7 – Action Plan (Original) Proposed Typical Roadway Section

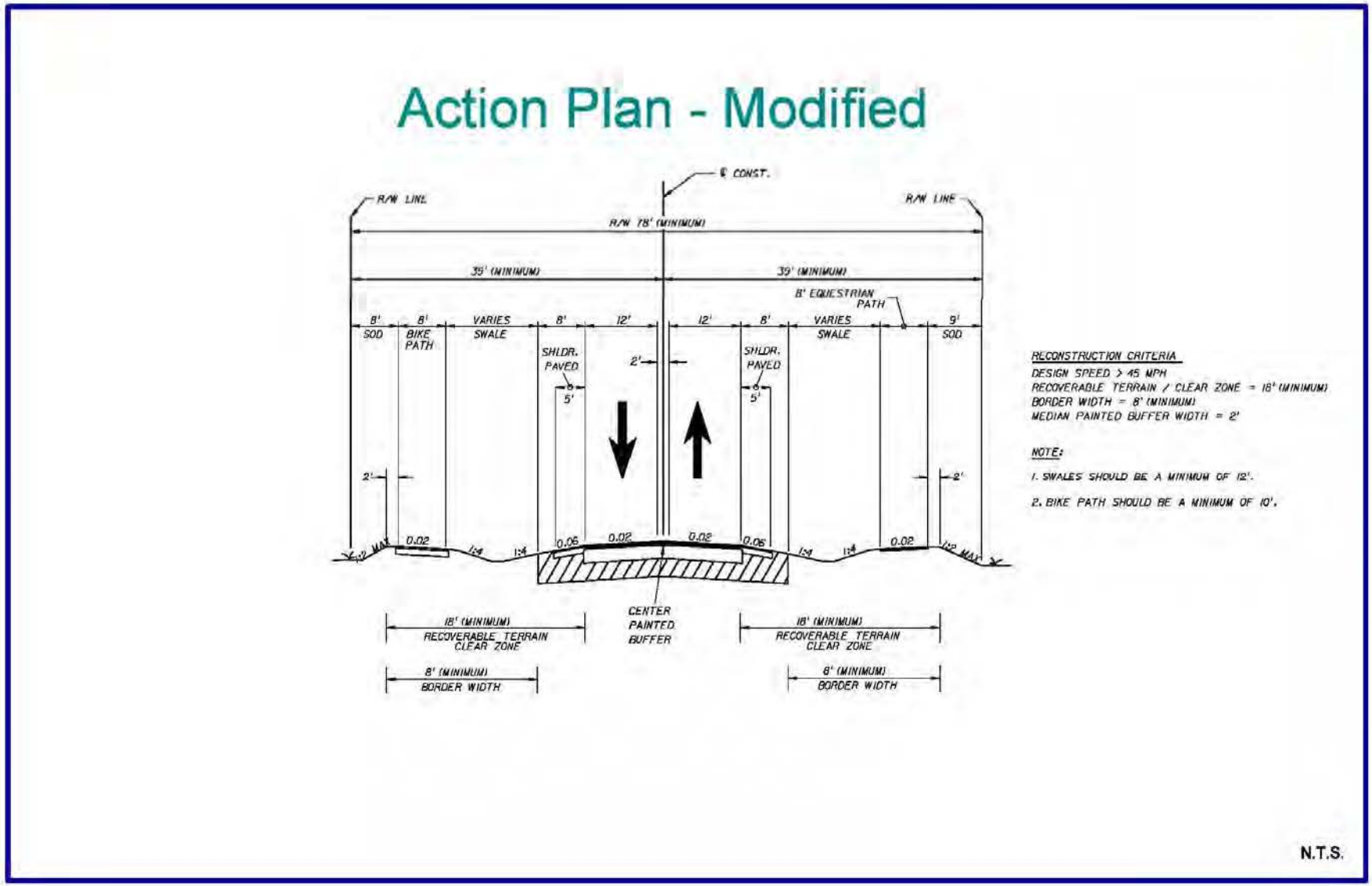


Figure 2-8 – Action Plan (Modified) Proposed Typical Roadway Section

2.3.4 Proposed Build Alternatives

As discussed in the previous sections, the No-Build, TSM, and Action Plan alternatives will not provide adequate traffic capacity or safety improvements to the corridor; therefore, additional study alternatives have been developed to enhance safety, increase capacity, and improve traffic operations along the Krome Avenue corridor. Numerous build alternative typical sections were considered and are discussed in the following sections.

2.3.4.1 Initial Evaluation of Conceptual Typical Sections

The purpose of this section is to discuss the conceptual typical sections that were developed during the initial phase of the study. All conceptual typical sections were evaluated and analyzed in general in order to develop build alternatives for further analysis.

A total of 46 typical sections were developed during the initial alternative analysis. These conceptual alternatives were categorized by the number of lanes. The development and evaluation of these typical sections were based on established design controls for the various elements of a roadway such as lane width, median width, shoulder width, design speed, horizontal alignment, vertical alignment, drainage considerations, and intersecting roads. The selection of the appropriate criteria and standards was influenced by safety features, traffic volumes and composition (trucks, farm equipment, etc.), levels of service, functional classification, environmental considerations, and community issues.

Two-Lane Undivided Typical Section

Ten two-lane undivided typical sections were evaluated using the Action Plan recommendations. The proposed improvements encompassed resurfacing the existing lanes, adding a two-foot center buffer and including pedestrian/bicycle facilities. The pedestrian/bicycle facilities included a combination of sidewalks, shared-use paths, bike lanes, and equestrian paths.

Two-Lane Divided Typical Section

Eight two-lane divided typical sections were evaluated in order to include a grass median and areas for exclusive turn lanes. The proposed improvements included rural and urban characteristics. The rural improvements encompassed the addition of a depressed grass median, paved inside shoulders, one 12-foot-wide travel lane in each direction, paved outside shoulders, drainage swales, and pedestrian/bicycle facilities. The urban improvements encompassed the addition of a raised grass median, curb and gutter, and pedestrian/bicycle facilities. The pedestrian/bicycle facilities in both the rural and urban sections included a combination of sidewalks, shared-use paths, bike lanes, and equestrian paths.

Three-Lane Undivided Typical Section

Eight three-lane undivided typical sections were evaluated to include a center two-way left turning lane. The proposed improvements included rural and urban characteristics. The rural

improvements encompassed the addition of a 12-foot-widecenter two-way left turning lane, one 12-foot-wide travel lane in each direction, paved outside shoulders, drainage swales, and pedestrian/bicycle facilities. The urban improvements encompassed the addition of a 12-foot center two-way left turning lane, one 12-foot-wide travel lane in each direction, outside curb and gutter, and pedestrian/bicycle facilities. The pedestrian/bicycle facilities in both the rural and urban sections included a combination of sidewalks, shared-use paths, bike lanes, and equestrian paths.

Two-Lane Divided Typical Section with Passing Zones

Four two-lane divided typical sections with passing zones were evaluated to include an additional lane that will serve as a passing lane. Each passing zone consisted of one passing lane per direction alternatively. The proposed improvements included rural and urban characteristics with the same roadway characteristics as the two-lane divided typical section described above.

Four-Lane Divided Typical Section

Fifteen four-lane divided typical sections were evaluated to include a grass median and additional through lanes. The proposed improvements included rural, suburban, and urban characteristics. The rural improvement encompassed the addition of a depressed grass median, paved inside shoulders, two 12-foot-wide travel lanes in each direction, paved outside shoulders, drainage swales, and pedestrian/bicycle facilities. The suburban and urban improvements encompassed the addition of a raised median, curb and gutter, and pedestrian/bicycle facilities. For all the sections, the pedestrian/bicycle facilities included a combination of sidewalks, shared-use paths, bike lanes, and equestrian paths.

Five-Lane Undivided Typical Section

One five-lane undivided typical section was evaluated to include a center two-way left turning lane. The proposed improvements included urban characteristics only. The urban improvements encompassed the addition of a 12-foot-wide center two-way left turning lane, two 12-foot-wide travel lanes in each direction and pedestrian/bicycle facilities. The pedestrian/bicycle facilities included bike lanes and sidewalks along both sides of the roadway.

Typical Section Refinement

The 46 conceptual typical sections developed above were refined with the objective of addressing the needs of the corridor. Krome Avenue is part of the SIS network. Future FDOT roadway improvements on existing SIS facilities are required to bring the corridors up to current FDOT design standards to the extent practical. This includes the corridors that may have previously been hindered or prevented in achieving full SIS standards. This requirement came after the FDOT adopted the FIHS standards in 1992[3].

[3] Since the time of alternative development for this project, the FIHS sunset in 2012 and was replaced with the SIS.

Unregulated access to the SHS was determined to be one of the contributing factors to congestion and functional deterioration of the system statewide. SIS requirements call for an Access Class 2 or 3. Krome Avenue carries an access management designation of Class 2 within the project limits and the *Binding Access Control Plan* submitted by the FDOT to Miami-Dade County maintains the Access Class 2 designation. Access Class 2 facilities are highly controlled access facilities distinguished by the ability to serve high speed and high volume traffic over long distances in a safe and efficient manner. This access class is further distinguished by a highly controlled limited number of connections, median openings, and infrequent traffic signals. Segments of the SHS having this classification usually have access restrictions supported by local ordinances and agreements with the FDOT, and are generally supported by existing or planned service (frontage) roads. SHS Access Class 2 facilities also include median separation.

Krome Avenue is classified as an Urban Principal Arterial for the segment between SW 296th Street and SW 272nd Street and is classified as a Rural Principal Arterial for the segment between SW 272nd Street and SW 136th Street, because the UDB for Miami-Dade County crosses Krome Avenue at SW 272nd Street. Based on these classifications, all urban typical sections initially evaluated were eliminated from further alternative analysis for the segment between SW 272nd Street and SW 136th Street due to the roadway type classification. In addition, all urban typical sections between SW 296th Street and SW 272nd Street were eliminated in favor of a suburban transition typical section.

A review of crash history was conducted in relation to typical section elements. A total of 1424 crashes were reported along the corridor during the 12-year study period (1999-2010). Twenty-six fatalities were reported during the study period with 58% of the crashes resulting in injuries. Rear-end crashes were the leading type of crashes within the corridor, accounting for 36% of the crashes experienced during the 12-year period. Angle and left turn crashes were the second and third leading types of crashes, accounting for 24% and 10% respectively of the crashes along the corridor during the study period. The high percentage of angle, rear-end and left turn collisions are typical of a roadway having poor intersection geometry and/or needing additional capacity. Currently access along Krome Avenue is not restrictive which does not comply with Access Class 2 criteria. Left turning vehicles can turn anywhere along the corridor without reaching the signalized intersections. These vehicles will interrupt the movement of through traffic causing major traffic backups and rear-end collisions. Also, these same vehicles will make it difficult for incoming traffic to maintain their traveling speed causing sideswipes, angle and left turn collisions. Furthermore, crashes that occur between the intersections, such as head-on crashes are typically more severe compared to intersection crashes resulting in higher rate of crash severity. Thirty-four head-on crashes were reported during the study period accounting for 2% of the crashes. Median separation as a long-term solution is anticipated to reduce head-on crashes. Based on this type of constraint, a grass median should be included to accommodate the left turn lanes, improve access management, and separate the oncoming traffic.

Based on the need to provide traffic separation for safety, all undivided typical sections were eliminated from further analysis due to the safety need for a grass median separation. The need for a grass median separation is essential for this corridor due to the high volumes of left turn vehicles and the head-on crashes occurring within the study limits.

The 46 initially developed conceptual typical sections were presented at the CAC meetings (January 24th, 2006 and February 28th, 2006) and Public Information Workshop (May 31st, 2006). Public participation and input, including from the CAC, was instrumental in the development and evaluation of project typical sections as the project was being developed.

During those meetings, there was minimal public support for and substantial opposition to the urban/non-rural typical sections, as well as any typical sections which included equestrian paths, sidewalks on both sides of the roadway, and fully designated bike lanes. In general, citizens, residents, and business owners expressed a goal to preserve the rural character of the area to the extent practical, including a desire to avoid "extra" wide pavement for "urban" bike lanes located between the travel lanes and the shoulder (for additional details, see ***Section 5.3.1***). As a result of this input, typical sections containing those elements were eliminated from further analysis.

All the typical sections evaluated were based on a range of design speeds from 45 MPH to 65 MPH. Since Krome Avenue is part of the SIS network, the design speed for controlled access facilities shall be at least 65 MPH in rural areas and 50 MPH in urbanized areas. As discussed in Section 5.2.1 of the PER**,** in recognition of the possibility of upgrading the existing posted speed limit of 45 MPH along Krome Avenue within the study limits, the design speed for the suburban section was recommended to be 55 MPH, greater than the minimum required. Based on the decision to use a design speed of 55 MPH , all initially developed conceptual typical sections that were based on a design speed of 45 MPH (urban) were eliminated from further analysis.

A Design Exception was submitted for approval in July 2005 to the FDOT Central Office requesting a reduction in the required design speed from 65 MPH, as called for in the *Plans Preparation Manual*, to 55 MPH. The design exception was denied by FDOT Central Office in October 2005. A copy of the Design Exception documentation is included in ***Appendix F***. The purpose of this exception was for the development of a narrower rural typical roadway section that would require less right-of-way along the corridor. After rejection of the design exception, all the initially developed conceptual typical sections evaluated that used a design speed less than 65 MPH in conjunction with a rural typical section were eliminated from further analysis.

Based on additional agency input, the relatively short section of Krome Avenue south of SW 272nd Street, which is classified as an Urban Principal Arterial, was given further evaluation. A suburban typical section was considered as a transition from a rural to an urban section which also minimizes the need for right-of-way acquisition. The suburban typical section was considered along the corridor within the study limits from SW 296th Street to SW 272nd Street. The reduced suburban typical section was developed using a design speed of 55 MPH.

2.3.4.2 Final Development of Typical Sections for Alternatives Analysis

After the initial evaluation of the 46 conceptual typical sections, five build alternatives were identified to move forward, in addition to the no-build, TSM and the Action Plan alternatives. The five alternatives were considered viable with respect to public support. The five proposed build alternatives use six of the previously evaluated typical sections. Alternatives 1 through 4 were developed as rural for the entire study length, and Alternative 5 includes both rural and suburban typical sections, where appropriate. These five build alternatives were developed based on the SIS criteria and the *Plans Preparation Manual* criteria using a design speed of 65 MPH for the rural typical section and 55 MPH for the suburban typical section. All build alternatives generally follow the existing horizontal alignment. All build alternatives will include a shared use path. The five build alternatives are detailed in the sections below:

Alternative 1 – Two-Lane Divided Rural Roadway

This alternative would consist of the following elements (see ***Figure 2-9***):

- One 12-foot (12’) wide travel lane in each direction.
- Forty-foot (40’) wide depressed grass median, which includes eight-foot (8’) wide inside shoulders (two-foot (2’) paved and six-foot (6’) unpaved).
- Two 12-foot (12’) wide outside shoulders (five-foot (5’) paved and seven-foot (7’) unpaved). The paved shoulder will include bicycle pavement markings.
- Ten-foot (10’) wide two-way shared use path parallel to the southbound travel lanes.
- Ten-foot (10’) wide roadside swale parallel to the southbound travel lanes.
- Twenty-two-foot (22’) wide roadside swale parallel to the northbound travel lanes.
- Eight-foot (8’) wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line.
- Eight-foot (8’) wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line.
- Design Speed of 65 MPH.
- Recoverable Terrain (Clear Zone) of 36 feet (36’) from the edge of pavement.
- Border Width of 30 feet (30’) from the outside shoulder point.
- Total typical section width of 148 feet (148’).
- This typical section will require a Design Variation for Border Width.

Alternative 2 – Two-Lane Divided Rural Roadway with Passing Zones

This alternative would consist of the following elements (see ***Figure 2-10***):

- Alternative 2 is the same as Alternative 1 with the addition of one 12-foot (12') wide passing lane.
- Total typical section width of 160 feet (160').
- This typical section calls for a minimum of one passing zone segment area throughout the length of the project between SW 168th Street and SW 136th Street. Each passing zone segment would consist of one passing lane per direction alternatively.
- This typical section will require a Design Variation for Border Width.

Alternative 3 – Four-Lane Divided Rural Roadway

This alternative would consist of the following elements (see ***Figure 2-11***):

- Two 12-foot (12') wide travel lanes in each direction.
- Fifty-four-foot (54') wide depressed grass median which includes eight-foot (8') wide inside shoulders (four-foot (4') paved and four-foot (4') unpaved).
- Two 12-foot (12') wide outside shoulders (five-foot (5') paved and seven-foot (7') unpaved). The paved shoulder will include bicycle pavement markings.
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes.
- Twelve-foot (12') wide roadside swale parallel to the southbound travel lanes.
- Twenty-four-foot (24') wide roadside swale parallel to the northbound travel lanes.
- Sixteen-foot (16') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line.
- Sixteen-foot (16') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line.
- Design Speed of 65 MPH.
- Recoverable Terrain (Clear Zone) of 36 feet (36') from the edge of pavement.
- Border Width of 40 feet (40') from the outside shoulder point.
- Total typical section width of 206 feet (206').
- This typical section is fully in compliance with the FIHS facility design criteria[4].

[4] Since the time of alternative development for this project, the FIHS sunset in 2012 and was replaced with the SIS.

Alternative 4 – Four-Lane Divided Rural Roadway

This alternative would consist of the following elements (see ***Figure 2-12***):

- Two 12-foot (12') wide travel lanes in each direction.
- Forty-foot (40') wide depressed grass median which includes eight-foot (8') wide inside shoulders (two-foot (2') paved and six-foot (6') unpaved).
- Two twelve-foot wide outside shoulders (five-foot (5') paved and seven-foot (7') unpaved). The paved shoulder will include bicycle pavement markings.
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes.
- Ten-foot (10') wide roadside swale parallel to the southbound travel lanes.
- Twenty-two foot (22') wide roadside swale parallel to the northbound travel lanes.
- Eight-foot (8') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line.
- Eight-foot (8') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line.
- Design Speed of 65 MPH.
- Recoverable Terrain (Clear Zone) of 36 feet (36') from the edge of pavement.
- Border Width of 30 (30') from the outside shoulder point.
- Total typical section width of 172 feet (172').
- This typical section will require a design variation for border width.

Alternative 5 – Four-Lane Divided Rural/Suburban Roadway

This alternative would consist of two distinct typical sections (see ***Figure 2-13a*** and ***Figure 2-13b***): a suburban section from SW 296th Street to SW 272nd Street and a rural section from SW 272nd Street to SW 136th Street.

The suburban section would consist of the following elements:

- Two 12-foot (12') wide travel lanes in each direction.
- Thirty-foot (30') wide raised median which includes 18 feet (18') of grass, curb and gutter, and four-foot (4') wide paved inside shoulders.
- Two eight-foot (8') wide outside shoulders (five-foot (5') paved and three-foot (3') unpaved). The paved shoulder will include bicycle pavement markings.
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes.
- Ten-foot (10') wide roadside swale parallel to the southbound travel lanes.
- Twenty-foot (20') wide roadside swale parallel to the northbound travel lanes.
- Seven-foot (7') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line.
- Seven-foot (7') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line.
- Design Speed of 55 MPH.
- Recoverable Terrain (Clear Zone) of 30 feet (30') from the outside edge of travel lane.
- Border Width of 35 feet (35') from the outside edge of travel lane to the right-of-way line.
- Total typical section width of 148 feet (148').

The rural section would consist of the following elements:

- Two 12-foot (12') wide travel lanes in each direction.
- Forty-foot (40') wide depressed grass median which includes eight-foot (8') wide inside shoulders (two-foot (2') paved and six-foot (6') unpaved).
- Two twelve-foot (12') wide outside shoulders (five-foot (5') paved and seven-foot (7') unpaved). The paved shoulder will include bicycle pavement markings.
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes.
- Ten-foot (10') wide roadside swale parallel to the southbound travel lanes.
- Twenty-two-foot (22') wide roadside swale parallel to the northbound travel lanes.
- Seven-foot (7') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line.
- Five-foot (5') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line.
- Design Speed of 65 MPH.
- Recoverable Terrain (Clear Zone) of 36 feet (36') from the outside edge of travel lane.
- Border Width of 27 feet (27') from the outside shoulder point to the right-of-way line.
- Total typical section width of 166 feet (166').
- This typical section will require a Design Variation for Border Width.

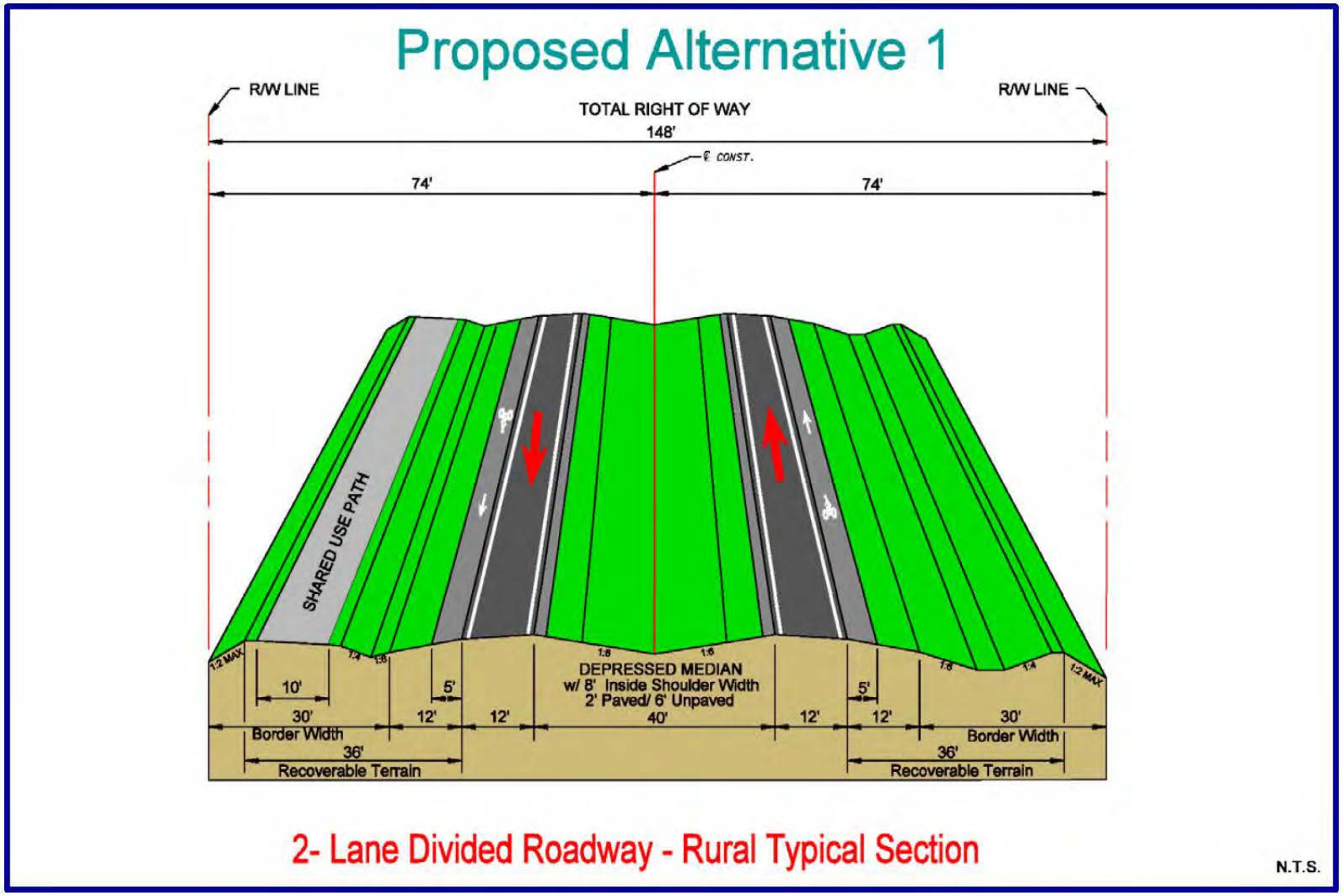


Figure 2-9 – Alternative 1 Proposed Typical Roadway Section (Rural)

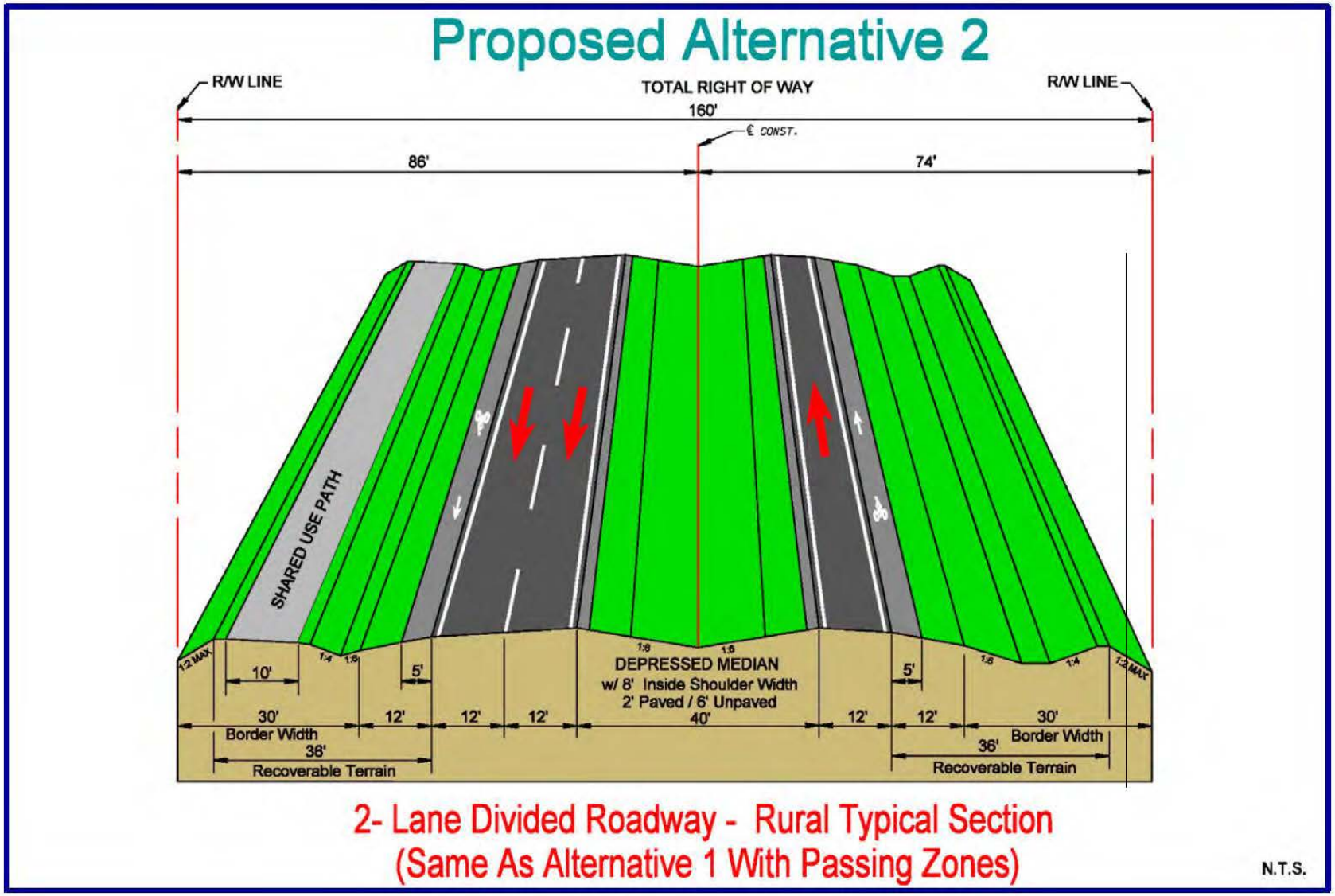


Figure 2-10 – Alternative 2 Proposed Typical Roadway Section (Rural)

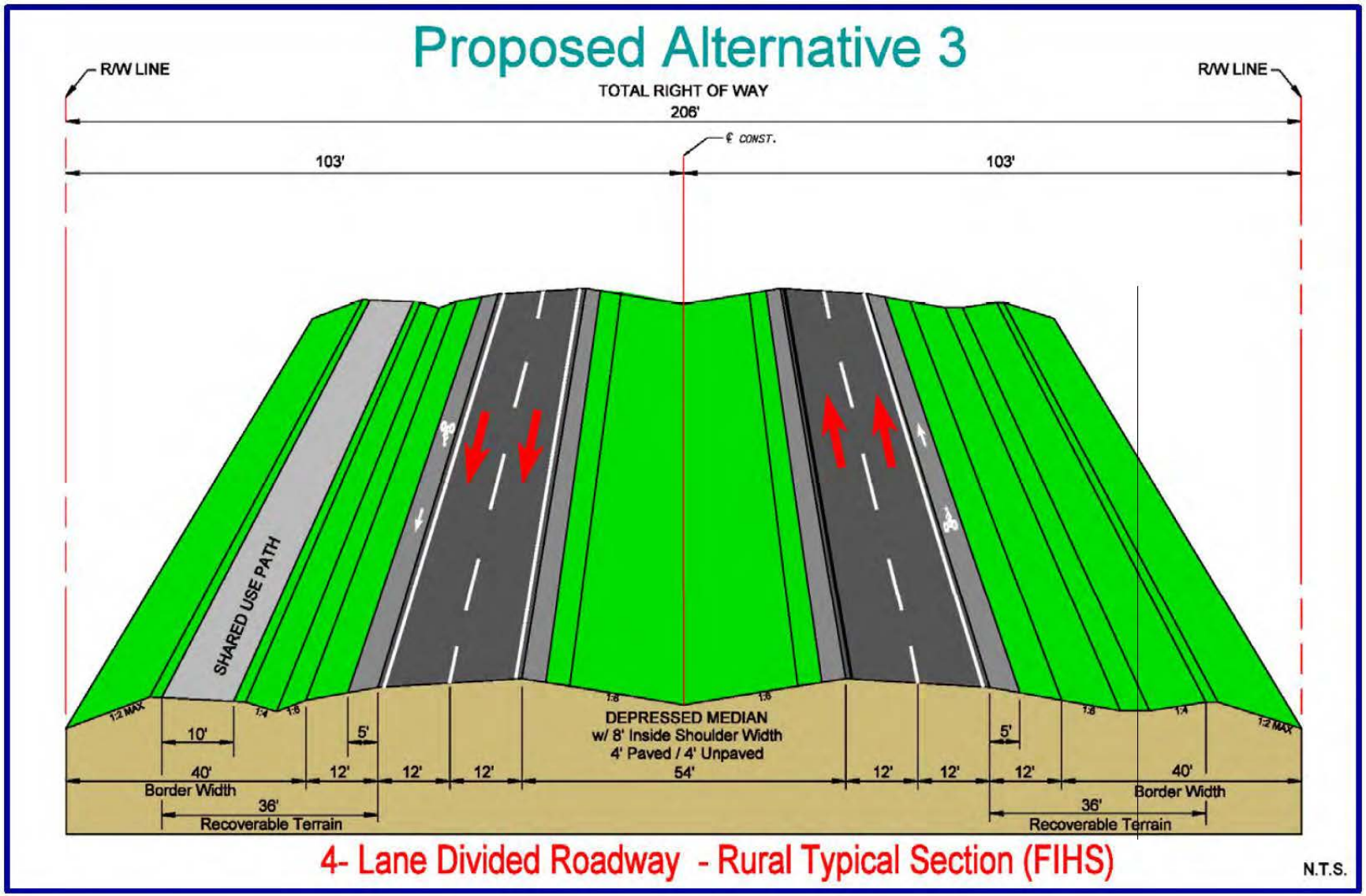


Figure 2-11 – Alternative 3 Proposed Typical Roadway Section (Rural)

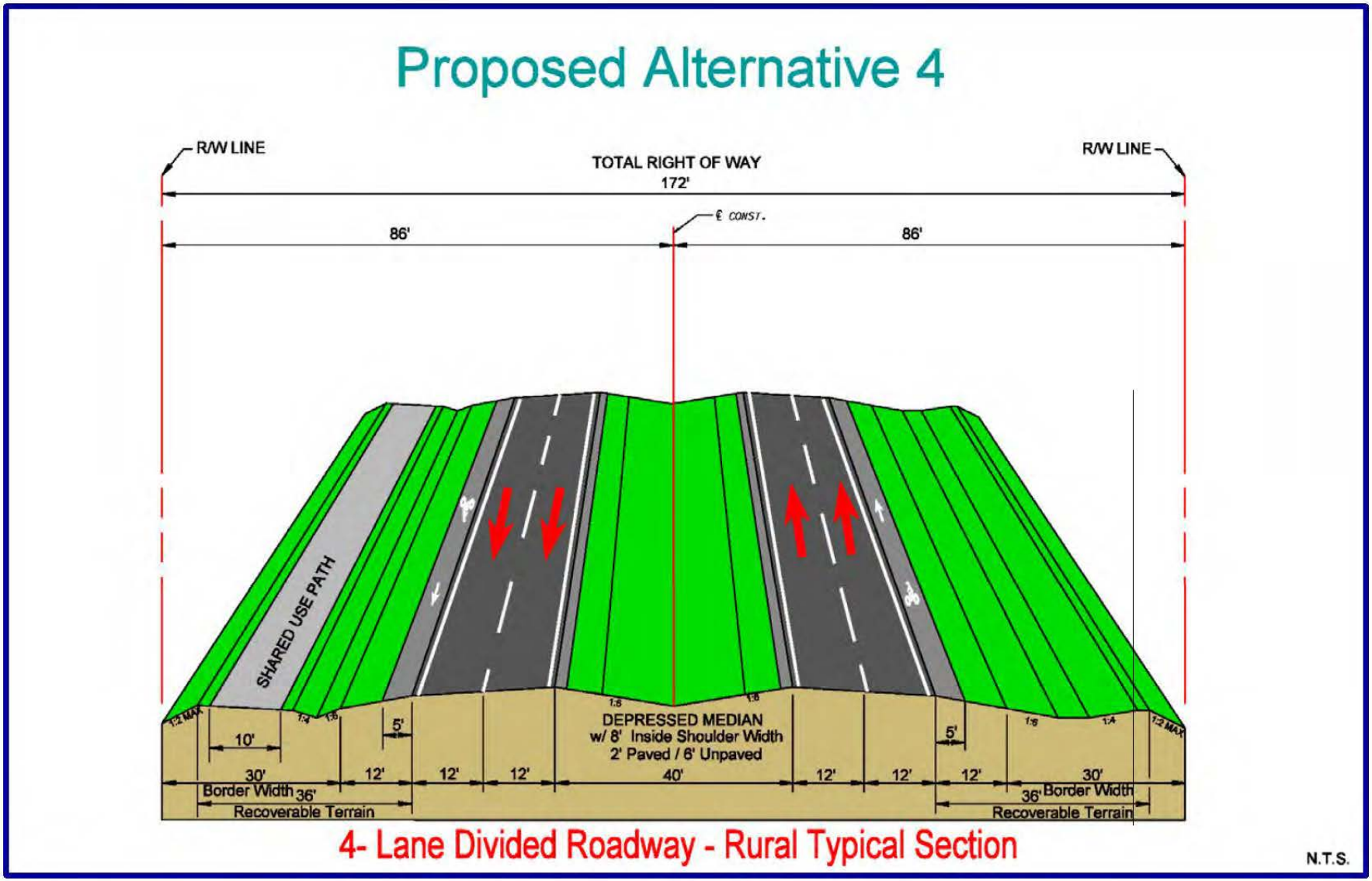


Figure 2-12 – Alternative 4 Proposed Typical Roadway Section (Rural)

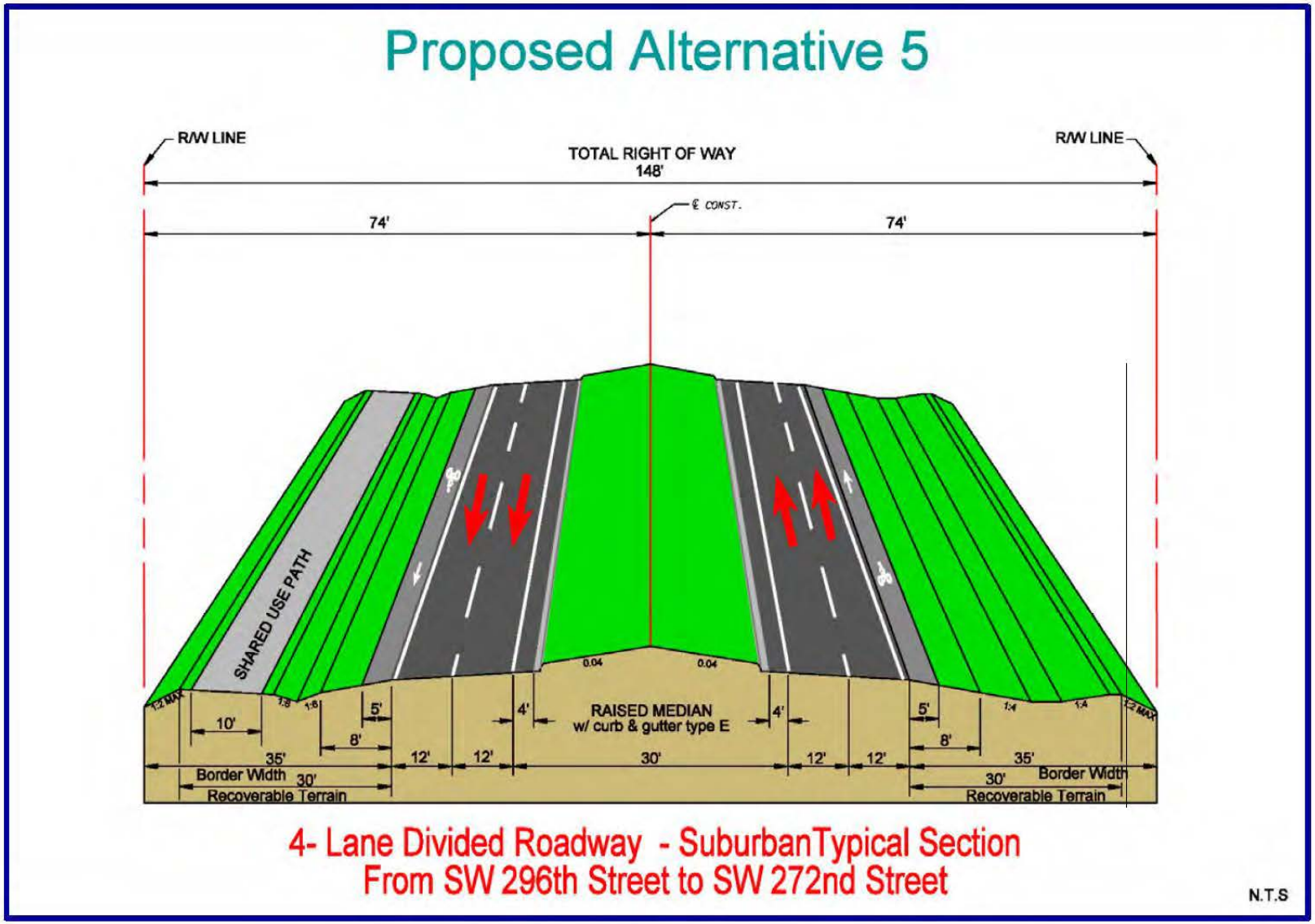


Figure 2-13a – Alternative 5 Proposed Typical Roadway Section (Suburban)

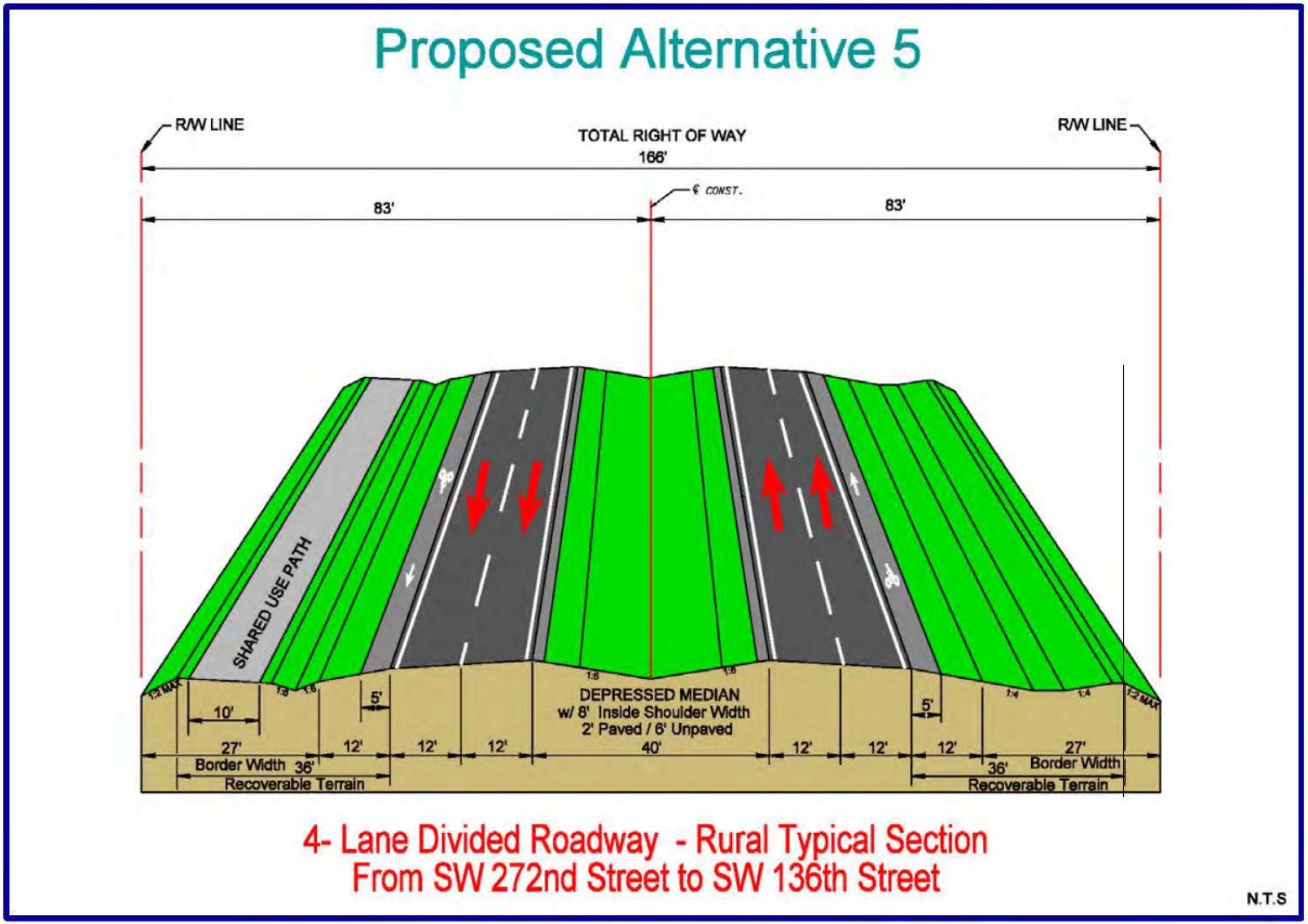


Figure 2-13b – Alternative 5 Proposed Typical Roadway Section (Rural)

2.4 STRUCTURES

2.4.1 Bridge

There is one bridge structure, built in 1969, located within the project limits. The bridge carries Krome Avenue over the SFWMD's C-103/Mowry Canal (Bridge No. 870161) and is located at along Krome Avenue milepost 4.868 between SW 280th Street/Waldin Drive and SW 278th Street. These intersections are located just south and north of this bridge.

The bridge superstructure consists of three simply supported concrete flat slab spans at 20.0 feet in length each with an overall bridge length of 60.4 feet, which bear on a substructure comprised of four pile bents. The intermediate bents are located within the C-103/Mowry Canal while the end bents/abutments are located on the side banks which have sand cement riprap for slope stabilization. The deck cross section accommodates two through lanes (one in each direction), shoulders, and 1.5 foot safety curbs. The curb to curb width is 44 feet while the outside to outside dimension is approximately 47.5 feet. The canal design section consists of a bottom elevation of (-)5.0 feet National Geodetic Vertical Datum (NGVD), a ten-foot bottom width, one to one canal side slopes, a design water surface elevation of 6.0 feet NGVD, and an optimum water surface elevation of 5.6 feet NGVD.

As part of the "National Bridge Inventory and Structural Inventory and Appraisal Program" conducted by the FHWA, FDOT is required to biannually inspect and evaluate all bridges under its jurisdiction. Both the superstructure and substructure are in very good condition. A bridge inspection was conducted on March 1, 2010, and the report reflects a rating of seven on a scale of zero to nine with zero failing and nine excellent. Based on the "FDOT Bridge Management System Bridge Inspection Report" the overall sufficiency rating is 97.7 out of 100.

The existing width of the bridge would not be able to accommodate any of the proposed typical sections. Thus, replacement of the existing bridge with a wider typical section is proposed. Due to the roadway typical section and geometric alignment of the roadway, the existing bridge is anticipated to be replaced with two side-by-side structures separated by an opening for bridge maintenance purposes. A proposed conceptual design for the replacement bridges was developed and is detailed below:

Northbound Structure:

- Two 12-foot (12') wide travel lanes.
- One six-foot (6') wide inside shoulder.
- One ten-foot (10') wide outside shoulder with bicycle pavement markings.
- Total bridge width of 43 feet 1 inch (43' 1")

Southbound Structure:

- Two 12-foot (12') wide travel lanes.
- One 12-foot (12') wide auxiliary lane. Due to the close proximity to the SW 280th Street intersection (approximately 150 feet south of structure), this bridge carries a right turn lane. The right turn lane starts at station 172+20, north of the structure, and continues across the bridge to the intersection.
- One six-foot (6') wide inside shoulder.
- One ten-foot (10') wide outside shoulder.
- One five-foot (5') wide bicycle lane to provide continuity from the striped shoulder north of the bridge through to the intersection.
- One 12-foot (12') wide two-way shared-use path parallel to the travel lanes.
- Total bridge width of 73 feet 0.5 inch (73' 0.5")

Figure 2-14 depicts the conceptual bridge typical section. During construction, the existing structure will be used in order to facilitate the maintenance of traffic.

2.4.2 Culvert

A dual-pipe reinforced concrete pipe culvert exists within the study limits. The culvert carries Krome Avenue over the SFWMD's C-102/Princeton Canal and is located at Krome Avenue milepost 10.135 north of the SW 200th Street/Quail Roost Drive intersection.

The culvert consists of two 60-inch-diameter reinforced concrete pipes extending 100 feet long under Krome Avenue perpendicular to the travel lanes. The SFWMD C-102 canal Structure 194 (S-194) is located on the west side of Krome Avenue parallel to the travel lanes. This structure is installed as a drainage control for water elevation stages in the C-102 canal to the west. It is sized to allow limited runoff to the east when the capacity is available and to provide a supplemental supply of water during drier periods.

The existing culvert length would not be able to accommodate any of the proposed typical sections. Thus, extending the existing concrete pipes or replacement is proposed at this location. The design details and calculations for the proposed culvert conditions will be developed during the final design phase of the project. For Alternatives 1, 2, 4, and 5, a vertical drainage headwall with pedestrian/bicycle railing and guardrail will be provided on the western side of the roadway at this location. Therefore, no impacts are anticipated to the S-194 structure. For Alternative 3, due to the overall width of the typical section, impacts are anticipated to the S-194 structure, most likely requiring a full replacement.

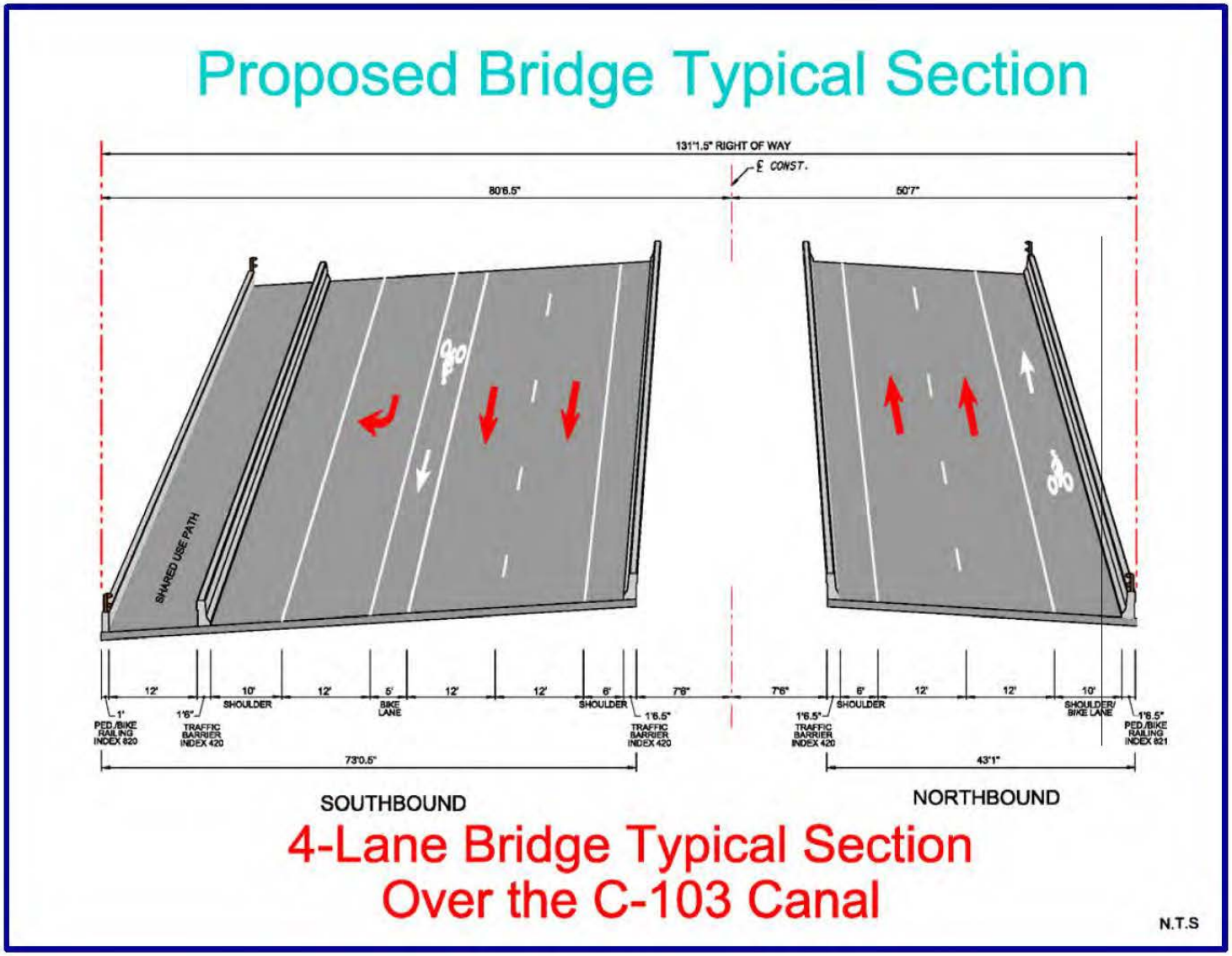


Figure 2-14 – Proposed Bridge Typical Section

2.5 ALTERNATIVES EVALUATION MATRIX

The five build alternatives described in the previous sections, along with the No-Build, TSM, and Action Plan alternatives, were evaluated to determine which best meets the purpose and need for the project. In order to evaluate the relative merits of each alternative, the project purpose, needs, and objectives, as well as a series of 41 different criteria (i.e., engineering, socioeconomic, environmental, and cost considerations) were taken into account. Subsequently, each alternative was evaluated based on its direct impact on or improvement to each criterion. Cumulative impacts for each of the environmental criterion are discussed in ***Section 4.3.18*** of this document. The resulting purpose, need, and objectives matrix is presented in ***Table 2-2*** and the alternatives evaluation matrix is presented in ***Table 2-3***.

Table 2-2 – Project Needs and Objectives Matrix

Evaluation Parameter	No Build (Existing Conditions)	TSM	Action Plan (Two-Lane)	Action Plan (Two-Lane - Modified)	Alternative 1 (Two-Lane)	Alternative 2 (Two-Lane with Passing Zone)	Alternative 3 (Four-Lane - FIHS)	Alternative 4 (Four-Lane)	Alternative 5 (Four-Lane) Rural/Suburban
Project Needs									
Project Needs within the Study Corridor									
Need - Safety	Nil	Low	Low	Low	Moderate	Moderate	High	High	High
Need - Capacity	Nil	Low	Low	Low	Low	Low	High	High	High
Need - Design Deficiencies (Roadside Clear Zone)	Nil	Nil	Low	Low	High	High	High	High	Moderate
Need - Design Deficiencies (Drainage)	Nil	Nil	High	High	High	High	High	High	High
Need - Design Deficiencies (Access Management)	Nil	Nil	Nil	Nil	Moderate	Moderate	High	High	High
Area Wide Needs									
Evacuation Routes and Emergency Services	Nil	Low	Low	Low	Moderate	Moderate	High	High	High
Consistency with Federal, State, or Local Government Authority	Nil	Nil	Nil	Nil	Nil	Nil	High	High	Moderate
Social Demand or Economic Developments	Nil	Nil	Nil	Nil	Nil	Nil	High	High	High
Modal Interrelationships	Nil	Nil	Moderate	Moderate	High	High	High	High	High
Project Objectives									
Primary Objective - Address safety deficiencies along this section of the Krome Avenue corridor	Nil	Low	Low	Low	Moderate	Moderate	High	High	High
Secondary Objective - Provide additional capacity to accommodate anticipated future area travel demand	Nil	Low	Low	Low	Low	Low	High	High	High
Secondary Objective - Address other design deficiencies along the roadway	Nil	Nil	Low	Low	Moderate	Moderate	High	High	High
Secondary Objective - Maintain the effectiveness of the corridor as an emergency evacuation route	Nil	Low	Low	Low	Moderate	Moderate	High	High	High
Secondary Objective - Provide for regional connectivity	Nil	Nil	Nil	Nil	Nil	Nil	High	High	High

Legend
Nil – Does not meet the project need/objective to any degree
Low – Meets the project need/objective to a low degree
Moderate – Meets the project need/objective to a moderate degree
High – Meets the project need/objective to a high degree

The No-Build Alternative (keeping the existing rural typical section, which varies from 35- to 200-feet wide) does not meet the purpose and need of the project. Area safety deficiencies will remain, no grass median will be provided, no provisions for pedestrians or bicyclists will be provided, existing/future congestion will not be alleviated, corridor access management will not be improved, the use of the corridor as an evacuation route will not be enhanced, the area will continue to not meet water quality and quantity criteria, and the facility will not be consistent with the Miami-Dade County CDMP. The No-Build Alternative will have the least environmental impacts, will not require any business or residential relocations, and has the lowest cost of all the alternatives.

The TSM Alternative (applying short-term safety improvements along the existing rural corridor that do not add capacity) does not meet the purpose and need of the project. Area safety deficiencies will remain, no grass median will be provided, no provisions for pedestrians or bicyclists will be provided, existing/future congestion will not be alleviated, corridor access management will not be improved, the use of the corridor as an evacuation route will not be enhanced, the area will continue to not meet water quality and quantity criteria, and the facility will not be consistent with the Miami-Dade County CDMP. The TSM Alternative will also have the least environmental impacts, will not require any business or residential relocations, and is anticipated to have the second lowest cost of all the alternatives.

The Action Plan Alternative (a two-lane undivided rural typical section with a two-foot-wide center painted buffer median, requiring 62 feet of right-of-way) does not meet the purpose and need of the project. Area safety deficiencies will remain, no grass median will be provided, no provisions for pedestrians will be provided, existing/future congestion will not be alleviated, corridor access management will not be improved, the use of the corridor as an evacuation route will not be enhanced, area water quality and quantity criteria will only marginally be met, and the facility will not be consistent with the Miami-Dade County CDMP. The Action Plan Alternative will provide a bicycle path, will have low environmental impacts, will not require any business or residential relocations, and is anticipated to have the third lowest cost of all the alternatives.

The Modified Action Plan Alternative (a two-lane undivided rural typical section with a two-foot-wide center painted buffer median, modified to comply with FDOT criteria for reconstruction of a facility, requiring 78 feet of right-of-way) does not meet the purpose and need of the project. Area safety deficiencies will remain, no grass median will be provided, no provisions for pedestrians will be provided, existing/future congestion will not be alleviated, corridor access management will not be improved, the use of the corridor as an evacuation route will not be enhanced, area water quality and quantity criteria will only marginally be met, and the facility will not be consistent with the Miami-Dade County CDMP. The Modified Action Plan Alternative will provide a bicycle path, will have low environmental impacts, will not require any business or residential relocations, and is anticipated to have the fourth lowest cost of all the alternatives.

Build Alternative 1 (a two-lane divided rural roadway with a 148-foot-wide typical section) will fulfill some of the purpose and need of the project. Area safety will be increased by the grass median that will be provided. Provisions for pedestrians and bicyclists will be included. Build Alternative 1 requires a Design Variation for Border Width. Existing/future congestion will not be alleviated. Corridor access management will be improved. The use of the corridor as an evacuation route will not be enhanced. Area water quality and quantity criteria will be considerably improved. The facility will not be consistent with the Miami-Dade County CDMP. Of the five build alternatives, Build Alternative 1 will have the least impacts to surface waters, the historic golf course, and the EEL property. Of the five build alternatives, it will require the fewest business and residential relocations. Of the five build alternatives, Build Alternative 1 has the lowest total cost ($142,635,875).

Build Alternative 2 (a two-lane divided rural roadway with passing zones with a 160-foot-wide typical section) will fulfill some of the purpose and need of the project. Area safety will be increased by the grass median that will be provided. Provisions for pedestrians and bicyclists will be included. Build Alternative 2 requires a Design Variation for Border Width. Existing/future congestion will not be alleviated. Corridor access management will be improved. The use of the corridor as an evacuation route will not be enhanced. Area water quality and quantity criteria will be considerably improved. The facility will not be consistent with the Miami-Dade County CDMP. Of the five build alternatives, Build Alternative 2 will also have the least impacts to surface waters, the historic golf course, and the EEL property. Of the five build alternatives, it will require the second fewest business relocations and the second fewest residential relocations. Of the five build alternatives, Build Alternative 2 has the second lowest total cost ($145,814,936).

Build Alternative 3 (a four-lane divided rural roadway, meeting FIHS criteria[5], with a 206-foot-wide typical section) will fulfill the purpose and need of the project. Area safety will be increased by the grass median that will be provided. Provisions for pedestrians and bicyclists will be included. Build Alternative 3 fully meets design criteria. Capacity will be increased by the additional lane in each direction. Corridor access management will be considerably improved. The use of the corridor as an evacuation route will be enhanced. Area water quality and quantity criteria will be considerably improved. The facility will be consistent with the Miami-Dade County CDMP. Of the five build alternatives, Build Alternative 3 will have the greatest impacts to surface waters, the historic golf course, and the EEL property. Additionally, Build Alternative 3 will impact two historic residential properties. Of the five Build Alternatives, it will require the greatest number of business and residential relocations and it will impact the greatest number of parcels. Of the five build alternatives, Build Alternative 3 has the highest total cost ($203,693,570).

[5] Since the time of alternative development for this project, the FIHS sunset in 2012 and was replaced with the SIS.

Build Alternative 4 (a four-lane divided rural roadway, meeting *Plans Preparation Manual* criteria, with a 172-foot-wide typical section) will fulfill the purpose and need of the project. Area safety will be increased by the grass median that will be provided. Provisions for pedestrians and bicyclists will be included. Build Alternative 4 requires a Design Variation for Border Width. Capacity will be increased by the additional lane in each direction. Corridor access management will be considerably improved. The use of the corridor as an evacuation route will be enhanced. Area water quality and quantity criteria will be considerably improved. The facility will be consistent with the Miami-Dade County CDMP. Of the five build alternatives, Build Alternative 4 will have the second greatest impacts to surface waters, the historic golf course, and the EEL property. Additionally, Build Alternative 4 will impact two historic residential properties. Of the five Build Alternatives, it will require the third fewest business relocations and the second fewest residential relocations. Of the five build alternatives, Build Alternative 4 has the second highest total cost ($166,678,509).

Build Alternative 5 (a four-lane divided roadway, with a suburban typical section requiring 148-feet of right-of-way and a rural typical section requiring 166-feet of right-of-way) will fulfill the purpose and need of the project. Area safety will be increased by the grass median that will be provided. Provisions for pedestrians and bicyclists will be included. Build Alternative 5 requires a Design Variation for Border Width in the rural typical section area. Capacity will be increased by the additional lane in each direction. Corridor access management will be considerably improved. The use of the corridor as an evacuation route will be enhanced. Area water quality and quantity criteria will be considerably improved. The facility will be consistent with the Miami-Dade County CDMP. Of the five build alternatives, Build Alternative 5 will have the third greatest impacts to surface waters, the historic golf course, and the EEL property. Of the five Build Alternatives, it will require the second fewest business relocations and the second fewest residential relocations. Of the five build alternatives, Build Alternative 5 has the third highest total cost ($158,804,525).

Table 2-3 – Alternatives Evaluation Matrix

Evaluation Parameters		No Build	TSM	Action Plan	Action Plan	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		Existing Typical Section		(Two-Lane)	(Two-Lane - Modified)	(Two-Lane)	(Two-Lane with Passing Zone)	(Four-Lane) (Florida Intrastate Highway System)	(Four-Lane)	(Four-Lane) Rural/Suburban Typical Section
ENGINEERING	**Median Width**	None	None	2' Painted Buffer	2' Painted Buffer	40' Grass Depressed	40' Grass Depressed	54' Grass Depressed	40' Grass Depressed	Rural: 40' Grass Depressed/Suburban: 30' Raised with Grass and Curb and Gutter
	Lane Width	12'	12'	12'	12'	12'	12'	12'	12'	12'
	Pedestrian Provisions	None	None	None	None	10' Shared Use Path	10' Shared Use Path	10' Shared Use Path	10' Shared Use Path	10' Shared Use Path
	Bicycle Provisions	None	None	8' Bike Path	8' Bike Path	10' Shared Use Path 5' Paved Shoulder	10' Shared Use Path 5' Paved Shoulder	10' Shared Use Path 5' Paved Shoulder	10' Shared Use Path 5' Paved Shoulder	10' Shared Use Path 5' Paved Shoulder
	Outside Shoulder Width (Paved Width)	Varies 0' to 5' (0 to 5')	12' (5')	8' (5')	8' (5')	12' (5')	12' (5')	12' (5')	12' (5')	Rural: 12' (5') Suburban: 8' (5')
	Inside Shoulder Width (Paved Width)	None	None	None	None	8' (2')	8' (2')	8' (4')	8' (2')	Rural: 8' (2') Suburban: 4' paved
	Border Width	Not defined due to right-of-way variations	Not defined due to right-of-way variations	Reconstruction criteria requires 8' minimum - not defined	Reconstruction criteria requires 8' minimum - provided	New construction criteria requires 40'. Proposed 30' - requires Design Variation	New construction criteria requires 40'. Proposed 30' - requires Design Variation	40' provided, meets new construction criteria	New construction criteria requires 40'. Proposed 30' - requires Design Variation	New construction criteria requires 40' for rural typical section Proposed 27' - requires Design Variation
	Total Right-of-Way	Maintain existing (35'-200')	Maintain existing (35'-200')	62'	78'	148'	160'	206'	172'	Rural: 166 ' Suburban: 148'
	Typical Section & Geometric Issues	Inadequate shoulder width. Insufficient storage lanes. Lack of turning lanes. Non-standard Clear Zone and Border Width. No median separation. No passing lanes.	Non-Standard Clear Zone and Border Width. No median separation; does have two-foot center painted buffer. No passing lanes.	Sub-standard shoulder width .No median separation; does have two-foot center painted buffer. No passing lanes.	Sub-standard shoulder width. No median separation; does have two-foot center painted buffer. No passing lanes.	No passing lanes. Requires Design Variation for Border Width.	Limited passing zones. Requires Design Variation for Border Width.	None, meets all criteria.	Requires Design Variation for Border Width.	Rural: requires Design Variation for Border Width. Suburban: none, meets all criteria.
	Safety	No improvements. Existing safety issues will continue.	Limited improvements (shoulders, turn lanes, storage lanes)	Limited improvements (shoulders, turn lanes, storage lanes, two-foot center painted buffer)	Limited improvements (shoulders, turn lanes, storage lanes, two-foot center painted buffer, provides 8' minimum Border Width)	Moderate improvements since it does not accommodate passing maneuvers. Meets all other safety standards.	Moderate improvements since it accommodates passing maneuvers only in one area. Meets all other safety standards.	Considerable improvements. SIS standard width median. More capacity. Passing maneuvers accommodated throughout the project corridor.	Considerable improvements. *Plans Preparation Manual* standard width median. More capacity. Passing maneuvers accommodated throughout the project corridor.	Considerable improvements. *Plans Preparation Manual* standard width median. More capacity. Passing maneuvers accommodated throughout the project corridor.
	Traffic Operations	No improvements.	Provides adequate turn and storage lanes. Opposing traffic friction remains.	Provides adequate turn and storage lanes. Opposing traffic friction remains.	Provides adequate turn and storage lanes. Opposing traffic friction remains.	Provides adequate turn and storage lanes. Eliminates opposing traffic friction. Precludes passing maneuvers.	Provides adequate turn and storage lanes. Eliminates opposing traffic friction. Provides limited passing opportunities.	Provides adequate turn and storage lanes. Eliminates opposing traffic friction. Provides passing opportunities throughout the project corridor.	Provides adequate turn and storage lanes. Eliminates opposing traffic friction. Provides passing opportunities throughout the project corridor.	Provides adequate turn and storage lanes. Eliminates opposing traffic friction. Provides passing opportunities throughout the project corridor.

Table 2-3 – Alternatives Evaluation Matrix

Evaluation Parameters		No Build	TSM	Action Plan	Action Plan	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		Existing Typical Section		(Two-Lane)	(Two-Lane - Modified)	(Two-Lane)	(Two-Lane with Passing Zone)	(Four-Lane) (Florida Intrastate Highway System)	(Four-Lane)	(Four-Lane) Rural/Suburban Typical Section
ENGINEERING	**Capacity**	No improvements and latent demand will not be served.	Minimal improvement due to turn lane and shoulder implementation.	Minimal improvement due to turn lane and shoulder implementation.	Minimal improvement due to turn lane and shoulder implementation.	Minimal improvement due to turn lane and shoulder implementation.	Minimal improvement due to turn lane and shoulder implementation.	Considerable improvements due to the additional through lanes in each direction.	Considerable improvements due to the additional through lanes in each direction.	Considerable improvements due to the additional through lanes in each direction.
	Level of Service (2040 Overall)[6]	LOS "F"	LOS "F"	LOS "F"	LOS "F"	LOS "E"	LOS "E"	LOS "D"	LOS "D"	LOS "D"
	Access Management	No improvements.	Limited improvements, consolidate driveway connections whenever possible.	Limited improvements, consolidate driveway connections whenever possible.	Limited improvements, consolidate driveway connections whenever possible.	Considerable improvements with implementation of median and consolidation of driveways.	Considerable improvements with implementation of median and consolidation of driveways.	Considerable improvements with implementation of median and consolidation of driveways.	Considerable improvements with implementation of median and consolidation of driveways.	Considerable improvements with implementation of median and consolidation of driveways.
	Law Enforcement	Impeded by: No Shoulders, Traffic Congestion, No U-turn Access, and No Passing Zones.	Impeded by: Traffic Congestion, No U-turn Access, and No Passing Zones.	Impeded by: Traffic Congestion, No U-turn Access, and No Passing Zones.	Impeded by: Traffic Congestion, No U-turn Access, and No Passing Zones.	Impeded by: Traffic Congestion and No Passing Zones.	Impeded by: Traffic Congestion and Limited Passing Opportunities.	Unimpeded.	Unimpeded.	Unimpeded.
	Hurricane Evacuation	Hindered by: No Shoulders, Traffic Congestion, and No Passing Zones.	Hindered by: Traffic Congestion and No Passing Zones.	Hindered by: Traffic Congestion and No Passing Zones.	Hindered by: Traffic Congestion and No Passing Zones.	Hindered by: Traffic Congestion and No Passing Zones.	Hindered by: Traffic Congestion and Limited Passing Opportunities.	Improved by additional northbound lane.	Improved by additional northbound lane.	Improved by additional northbound lane.
	Drainage System	No improvements. Will continue to not meet water quality or quantity criteria.	No systemwide improvements. Will continue to not meet water quality or quantity criteria.	Minimal improvements with swales (some locations).	Minimal improvements with swales (some locations).	Considerable improvements with swales and French drains.	Considerable improvements with swales and French drains.	Considerable improvements with swales and French drains. Will impact C-102 Structure S-194.	Considerable improvements with swales and French drains.	Considerable improvements with swales and French drains.
	Multimodal Accommodations	None	None	Bike Path Equestrian Path	Bike Path Equestrian Path	Shared Use Path 5' Paved Shoulder	Shared Use Path 5' Paved Shoulder	Shared Use Path 5' Paved Shoulder	Shared Use Path 5' Paved Shoulder	Shared Use Path 5' Paved Shoulder
	Utility Impacts	None	None	Some relocation of power lines required.	Some relocation of power lines required.	Will require relocation of power lines. May provide opportunity for implementation of Florida Power and Light policy regarding underground placement.	Will require relocation of power lines. May provide opportunity for implementation of Florida Power and Light policy regarding underground placement.	Will require relocation of power lines. May provide opportunity for implementation of Florida Power and Light policy regarding underground placement.	Will require relocation of power lines. May provide opportunity for implementation of Florida Power and Light policy regarding underground placement.	Will require relocation of power lines. May provide opportunity for implementation of Florida Power and Light policy regarding underground placement.
	Maintenance of Traffic During Construction	N/A	Minimal temporary impacts at Maintenance of Traffic phase changes.	Moderate temporary impacts at Maintenance of Traffic phase changes.	Moderate temporary impacts at Maintenance of Traffic phase changes.	Substantial temporary impacts at Maintenance of Traffic phase changes.	Substantial temporary impacts at Maintenance of Traffic phase changes.	Substantial temporary impacts at Maintenance of Traffic phase changes.	Substantial temporary impacts at Maintenance of Traffic phase changes.	Substantial temporary impacts at Maintenance of Traffic phase changes.
	Roadway Maintenance	High due to continued deterioration of existing pavement condition	High due to continued deterioration of existing pavement condition	Medium due to unimproved roadway base and subbase	Medium due to unimproved roadway base and subbase	Low due to newly constructed roadway	Low due to newly constructed roadway	Low due to newly constructed roadway	Low due to newly constructed roadway	Low due to newly constructed roadway

[6] See ***Section 8.5.6*** of the PER for details and discussion of latent demand.

Table 2-3 – Alternatives Evaluation Matrix

	Evaluation Parameters	No Build	TSM	Action Plan	Action Plan	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		Existing Typical Section		(Two-Lane)	(Two-Lane - Modified)	(Two-Lane)	(Two-Lane with Passing Zone)	(Four-Lane) (Florida Intrastate Highway System)	(Four-Lane)	(Four-Lane) Rural/Suburban Typical Section
ENVIRONMENTAL	**Wetland Impacts**	None	None	None	None	None	None	None	None	None
	Water Quality	No treatment	No treatment	Some improvements due to limited swales	Some improvements due to limited swales	Considerable improvements are provided with new stormwater system	Considerable improvements are provided with new stormwater system	Considerable improvements are provided with new stormwater system	Considerable improvements are provided with new stormwater system	Considerable improvements are provided with new stormwater system
	Surface Water Impacts (Canals)	None	None	None	Unavailable	0.14 acres of impacts due to bridge widening over canals	0.14 acres of impacts due to bridge widening over canals	0.34 acres of impacts due to bridge widening over canals	0.21 acres of impacts due to bridge widening over canals	0.15 acres of impacts due to bridge widening over canals
	Contamination	None	None	High Risk - 4 sites Medium Risk - 7 sites Low Risk -1 sites	High Risk - 4 sites Medium Risk - 7 sites Low Risk -1 sites	High Risk - 4 sites Medium Risk - 7 sites Low Risk -1 sites	High Risk - 4 sites Medium Risk - 7 sites Low Risk -1 sites	High Risk - 4 sites Medium Risk - 7 sites Low Risk -1 sites	High Risk - 4 sites Medium Risk - 7 sites Low Risk -1 sites	High Risk - 4 sites Medium Risk - 7 sites Low Risk -1 sites
	Air Quality	Passed CO Florida 2012 screening analysis & county is designated as in attainment	Passed CO Florida 2012 screening analysis & county is designated as in attainment	Passed CO Florida 2012 screening analysis & county is designated as in attainment	Passed CO Florida 2012 screening analysis & county is designated as in attainment	Passed CO Florida 2012 screening analysis & county is designated as in attainment	Passed CO Florida 2012 screening analysis & county is designated as in attainment	Passed CO Florida 2012 screening analysis & county is designated as in attainment	Passed CO Florida 2012 screening analysis & county is designated as in attainment	Passed CO Florida 2012 screening analysis & county is designated as in attainment
	Noise Impacts	52.1 to 67.8 dB(A)	Traffic noise impacts are not anticipated to increase above existing noise range.	Traffic noise impacts are not anticipated to increase above existing noise range.	Traffic noise impacts are not anticipated to increase above existing noise range.	53.9 to 67.8 dB(A)	53.9 to 67.8 dB(A)	56.5 to 72.2 dB(A)	57.1 to 71.8 dB(A)	57.3 to 71.7 dB(A)
	Section 4(f)	None	None	None	None	*De minimis* finding for two Section 4(f) resources	*De minimis* finding for two Section 4(f) resources	*De minimis* finding for three Section 4(f) resources; individual evaluation for one Section 4(f) resource	*De minimis* finding for two Section 4(f) resources	*De minimis* finding for two Section 4(f) resources
	Section 106 Impacts	None	None	None	None	"*No adverse effect* " for four National Register of Historic Places (NRHP)-eligible resources	"*No adverse effect* " for four NRHP-eligible resources	"*No adverse effect* " for three NRHP-eligible resources; "*Adverse effect*" for one NRHP-eligible resource	"*No adverse effect* " for four NRHP-eligible resources	"*No adverse effect* " for four NRHP-eligible resources
	Environmentally Endangered Lands Impacts	None	None	None	None	EEL Property – 0.84 Acres	EEL Property – 0.84 Acres	EEL Property – 1.27 Acres	EEL Property – 1.02 Acres	EEL Property – 0.97 Acres
	Threatened and Endangered Species Impacts	None	None	No direct impacts - temporary impacts to foraging only during construction	No direct impacts - temporary impacts to foraging only during construction	No direct impacts to wildlife - temporary impacts to foraging only during construction. Direct impacts to state-listed plant species in EEL property.	No direct impacts to wildlife - temporary impacts to foraging only during construction. Direct impacts to state-listed plant species in EEL property.	No direct impacts to wildlife - temporary impacts to foraging only during construction. Direct impacts to state-listed plant species in EEL property.	No direct impacts to wildlife - temporary impacts to foraging only during construction. Direct impacts to state-listed plant species in EEL property.	No direct impacts to wildlife - temporary impacts to foraging only during construction. Direct impacts to state-listed plant species in EEL property.
	Farmlands Impacts	None	None	Unavailable	Unavailable	26.42 Acres	29.02 Acres	60.41 Acres	39.50 Acres	27.89 Acres

Table 2-3 – Alternatives Evaluation Matrix

	Evaluation Parameters	No Build	TSM	Action Plan	Action Plan	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		Existing Typical Section		(Two-Lane)	(Two-Lane - Modified)	(Two-Lane)	(Two-Lane with Passing Zone)	(Four-Lane) (Florida Intrastate Highway System)	(Four-Lane)	(Four-Lane) Rural/Suburban Typical Section
SOCIO-ECONOMIC	**Cultural Facilities and Community Services**	None	None	Minimal impacts to parcel owned by one church due to right-of-way acquisition. No impacts to buildings or facilities.	Minimal impacts to parcel owned by one church due to right-of-way acquisition. No impacts to buildings or facilities.	Minimal impacts to parcels owned by two churches due to right-of-way acquisition. No impacts to buildings or facilities.	Minimal impacts to parcels owned by two churches due to right-of-way acquisition. No impacts to buildings or facilities.	Minimal impacts to parcels owned by three churches and one school due to right-of-way acquisition. No impacts to buildings or facilities.	Minimal impacts to parcels owned by two churches due to right-of-way acquisition. No impacts to buildings or facilities.	Minimal impacts to parcels owned by two churches due to right-of-way acquisition. No impacts to buildings or facilities.
	Compatibility with Agricultural Practices and Rural Character	Compatible. Rural typical section remains "as is"	Compatible. Rural typical section remains "as is"	Compatible. Rural typical section is proposed	Compatible. Rural typical section is proposed	Compatible. Rural typical section is proposed	Compatible. Rural typical section is proposed	Compatible. Rural typical section is proposed	Compatible. Rural typical section is proposed	Compatible. Rural typical section is proposed from SW 272nd Street to SW 136th Street. Suburban typical section has rural features on the outside.
	Transportation Plans Compatibility	Not compatible with the Miami-Dade County CDMP	Not compatible with the Miami-Dade County CDMP	Not compatible with the Miami-Dade County CDMP	Not compatible with the Miami-Dade County CDMP	Not compatible with the Miami-Dade County CDMP	Not compatible with the Miami-Dade County CDMP	Compatible with the Miami-Dade County CDMP	Compatible with the Miami-Dade County CDMP	Compatible with the Miami-Dade County CDMP
	Indirect Effects[7]	None	None	None, no additional roadway capacity being provided	None, no additional roadway capacity being provided	None, no additional roadway capacity being provided	None, no additional roadway capacity being provided	The 2002 CDMP amendments are designed to limit any increased indirect effects from roadway widening.	The 2002 CDMP amendments are designed to limit any increased indirect effects from roadway widening.	The 2002 CDMP amendments are designed to limit any increased indirect effects from roadway widening.
	Landscaping/ Aesthetics	None	None	None	None	Increased landscaping opportunities provided. No aesthetic impacts.	Increased landscaping opportunities provided. No aesthetic impacts.	Increased landscaping opportunities provided. Aesthetic impact from removal of mango trees in front of NRHP-eligible residence.	Increased landscaping opportunities provided. No aesthetic impacts.	Increased landscaping opportunities provided. No aesthetic impacts.
	Business and Residential Relocations	None	None	Unavailable	Unavailable	Residential - 4 Business - 3 Personal Property - 4	Residential - 5 Business - 4 Personal Property - 2	Residential - 10 Business - 6 Personal Property - 2	Residential - 5 Business - 5 Personal Property - 1	Residential - 5 Business - 4 Personal Property - 2
COST	**Construction**	$0	Unavailable	Unavailable	Unavailable	$61,628,904	$63,338,797	$75,726,746	$71,241,546	$70,658,711
	Right-of-Way	$0	Unavailable	Unavailable	Unavailable	$62,518,300	$63,474,500	$105,248,800	$74,064,500	$66,948,200
	Engineering (15%) & CEI (15%)	$0	Unavailable	Unavailable	Unavailable	$18,488,671	$19,001,639	$22,718,024	$21,372,463	$21,197,614
	Total	$0	Unavailable	Unavailable	Unavailable	$142,635,875	$145,814,936	$203,693,570	$166,678,509	$158,804,525

[7] Refer to ***Section 4.3.17*** for additional details of the indirect effects discussion for this project.

2.6 SELECTION OF THE PREFERRED ALTERNATIVE

The preferred alternative for the Krome Avenue corridor is Alternative 5 (four-lane divided) with the "Minimization Treatment" applied at the location of the EEL Owaissa Bauer Pineland Preserve Addition No. 1 site (see ***Figure 2-15***). This preferred alternative was based on the evaluation matrix and the analysis of several key evaluation parameters including: engineering considerations, environmental impacts, socio-economic impacts, and cost. Alternative 5 will meet the purpose and needs of the project and both alleviate the safety deficiencies and add the needed capacity to this roadway in Miami-Dade County. This alternative is the most prudent compared with the TSM Alternative, Action Plan Alternative, and build alternatives 1 through 4 for the following reasons:

1. The TSM Alternative does not address the needed safety between intersections, increase roadway capacity, improve access management, or provide adequate drainage. Therefore, further consideration of the TSM Alternative was eliminated from the analysis.

2. The Action Plan Alternatives, both "original" and "modified," do not fulfill the purpose and needs of the project. Safety deficiencies will remain, future congestion will not be alleviated, and Krome Avenue will become even less effective as an evacuation route. Design deficiencies including median separation and access management requirements that will limit conflict points and enhance safety will continue to be unmet. The Action Plan Alternatives are not consistent with area growth management and transportation plans, which designate Krome Avenue as a four-lane roadway within the study limits. They will not accommodate the social and economic demands of a growing future Miami-Dade County. Therefore, both the "original" and the "modified" Action Plan Alternatives were eliminated from further consideration.

3. Both of the two-lane divided alternatives (Alternative 1 and Alternative 2) do not fulfill the purpose and needs of the project. Safety deficiencies will remain due to lack of continuous lane for passing around slow moving vehicles. Under these alternatives, in the future, roadway congestion during peak hours will increase. The congestion in the area may cause additional impacts to the roadway including excessive delay in travel time, large reduction of average travel speeds, and higher crash rates. In addition, Krome Avenue will become even less effective as an evacuation route for the area. Furthermore, both alternatives will not be consistent with area growth management and transportation plans, which designate Krome Avenue as a four-lane roadway within the study limits and will not accommodate the social and economic demands of a growing future Miami-Dade County. Therefore, Alternative 1 and Alternative 2 were eliminated from further consideration.

4. All of the four-lane divided alternatives (Alternative 3, Alternative 4, and Alternative 5) will provide enhanced safety, capacity, median separation (which is anticipated to reduce head-on and angle crashes between the intersections by limiting the conflict points along the corridor within the study limits) and drainage. Four-lane divided alternatives will also provide a second northbound lane which will enhance the facility as an evacuation route. In addition, these alternatives are consistent with the area growth management and transportation plans, and will accommodate future social and economic demands. However, the FHWA has determined that Alternative 3 would cause an adverse impact [under both Section 106 and Section 4(f)] to the Howard Schaff Residence/27450 SW 177th Avenue (8DA9674) due to removal of the large mango trees in front of the residence, while Alternative 4 and Alternative 5 will not require removal of the mango trees; therefore Alternative 3 was eliminated from further consideration.

5. The determining factor between Alternative 4 and Alternative 5 is the required right-of-way width for implementation of each alternative. Reducing the required right-of-way footprint will reduce impacts to cultural and historical resources, surface waters, environmentally endangered lands, businesses, farmlands, noise, and cost. Therefore, Alternative 5, with the least right-of-way width, is the preferred alternative.

6. Additional engineering analysis of the Preferred Alternative 5 resulted in a "Minimization Treatment" that further reduces the potential impacts to the EEL Owaissa Bauer Pineland Preserve Addition No. 1 site to the greatest extent practicable while maintaining safe engineering practices (i.e., roadway geometry, etc.) (see ***Figure 2-15***). The proposed minimization treatment reduces the typical section width by 18 feet by using a guardrail for approximately 750 feet in the immediate area of the EEL parcel, reducing the outside shoulder and border width and eliminating the drainage swale in the northbound direction of Krome Avenue. The Preferred Alternative 5 with minimization treatment will require a design variation for border width.

As a result of the Public Hearing, public input, environmental studies, interagency coordination, and a detailed comparative analysis of viable alternatives, the alternative recommended for Location Design Concept Acceptance is Alternative 5 (four-lane divided) with the "Minimization Treatment" applied at the location of the EEL Owaissa Bauer Pineland Preserve Addition No. 1 site. The preferred alternative will widen SR 997/Krome Avenue/SW 177th Avenue from two lanes to four lanes for a distance of approximately ten miles, from SW 296th Street to SW 136th Street, and will replace the existing bridge over the C-103/Mowry Canal (Bridge No. 870161). The preferred alternative will meet the purpose and needs of the project and both alleviate the safety deficiencies and add the needed capacity to this roadway in Miami-Dade County. The preferred alternative is the FDOT-recommended alternative (Alternative 5 with minimization treatment) which was presented at the project Public Hearing, held on December 11, 2013.

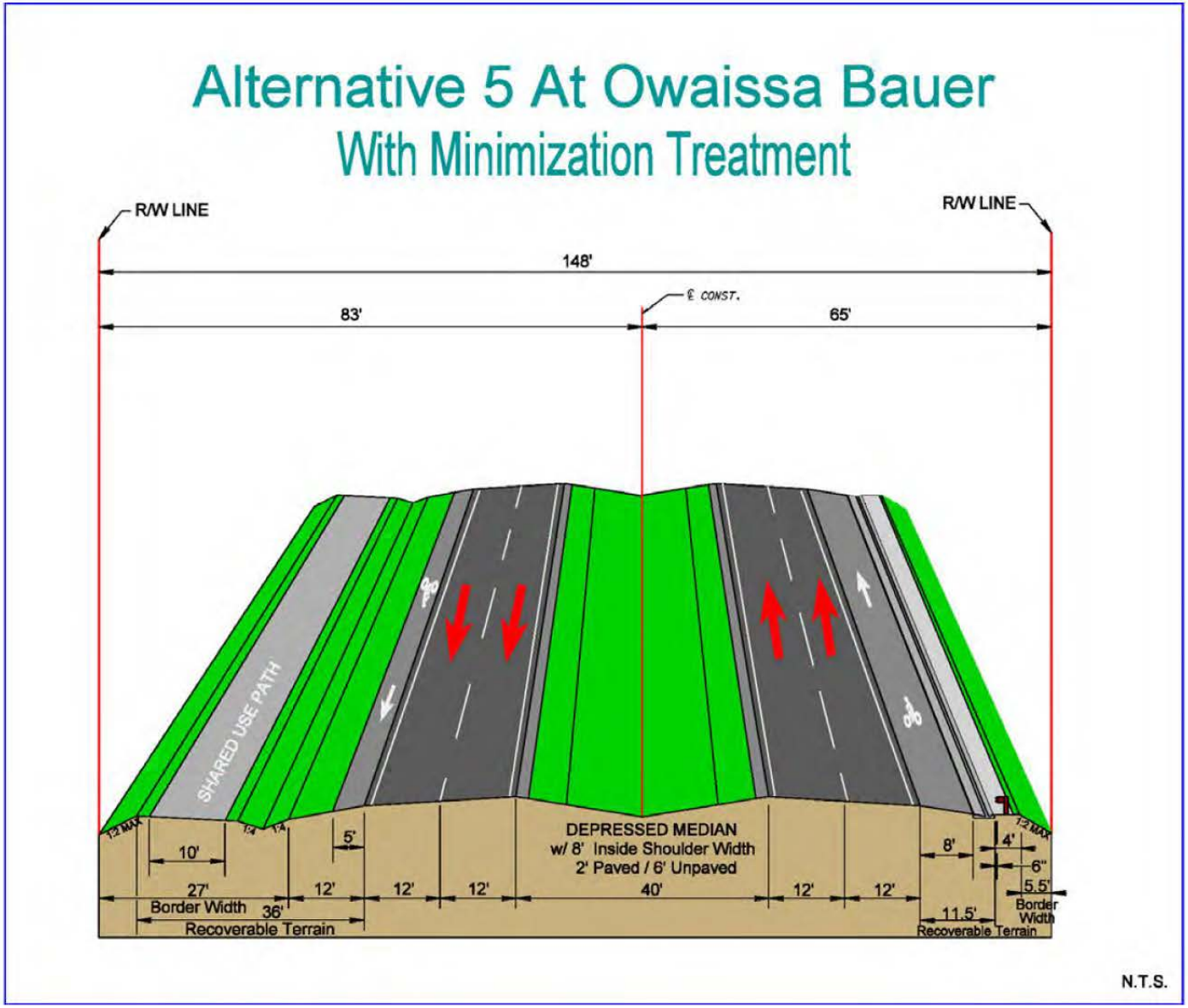


Figure 2-15 – Alternative 5 at Owaissa Bauer with Minimization Treatment

3.0 AFFECTED ENVIRONMENT

3.1 SOCIAL AND ECONOMIC

3.1.1 Population, Community Growth, and Economic Characteristics

At the beginning of the 21st century, Florida was one of the smallest states in the country with a population of approximately one-half million. By the end of the century, the state's population had grown to 15,982,378 million people. With growth rates exceeding 20% per decade, the state had become the fourth largest in the nation. Florida's growth continued during the 1990s and 2000s, trailing only California and Texas. Despite the economic downturn of the late 2000s, the state's rapid growth has continued. According to the American Community Survey (2011) the State of Florida is the ninth fastest growing state, adding 256,000 new residents between April 1, 2010 and July 1, 2011, ranking the state third behind Texas and California in added total population.

Miami-Dade County has long been the largest and one of the fastest growing counties in Florida, a trend that started in 1896 when the Flagler East Coast Railroad reached the city. Population growth accelerated after the end World War II and continued through the new millennium. According to the 2010 United States (U.S.) Census, Miami-Dade County's population was 2,496,435, which was a 10.8% increase over the 2000 population of 2,253,779. Per the EAR projected population for 2030 is 3,178,164, which represents a 27 percent increase over the 2010 population. The population growth in Miami-Dade County can be attributed to tourism-related activities, access to international markets, a second home market, and the overall economic growth of southeast Florida.

Data from the 2010 U.S. Census was utilized to assess the social and economic characteristics of the areas adjacent to the project. The smallest census geographic entity is a census block which generally encompasses a small geographic area. Readily available and geospatially accessible data for census blocks is generally limited to total population and a few demographic categories including age, gender, race, ethnicity, number of households and housing data. Additional information is available for Census Tracts, including school enrollment, and house values. The data utilized in this report originated from data collected by the U.S. Census Bureau and available from the agency's website, the Florida Geographic Data Library or Miami-Dade County. Census block data was obtained for census blocks wholly or partially located within 0.25-mile from the project corridor. Census tract data was obtained from those tracts that intersect the project corridor. For the purposes for this analysis, the project area has been spatially defined as those areas within the census blocks which are wholly or partially located within 0.25-mile from the project corridor.

Between 2000 and 2010 the population within the project area grew at a 20.64 percent rate and was higher than that of the census tracts, the county, and the state. The areas within a quarter mile from the corridor include areas of unincorporated Miami-Dade County as well as the City of Homestead which have seen significant growth and development during the last decade. Although much of the area is outside of the UDB, continued growth is anticipated under existing

zoning and land use in order to accommodate the influx of population into the county, most of which has already been developed.

According to the 2010 U.S. Census Bureau, the racial breakdown of Miami-Dade County is as follows: White – 73.8 percent (including Hispanic or Latino), Black or African American – 18.9 percent, Asian – 1.5 percent, American Indian and Alaska Native – 0.2 percent, Native Hawaiian and other Pacific Islander – less than 0.1 percent, Other – 3.2 percent, and Two or More Races – 2.4 percent. Miami-Dade is a minority majority county, where ethnic or racial majorities account for more than fifty percent of the population. According to the 2010 U.S. Census, approximately 65 percent of the population in the county identifies itself as Hispanic or Latino, and 18.9 percent as Black or African American (non-Hispanic). The project area has a similar proportion of ethnic minority populations (60%) as Miami-Dade County (65%). As previously mentioned, the ethnic minority population in Miami-Dade is substantially greater than the state's (14.2%). Ethnic minorities within the census tracts that intersect the corridor are higher than those of the county, at 83 percent.

The median age is defined as the age that divides a population into two numerically equal groups; that is, half the people are younger than this age and half are older. It is widely accepted as a single index that summarizes the age distribution of a population. Median age for the population within the project area is 44.1, and slightly higher than the overall median age for Miami-Dade County (38.2), and the state of Florida (40.7). However, the percentage of population older than 65 is lower (13.2%) than that of the County (14.1%) and the State (17.3%).

According to the 2010 U.S. Census Bureau, Miami-Dade County has a median household income of $43,605. The project area has a median household income of $64,453, which is substantially higher than the state and county median household income. The project area has about ten percent of the population living below the poverty level. The project area has a lower proportion of low-income populations than Miami-Dade County and the state of Florida (13.8 percent). ***Table 3-1***, below, summarizes the data sets collected.

Table 3-1 – Population Characteristics for the State of Florida, Miami-Dade County, and the Project Corridor

Statistic	Florida	Miami-Dade County	Census Tracts Along the Project Corridor	Census Blocks Along the Project Corridor
Population (2000) [4]	15,982,378	2,253,779	42,060	1996
Population (2010)[1]	18,801,310	2,496,435	49,323	2408
Percent Increase in Population (2000-2010)	17.6%	10.8%	17.26%	20.64%
Projected Population 2020 (Medium Projection)[3]	21,326,800	2,722,900	n/a	n/a
Projected Population (2030) [3]	21,021,643	2,959,348	n/a	n/a
Percent Increase in Population 2010-2020	13%	9%	n/a	n/a
Median Age (2010)[1]	40.7	38.2	36.1	44.1
Percent of Population 65 years old or older (2010)[1]	17.3%	14.1%	9.26%	13.2%
Race – Non-White[4]	3,517,349	654,548	9,195	275
Ethnic Minorities - Hispanic	2,682,715	1,623,859	41,260	1,437
Households (2000)	6,337,929	776,906	12,615	639
Households (2010)	7,420,802	867,352	14,375	767

Table 3-1 – Population Characteristics for the State of Florida, Miami-Dade County, and the Project Corridor

Statistic	Florida	Miami-Dade County	Census Tracts Along the Project Corridor	Census Blocks Along the Project Corridor
Projected Households (2030)	n/a	1,068,664	n/a	n/a
Persons per Household (2006-2010)[2]	2.53	2.88	3.43	3.13
Median Household Income (2006-2010)[2]	$47,661	$43,605	$64,453	n/a
Median Housing Value (2006-2010)[1]	$269,600	$205,600	$360,335	n/a
School Enrollment (2000)[4]	3,933,279	643,727	n/a	n/a
School Enrollment (2010)[2]	4,682,575	629,365	15,092	n/a
Labor Force (2000)[4]*	77.2%	75.2%	68.7%	74.1%
Labor Force (2010)[1]	78.3%	78.1%	76.3%	77.7%

Sources: Florida Statistical Abstract 2004; [1]2010 U.S. Census; [2]American Community Survey (2006-2010); [3] Florida Population Study, [4]2000 U.S. Census 2000, Bureau of Economic and Business Research 2011. **Labor force is percentage of population 18 and older.*

Table 3-2 summarizes the socioeconomic data from each of the Traffic Analysis Zones within one-mile of the corridor as it compares to similar statistics for Miami-Dade County.

Table 3-2 – Socioeconomic Information from Traffic Analysis Zones Data

	2004	2010	2030
Population	**41,874**	**46,907**	**67,561**
Percent Change 2004-2010		12.02%	
Percent Change 2010-2030		44.03%	
Percent Change 2004-2030		61.34%	
Households	**13,967**	**15,470**	**22,128**
Percent Change 2004-2010		10.76%	
Percent Change 2010-2030		43.04%	
Percent Change 2004-2030		58.43%	
School Enrollment	**7,442**	**8,912**	**10,837**
Percent Change 2004-2010		19.75%	
Percent Change 2010-2030		21.60%	
Percent Change 2004-2030		45.62%	
Workers	**22,795**	**25,466**	**36,709**
Percent Change 2004-2010		11.72%	
Percent Change 2010-2030		44.15%	
Percent Change 2004-2030		61.04%	

3.1.2 Community Services

Community service facilities provide a gathering place for adjacent neighborhood and community members, as well as serving the needs of the surrounding areas. For the purpose of this study, community facilities include churches and other religious institutions; public and private schools; and public buildings and facilities such as fire stations, libraries, medical centers, and cemeteries. The community service facilities discussed below are located within or adjacent to the Krome South project study area. Recreational areas and parklands are described in ***Section 3.2.3***.

3.1.2.1 Churches and Religious Institutions

There are three churches located along the study corridor: Redland Church of the Nazarene (22755 SW 177th Avenue), Church of Christ (17700 SW 280th Street), and First Baptist Church of Homestead (29050 SW 177th Avenue). Please refer to ***Figure 3-1*** for a map showing the locations of these facilities in relation to the Krome Avenue study corridor.

3.1.2.2 Schools

Several schools that serve the area exist within close proximity of the study corridor, including 12 elementary schools, five middle schools, one high school, and two private schools. Please refer to ***Figure 3-2*** for a map showing the locations of these facilities in relation to the Krome Avenue study corridor.

Elementary Schools

- Avocado Elementary (3255 SW 6th Street)
- Bowman Foster Ashe Elementary (6601 SW 152nd Avenue)
- Christina M. Eve Elementary (16251 SW 99 Street)
- Dante B Fascell Elementary (15625 SW 80th Street)
- Gilbert L. Porter Elementary (15851 SW 112th Street)
- Jack David Gordon Elementary (1440 Country Walk Drive)
- Jane S. Roberts Center (14850 SW Cottonwood Circle)
- Leisure City K-8 Center – Elementary School (14940 SW 288th Street)
- Norma Butler Bossard Elementary (15950 SW 144th Street)
- Oliver Hoover Elementary (9050 Hammocks Boulevard)
- Redland Elementary (24501 SW 162nd Avenue)
- Redondo Elementary (18480 SW 304th Street)

Middle Schools

- Herbert A. Ammons Magnet Middle School (17990 SW 142nd Avenue)
- Jorge Mas Canosa Middle (15735 SW 144th Street)
- Leisure City K-8 Center – Middle School (14940 SW 288th Street)
- Redland Middle (16001 SW 248th Street)
- South Dade Middle (29100 SW 194th Avenue)

Senior High Schools

- South Dade Senior High School (28401 SW 167th Avenue)

Private Schools

- Colonial Christian School (17105 SW 296th Street)
- Redland Christian Academy (17700 SW 280th Street)

3.1.2.3 Fire and Police Protection

No police stations are located within the study area. Three Miami-Dade County fire rescue stations are located within the study area, one of which – Redland Fire Station – is located directly adjacent to the study corridor:

- Redland Fire Station (17605 SW 248th Street)
- Richmond Fire Station (13390 SW 152nd Street)
- Modello Fire Station (15890 SW 288th Street)

Please refer to ***Figure 3-3*** for a map showing the locations of these facilities in relation to the Krome Avenue study corridor.

3.1.2.4 Medical and Emergency Operation Facilities

Homestead Hospital (part of the Baptist Health South Florida System) is located southeast of the study corridor at 975 Baptist Way and has a 120-bed capacity. Please refer to ***Figure 3-4*** for a map showing the location of this facility in relation to the Krome Avenue study corridor.

3.1.2.5 Other Public Buildings and Facilities

Four Miami-Dade County libraries are located in proximity of the study area:

- Country Walk Branch Library (15433 SW 137th Avenue)
- South Dade Regional Library (10750 SW 211th Avenue)
- Naranja Branch Library (27056-60 South Dixie Highway)
- Homestead Branch Library (700 North Homestead Boulevard)

Please refer to ***Figure 3-5*** for a map showing the locations of these facilities in relation to the Krome Avenue study corridor.

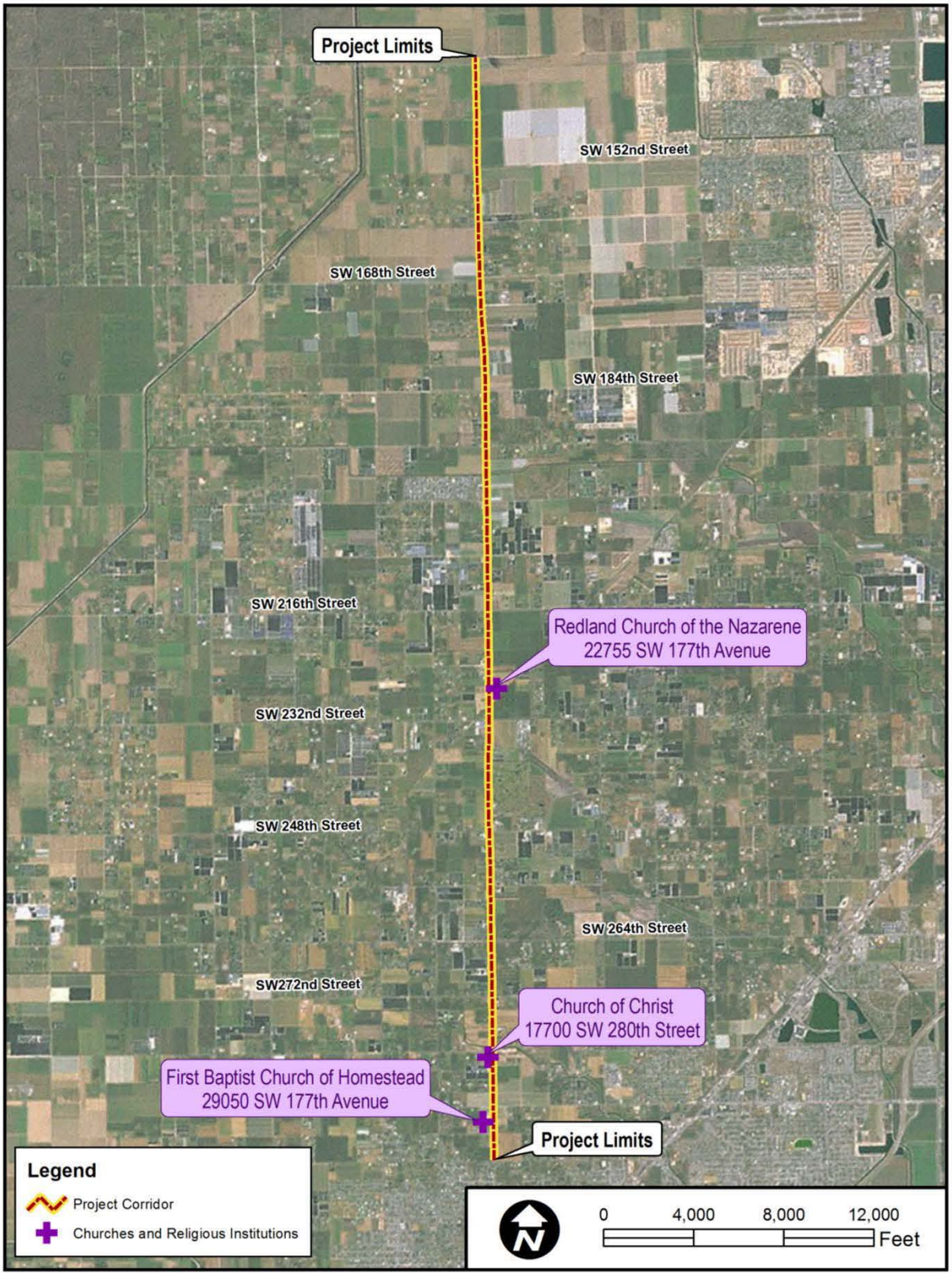


Figure 3-1 – Churches and Religious Institutions

Figure 3-2 – Schools

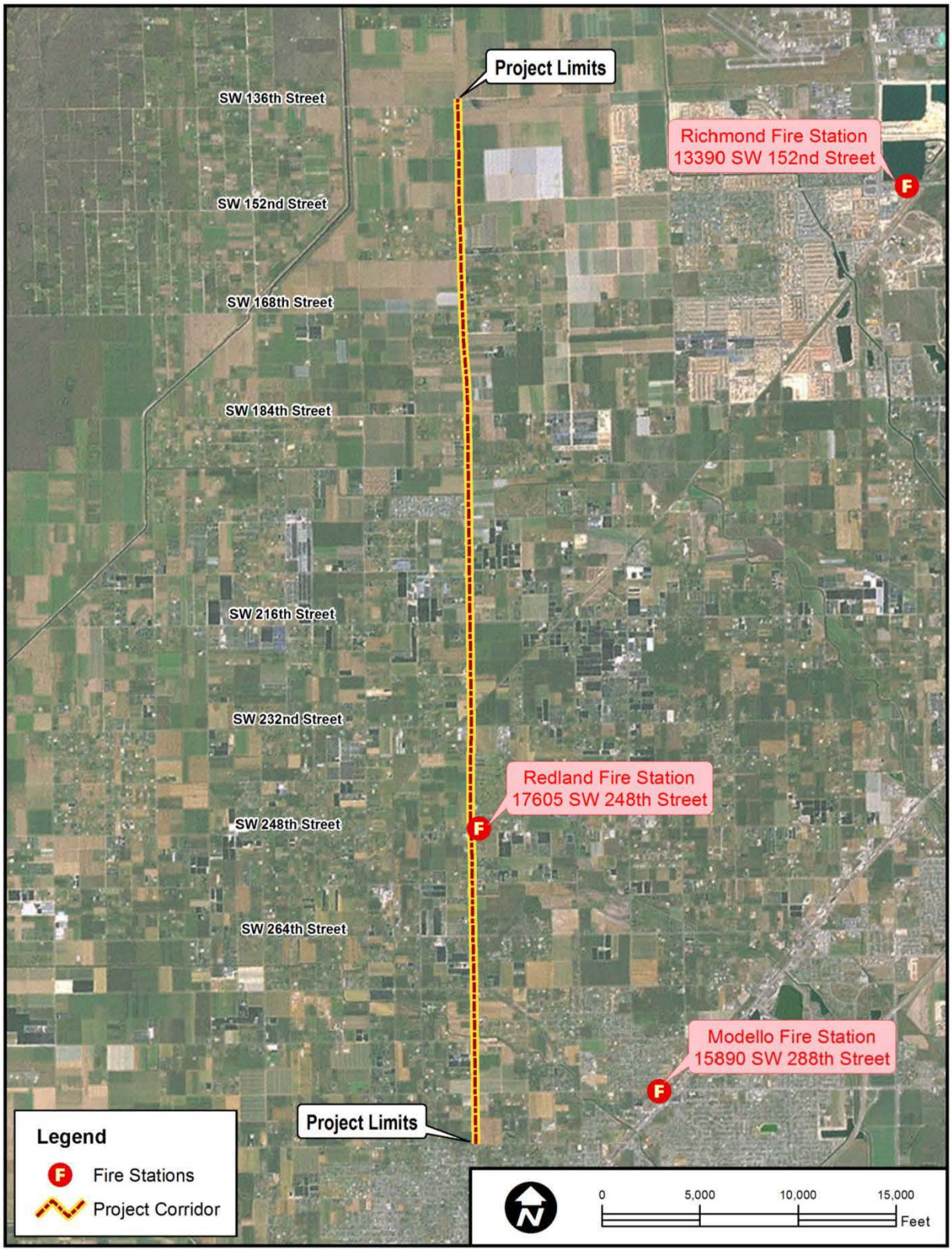


Figure 3-3 – Fire Stations

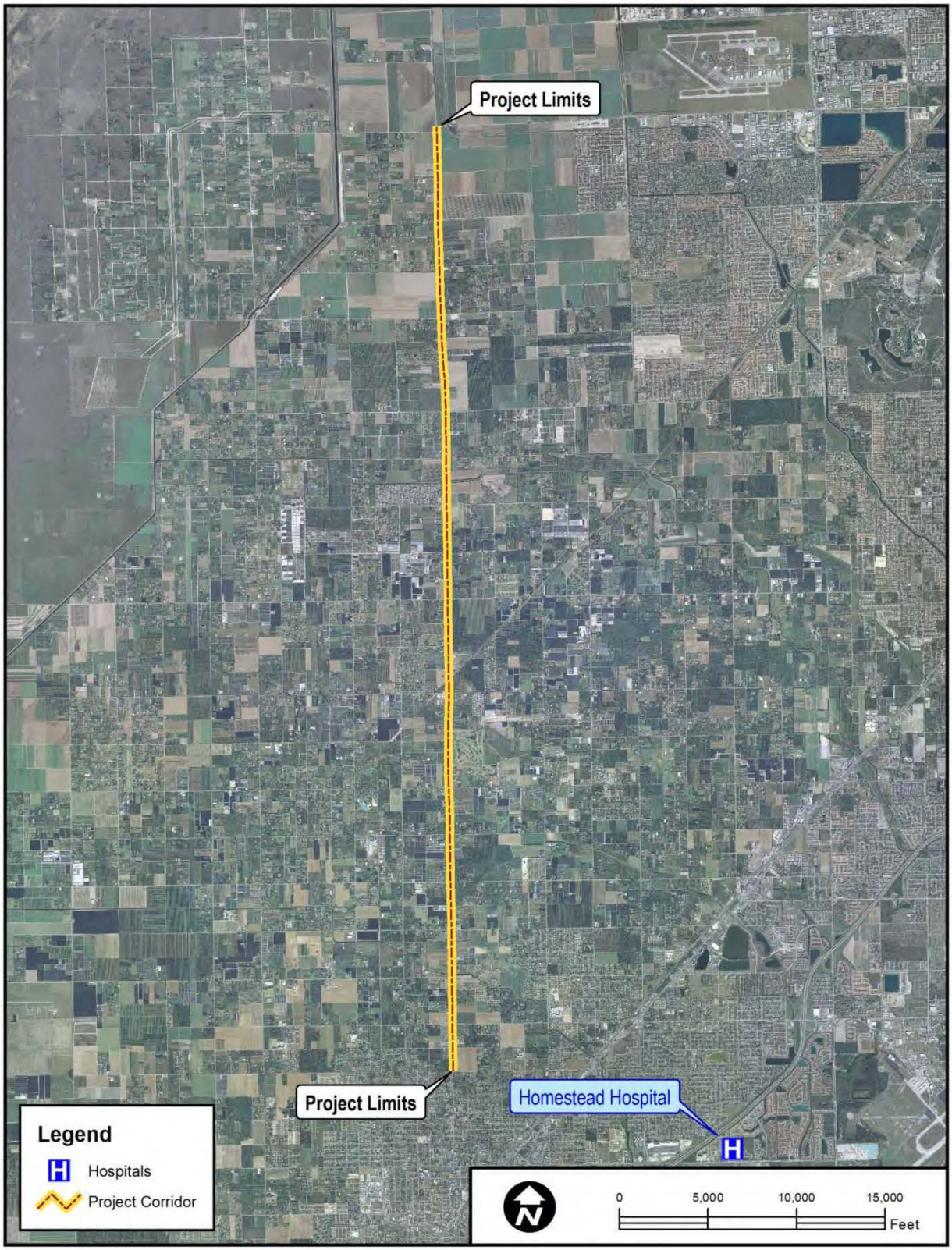


Figure 3-4 – Hospitals

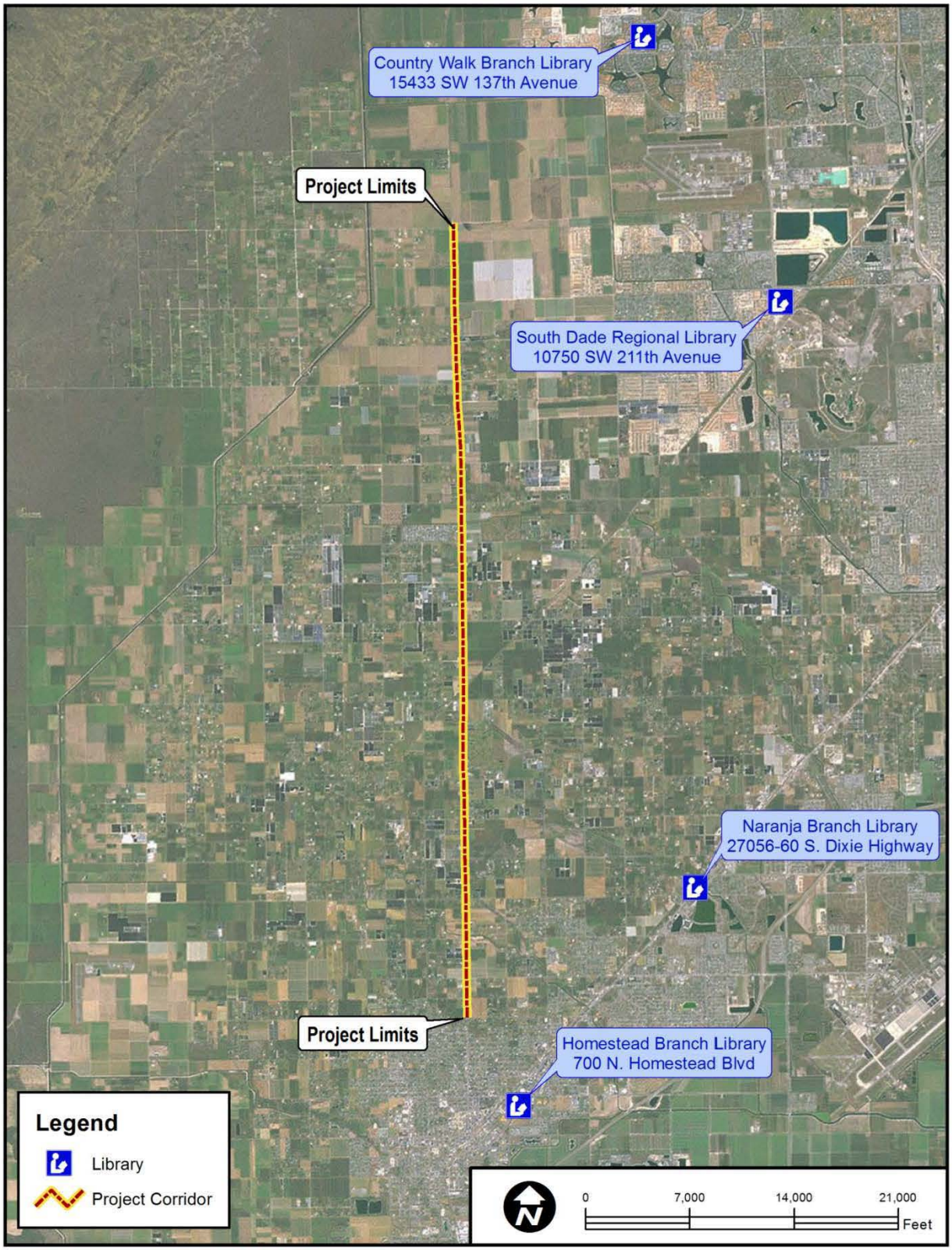


Figure 3-5 – Libraries

3.1.3 Land Use

The proposed project corridor traverses a farming and residential community. The agricultural land uses include numerous agricultural fields and herbaceous, ornamental, and fruit tree nurseries. The agricultural fields include seasonal "self-pick" fields with fruit/vegetable stands. There are many nurseries found scattered along much of the southern stretch of Krome Avenue; most are open to the public with direct access onto Krome Avenue. The agricultural land use carries a residential density of one unit per five acres. A Land Use map is provided as ***Figure 3-6***.

From SW 296th Street to SW 288th Street, residential estate densities of one to 2.5 dwelling units per acre occur on both sides of the corridor. From SW 288th Street to SW 272nd Street, residential estates occur only on the east side of Krome Avenue, while agricultural land use occurs on the west side. North of SW 272nd Street, agriculture dominates land use along Krome Avenue, with the exception of some intersections that are designated business and office land uses. The intersections on Krome Avenue that contain the office and business land uses are found at intersections of SW 272nd Street, SW 248th Street, SW 232nd Street, and SW 200th Street on the corridor.

There are nine gas stations on the corridor. Along this southern portion of the Krome corridor, between SW 288th Street and SW 184th Street, three establishments were found to have active horse hitching posts, which show evidence of the historically preserved rural character of Krome Avenue. Other land uses include an airplane glider facility on SW 168th Street and Krome Avenue, three churches, and one religious school found along the corridor.

The Dade County Archipelago Florida Forever Project helps fund the public acquisition for conservation of privately-owned subtropical pinelands and hardwood hammocks that remain in Miami-Dade County. These sites, including the Miami Rockridge Pinelands (including Ingram Pineland) and the Owaissa Bauer Pinelands (including the Owaissa Bauer Pineland Preserve Addition No. 1, 2, and 3 sites) are administered through the Miami-Dade County DRER EMRD EEL Program. One of these ecologically important parcels, the Owaissa Bauer Pineland Preserve Addition No. 1, exists along the study corridor in the southeast quadrant of the intersection of Krome Avenue and SW 264th Street. The Owaissa Bauer Pineland Preserve Addition No. 2 and 3 parcels are located along SW 264th Street approximately 700 feet east (south of SW 264th Street) and 3,300 feet northeast (north of SW 264th Street) of the intersection of Krome Avenue and SW 264th Street, respectively. Additionally, the Miami Rockridge Pinelands are located along the south side of SW 288th Street approximately 5,000 feet east of the Krome South project corridor. Camp Owaissa Bauer (including the Everglades Archery Range) is located along the north side of SW 264th Street approximately 600 feet east of the Krome Avenue study corridor. This camp is administered through the MDPROS.

The Florida Audubon Society privately owns a two-acre property, which is located on the west side of the southern end of the Krome Avenue study corridor just north of SW 296th Street. This site is not designated or classified as a park by federal, state, or local agencies; however, this privately-owned unmarked parcel is recognized by the Florida Audubon Society, the land owner,

as a bird watching location. The site contains planted rockland and coastal upland hammock species used to attract birds and butterflies to the area for viewing.

The Redland Golf and Country Club is located adjacent to the eastern Krome Avenue right-of-way, approximately 950 feet north of SW 248th Street.

Two unimproved SFWMD canal maintenance access roads bisect Krome Avenue within the study corridor. One of the maintenance access roads runs parallel to the SFWMD C-102/Princeton Canal, which crosses Krome Avenue at approximately SW 196th Street, while the other maintenance access road runs parallel to the SFWMD C-103/Mowry Canal, which crosses Krome Avenue just north of SW 280th Street. These roads are currently mowed/maintained by the SFWMD for maintenance access to the adjacent canals. The Miami-Dade Open Space Master Plan Vision Map (dated November 11, 2009) shows both of these maintenance access roads, as potential future "greenways" on the Miami-Dade Open Space Master Plan Vision Map. However, the SFWMD, the owner of these canal maintenance access roads, has no plans at this time for development of these canal maintenance access roads for trail use.

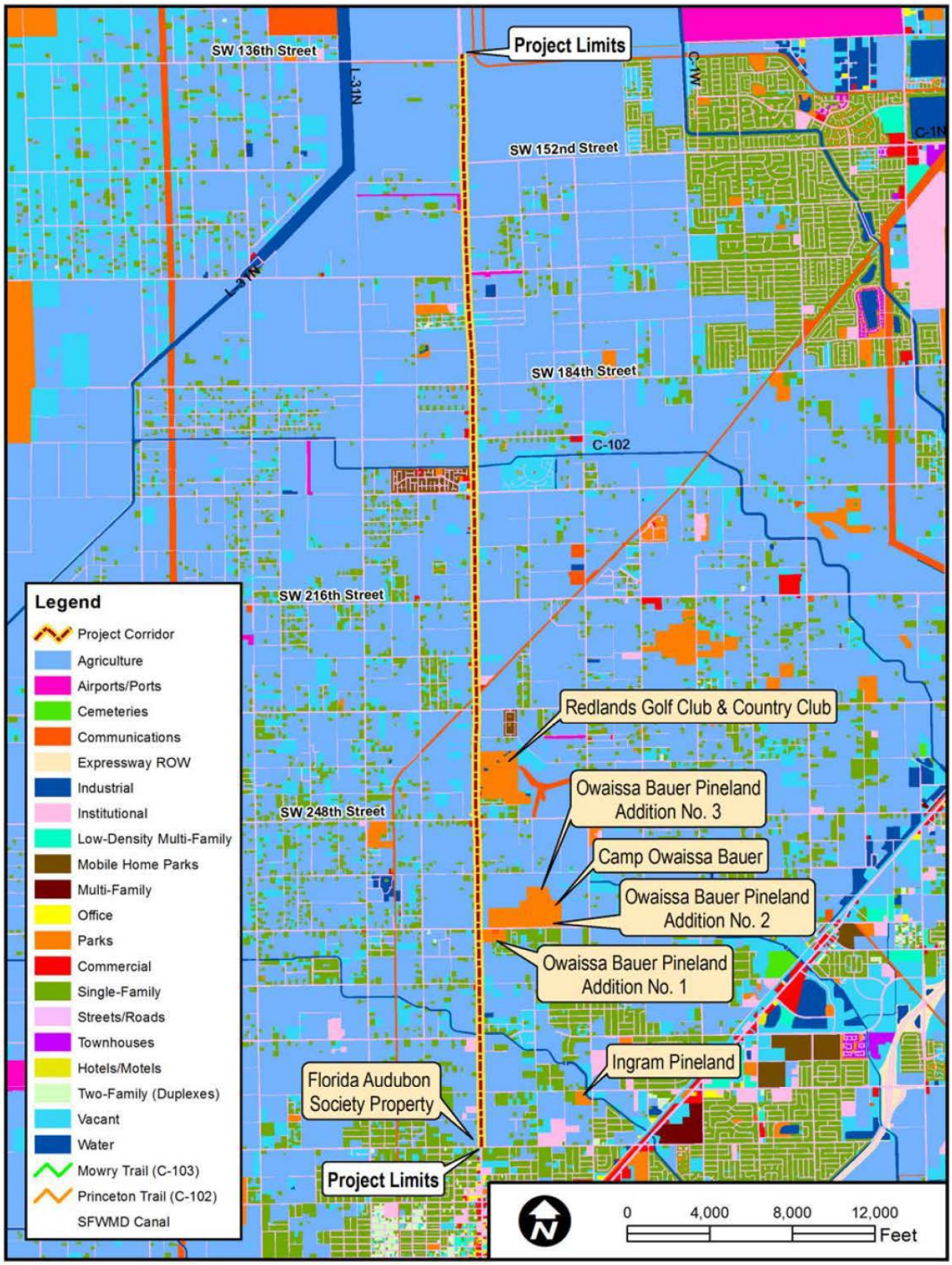


Figure 3-6 – Land Use Map

3.1.4 Utilities and Railroads

The following utility companies and governmental utility departments have facilities located within or in close proximity to the study corridor. The locations described below are estimated.

3.1.4.1 Utilities

Homestead Energy Services

An overhead three-phase line exists along the east side of Krome Avenue's existing right-of-way line beginning at SW 296th Street to SW 280th Street. The same line runs east along the south side of SW 296th Street, crosses Krome Avenue towards the west along the south side of SW 292nd Street, and crosses Krome Avenue at three locations south and north of SW 256th Street towards the east. Also, the same line runs along the south side of SW 288th Street and SW 282nd Street crossing Krome Avenue. This line ends at SW 280th Street turning west along SW 280th Street.

Florida Power & Light Company

A distribution overhead electrical facility (23 KV) exists along the east side of Krome Avenue from SW 278th Street to SW 248th Street. The same line crosses at SW 248th Street and runs along the west side from SW 248th Street to SW 236th Street. The same line crosses at SW 236th Street and runs along the east side up to SW 216th Street. The same line crosses at SW 236th Street and runs along the west side up to SW 136th Street. Multiple overhead crossings exist along this section of the corridor:

- 41-OE 23 KV
- 21-OE 240 V
- 4-OE 120 V
- 7-Span Guys

AT&T (formerly BellSouth)

An aerial cable/fiber line runs along the east side right-of-way line from SW 296th Street to SW 248th Street. An aerial cable/fiber line and a buried cable line run parallel along the west side of the right-of-way line from SW 248th Street to SW 236th Street. The same lines cross at SW 236th Street and run along the east side up to SW 216th Street. An aerial cable/fiber runs along the west side of the right-of-way line from SW 216th Street thru the end of the project. A Buried Cable line runs along the east side of the right-of-way line from SW 200th Street to SW 184th Street. Multiple overhead and buried line crossings exist along this section of the corridor:

- 1 – BellSouth Telecommunications HH
- 11 – Buried Cables
- 31 – Aerial Cable/Fiber Lines

Miami-Dade Water and Sewer Department

A 16-inch ductile iron pipe water main exists along the east side of Krome Avenue from SW 278th Street to SW 272nd Street and along SW 272nd Street extending from Krome Avenue to approximately 680 feet to the east.

3.1.4.2 Lighting

Street lighting is provided intermittently at improved intersections (SW 288th Street, SW 256th Street, SW 200th Street, SW 184th Street, and SW 136th Street). These intersections were improved between approximately 2003 and 2007. Overhead lighting consists of conventional cobra head light fixtures mounted on aluminum poles or attached to utility poles.

3.1.4.3 Railroads

CSX Transportation Railroad

A CSX Transportation, Inc. railroad crossing (FDOT Crossing Number 631137L and Railroad Milepost 1060.53) is located within the project limits. The railroad crosses over Krome Avenue just north of SW 232nd Street (Silver Palm Drive) (see ***Figure 3-7***). This is an active crossing and there is no abandonment plan for the crossing. The crossing belongs to the southern segment of the CSX Transportation Homestead Branch and there are no fixed schedules for freight and passenger train operations. Per coordination with CSX, there is approximately one train per day crossing at this location traveling at a speed limit of ten MPH. The control devices involve cantilevered flashing lights, mast mounted flashing lights, gates, pavement markings for railroad advance warning and W-10 signs for both roadway travel directions. Due to its status as a NRHP-eligible resource, this railroad crossing is also discussed in ***Section 3.2.1.2***.

Figure 3-7 – CSX Railroad Crossing North of 232nd Street

3.2 CULTURAL AND HISTORICAL RESOURCES

3.2.1 Archeological and Historic Resources

A *Cultural Resource Assessment Survey* (CRAS) was completed in 2005 for this project in accordance with the procedures contained in 36 CFR Part 800 and in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 12 – Archeological and Historical Resources (dated January 12, 1999). The objective was to document the historic and archeological resources within the proposed project area of potential effect and assess them in terms of their eligibility for listing in the NRHP according to the criteria set forth in 36 CFR Section 60.4. Background research and a field survey were also coordinated with the State Historic Preservation Officer (SHPO). An addendum to the CRAS was prepared in 2012. The objectives of the addendum were to identify any additional cultural resources within the proposed area of potential effect which were not considered historic at the time of the previous CRAS, assess them in terms of their eligibility for listing in the NRHP, and examine the potential effects of the project. The following sections discuss the existing cultural resources identified within the Krome South project study area. For additional information regarding cultural and historical resources, please refer to the CRAS and *CRAS Addendum* completed for this project, which are available for review on file at the FDOT District Six offices in Miami, Florida, and are incorporated by reference.

3.2.1.1 Archeological Resources

A total of six shovel tests were excavated in the project area during preparation of the 2005 CRAS, which were placed judgmentally in areas of high archeological site potential or areas of extant hammock vegetation. Other portions of the project area were not subjected to shovel-testing due to the presence of fill, buried utilities, buildings, and roads in the study corridor. However, the entire project area was subjected to a windshield and pedestrian survey. No precontact or historic period archeological sites were encountered during any of these investigations. During the CRAS Addendum prepared in 2012, an updated search of the Florida Master Site File and Miami-Dade County local data was conducted, which identified no previously recorded archeological sites within one mile of the project area of potential effect (no archeological resources were identified during the 2012 CRAS Addendum).

3.2.1.2 Historic Resources

The CRAS resulted in the identification of five previously recorded historic resources (8DA2764, 8DA2765, 8DA2818, 8DA6762, and 8DA9603), one golf course (8DA10051), and 27 newly recorded historic buildings (8DA9669-8DA9672, 8DA9674-96). Florida Master Site File forms were prepared for the identified historic resources visible from the right-of-way. Four historic resources were not visible or accessible from the public right-of-way; therefore, Florida Master Site File forms were not completed for these resources. Of the identified resources, two buildings, the Howard Schaff Residence (8DA9674) and Clarence J. Parman Residence (8DA9675) and one golf course, the Redland Golf Course (8DA10051), were determined eligible for listing in the NRHP on an individual basis. The remaining 30 resources were determined ineligible for listing in the NRHP, either individually or as part of a historic district. In a letter dated August 1, 2005, the SHPO concurred with the findings of the survey (see ***Appendix G***). The SHPO

noted that they could not determine the NRHP eligibility of the resources at 16405, 17101, 20345, and 26430 SW 177th Avenue as they were inaccessible to the surveyors[8].

The CRAS Addendum prepared in 2012 resulted in the identification of 11 newly recorded historic resources within the project area of potential effect (8DA10753, 8DA12347-8DA12356). In addition, Florida Master Site File forms were updated for six of the resources documented during the 2005 study, as they have undergone alterations since the time of their previous documentation (8DA06760, 8DA09677, 8DA09678, 8DA09682, 8DA09684, and 8DA9690). Florida Master Site File forms were prepared and updated only for the identified historic resources visible from the right-of-way. The historic resources located at 27101, 26430, 20901, and 20345 SW 177th Avenue were not documented during this study as they were not visible from the right-of-way[9]. However, upon review of aerial photographs of these resources, each site has large setbacks; therefore, these sites will not be impacted by any of the proposed alternatives. One of the newly recorded resources, the Seaboard Air Line (CSX) Railroad (8DA10753), is considered eligible for listing in the NRHP. The remaining ten historic resources are considered ineligible for listing in the NRHP.

3.2.2 Section 4(f) Resources

There are ten sites that were considered for potential Section 4(f) involvement on the project. These properties are located either adjacent to or within close proximity to the Krome Avenue study corridor. A map showing the potential Section 4(f) resources is provided as ***Figure 3-8***.

The following properties may be protected under the Section 4(f) park or wildlife refuge category:

- Camp Owaissa Bauer (including the Everglades Archery Range) (also discussed in ***Section 3.2.3***)
- Owaissa Bauer Pinelands:
  - Owaissa Bauer Pineland Preserve Addition No. 1 (also discussed in ***Section 3.3.12.5***)
  - Owaissa Bauer Pineland Preserve Addition No. 2 (also discussed in ***Section 3.3.12.3***)
  - Owaissa Bauer Pineland Preserve Addition No. 3 (also discussed in ***Section 3.3.12.3***)

[8] The sites located at 16405 and 17101 SW 177th Avenue were not visible from the right-of-way during the survey conducted for the 2005 CRAS. However, Florida Master Site File forms were prepared for both of these sites and included in the CRAS. During the survey conducted for the 2012 CRAS Addendum, both of these sites were visible from the right-of-way (potentially due to a reduction in vegetation between the right-of-way and the resource). The resources and their significance were determined to have not changed since their documentation for the 2005 CRAS; therefore, updated Florida Master Site File forms were not prepared during the survey.

[9] The sites located at 27101 and 20901 were not evaluated as part of the 2005 CRAS. During the survey conducted for the 2012 CRAS Addendum, both of these resources were not visible from the right-of-way, and therefore not evaluated.

- SFWMD canal access roads along the C-102/Princeton Canal and C-103/Mowry Canal[10] (also discussed in ***Section 3.3.1***)

In addition to the above sites, the following properties may be protected under the Section 4(f) historic resources category:

- Howard Schaff Residence (8DA9674) (also discussed in ***Section 3.2.1.2***)
- Clarence J. Parman Residence (8DA9675) (also discussed in ***Section 3.2.1.2***)
- Redland Golf Course (8DA10051) (also discussed in ***Section 3.2.1.2*** and ***Section 3.2.3***)
- Seaboard Air Line (CSX) Railroad (8DA10753) (also discussed in ***Section 3.1.4.3*** and ***Section 3.2.1.2***)

[10] The Miami-Dade Open Space Master Plan Vision Map (dated November 11, 2009) shows both of these maintenance access roads, as potential future "greenways" on the Miami-Dade Open Space Master Plan Vision Map; thus, they were considered for evaluation as potential Section 4(f) resources.

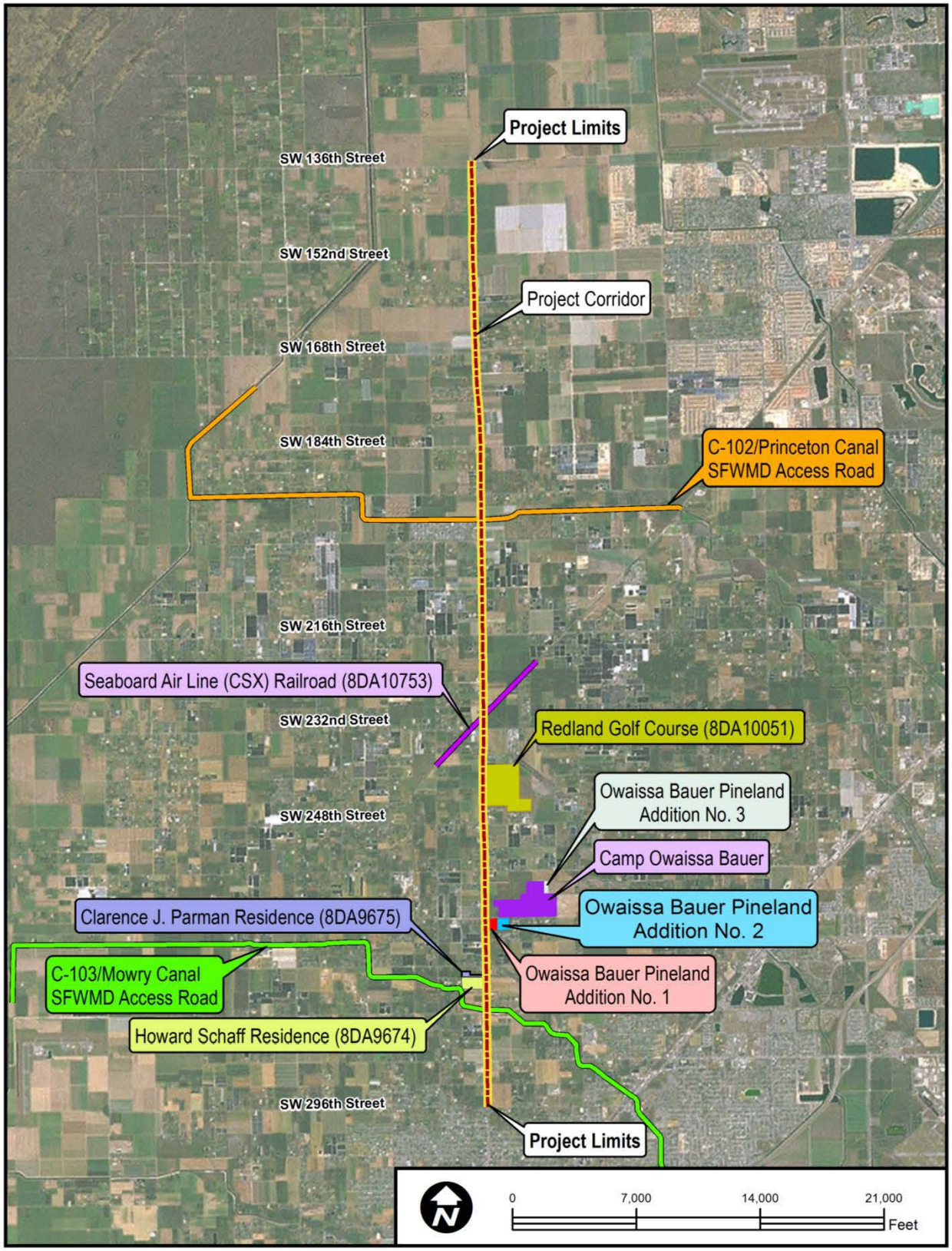


Figure 3-8 – Potential Section 4(f) Resources

3.2.3 Recreational and Parklands

While there are no designated public parks located directly on Krome Avenue, there are Miami-Dade County neighborhood and local parks in the vicinity of the study corridor. A map showing the Recreational and Parklands sites is provided as ***Figure 3-9***.

Local Parks

Oak Creek Park is located approximately 2.2 miles east of the study corridor at the intersection SW 144th Street and SW 155th Avenue and has a playground and sport courts. Kings Grant Park is located approximately 2.5 miles east of the study corridor at the intersection of SW 160th Street and SW 152nd Avenue and has a playground. The Redland Fruit and Spice Park is a unique park that has over 500 types of plants that produce spices, tropical fruits and nuts. This park, which is located approximately 3,900 feet west of the study corridor at 24801 SW 187th Avenue, has an educational element as well as hosting an annual art festival. These parks contain a mixture of pineland and mixed hardwood plant species.

Camp Owaissa Bauer (including the Everglades Archery Range)

Camp Owaissa Bauer (including the Everglades Archery Range) is located along the north side of SW 264th Street approximately 600 feet east of the Krome Avenue study corridor. This camp is administered through the MDPROS and is designed for group camping. It has buildings and facilities to accommodate a total of 160 campers for overnight and extended period camping. The camp is available to organized groups up to one year in advance. This facility also has several amenities in addition to camping, including cabins, a shooting range, a pool, multipurpose fields, a volleyball court, basketball courts, a campfire circle, and nature trails. Several native pineland and mixed hardwood upland plants are located on this site.

SFWMD Canal Access Roads

Two unimproved SFWMD canal maintenance access roads bisect Krome Avenue within the study limits. One runs parallel to the C-103/Mowry Canal, just north of SW 280th Street. The second runs parallel to the C-102/Princeton Canal, at approximately SW 196th Street. The Miami-Dade Open Space Master Plan Vision Map (dated November 11, 2009) shows both of these maintenance access roads, as potential future "greenways" in the MDPROS Master Plan. However, the SFWMD, the owner of these canal maintenance access roads, has no plans at this time for development of these canal maintenance access roads for trail use. These access roads are also discussed in ***Section 3.3.1***.

Florida Audubon Society Property

The Florida Audubon Society owns a two-acre unmarked/undesignated parcel, which is located on the west side of the southern end of the Krome Avenue study corridor just north of SW 296th Street/Avocado Drive (Miami-Dade County Folio Number 30-7801-000-0583). The Florida Audubon Society parcel has no special land use designation (i.e., park, preserve, etc.); however, the land owner has designated the parcel as a bird watching site. There are no public facilities or

managed trails at this site. In addition, the site does not appear to be actively managed and has both native and exotic species growing throughout. Although the property is overgrown, several state-listed plant species exist within its limits, which appear to have been planted in order to attract birds and butterflies for viewing purposes. Due to the protected plant resources located on this site, plant surveys were conducted, which are discussed in ***Section 3.3.12.6.***

Redland Golf and Country Club

The Redland Golf and Country Club is located adjacent to the eastern Krome Avenue right-of-way, approximately 950 feet north of SW 248th Street. The golf course and country club are privately-owned and open to the public for use. The golf course is a designed recreational landscape that consists of 18 fairways. The first nine fairways were constructed circa 1947, and the remaining nine were added in 1963. This course has been modified very little since its completion. Due to its status as a NRHP-eligible resource, the Redland Golf Course is also discussed in ***Section 3.2.1.2***.

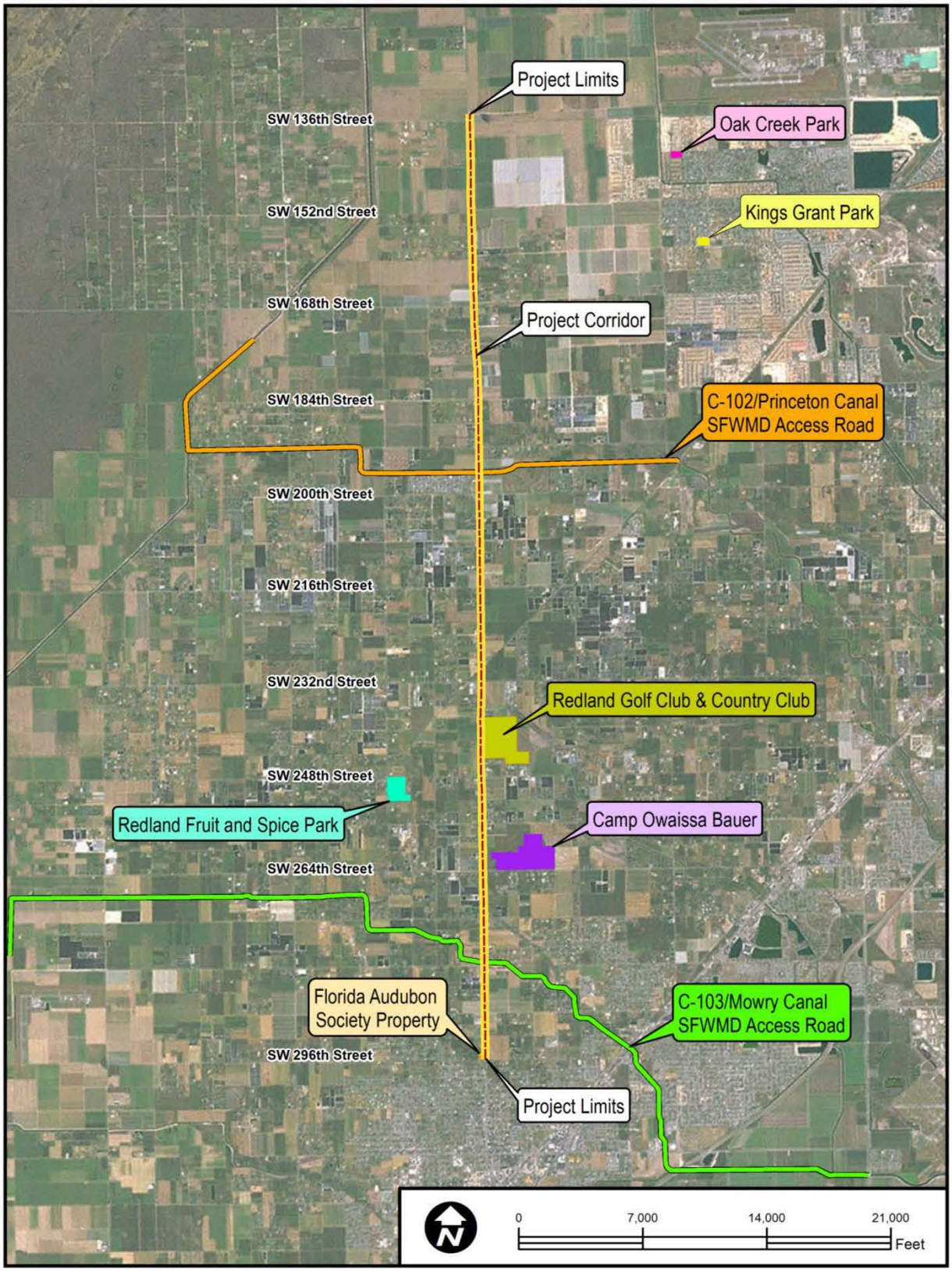


Figure 3-9 – Recreational and Parklands

3.3 NATURAL AND PHYSICAL RESOURCES

3.3.1 Bicycle and Pedestrian Facilities

No designated bicycle and/or pedestrian facilities currently exist along Krome Avenue or any of the adjacent side streets within the study limits. Additionally, there are no crosswalks and/or signalized pedestrian crossings at any of the existing signalized intersections in the study area. There are no designated equestrian trails along the study corridor.

Two unimproved SFWMD canal maintenance access roads bisect Krome Avenue within the study corridor. One of the maintenance access roads runs parallel to the SFWMD C-102/Princeton Canal, which crosses Krome Avenue at approximately SW 196th Street, while the other maintenance access road runs parallel to the SFWMD C-103/Mowry Canal, which crosses Krome Avenue just north of SW 280th Street. These roads are currently mowed/maintained by the SFWMD for maintenance access to the adjacent canals. The Miami-Dade Open Space Master Plan Vision Map (dated November 11, 2009) shows both of these maintenance access roads, as potential future "greenways" in the MDPROS Master Plan. However, the SFWMD, the owner of these canal maintenance access roads, has no plans at this time for development of these canal maintenance access roads for trail use.

3.3.2 Visual / Aesthetics

The aesthetic quality of a corridor is composed of visual resources. These are physical features that make up the visible landscape, such as land, water, vegetation and man-made features. The man-made structures along the study corridor are predominated by open agriculture/nursery fields, modern commercial development, and emerging modern residential development. From SW 296th Street to SW 288th Street, residential estates occur on both sides of the corridor. From SW 288th Street to SW 272nd Street, residential estates occur only on the east side of Krome Avenue while agricultural land use occurs on the west side. North of SW 272nd Street, agriculture dominates land use along Krome Avenue with the exception of some intersections that are designated business and office land uses. Along the southern portion of the corridor, between SW 288th Street and SW 184th Street, three establishments were found to have active horse hitching posts, which show evidence of the historical rural character of Krome Avenue. The corridor also exhibits a unique natural scenery provided by a large number of landscaping and fruit plant nurseries abutting both sides of the road.

Two historic structures exist which make use of architectural design elements. These facilities are as follows (also discussed in ***Section 3.2.1.2***):

- Howard Schaff Residence (8DA9674)
- Clarence J. Parman Residence (8DA9675)

Other visual resources along the Krome Avenue study corridor include the following:

- Owaissa Bauer Pineland Preserve Addition No. 1 (also discussed in ***Section 3.3.12.5***)
- Redland Golf Course (8DA10051) (also discussed in ***Section 3.2.1.2*** and ***Section 3.2.3***)
- Florida Audubon Society Property (also discussed in ***Section 3.2.3*** and ***Section 3.3.12.6***)

3.3.3 Air Quality

In accordance with applicable FHWA guidelines and guidelines contained in the FDOT *PD&E Manual*, Part 2, Chapter 16 – Air Quality Analysis (dated September 13, 2006), potential air quality impacts in the area surrounding the project corridor were assessed for all viable project alternatives, including the No-Build Alternative. The project's No-Build and Build alternatives were assessed for potential air quality impacts at the project level using the FDOT's PC based CO Florida 2012 screening model. For additional information regarding air quality, please refer to the *Air Quality Technical Memorandum* completed for this project, which is on file at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

Traffic-generated air quality impacts are primarily a concern near signalized intersections during peak periods, when numerous vehicles are often stopped and idling during the traffic signal's red phase. The CO Florida 2012 model incorporates emission factors developed from the U.S. Environmental Protection Agency's (USEPA) Motor Vehicle Emission Simulator (MOVES) version 2010a model and the CAL3QHC2 dispersion model and includes several worst-case assumptions for traffic characteristics, receptor location, meteorology and terrain. The CO Florida 2012 model generates multiple default receptor locations, the numbers of which are dependent upon intersection type. A receptor site is a place where people can reasonably be expected to spend a substantial amount of time. User inputs to the screening model include project alternative; land use type; analysis year; and the volume and speed of peak hour traffic approaching the intersection. Given the local surroundings, a suburban land use type was selected, which includes a background CO level of 3.3 PPM for one-hour predictions and 2.0 PPM for eight-hour predictions.

Output from the CO Florida 2012 model includes the estimated one-hour and eight-hour CO level, in PPM, at the default receptor locations and a report stating whether the project passes or fails the screening analysis. Those results are then compared to the maximum one-hour and eight-hour concentrations for CO in the National Ambient Air Quality Standards (NAAQS), 35 PPM and 9 PPM, respectively. The premise of this approach is that CO concentrations elsewhere along the project corridor will be lower than these worst-case screening values. A project alternative that passes the CO Florida 2012 model is not expected to result in any violations of the NAAQS for CO and is not likely to have any impact on the air quality of the surrounding area.

The intersection chosen for the screening test is typically the one with the worst-case combination of highest traffic volumes, lowest vehicular speeds, and closest receptors. Based on the traffic analysis done for this study, the highest volume intersection, SW 184th Street (Eureka Drive), was selected as the worst-case intersection.

Based on the proposed typical sections, the closest distance from the edge of the travel lane to the right-of-way line for the No-Build conditions for Krome Avenue is 19 feet, and the closest distance for the Build alternatives is 42 feet. This distance is used to locate the default receptors. The default receptors (though not actual receptors) represent the closest distance a receptor can be from the edge of the travel lane (no receptors are located within the right-of-way), therefore providing the most conservative results. Worst case assumptions included in the screening model for suburban areas of Miami-Dade County were used. The air screening test location (signalized intersection representing the worst case assumptions) used for the air quality analysis is shown on ***Figure 3-10***.

The traffic data for both the opening year (2020) and the design year (2040) for the Build and No-Build alternatives were from the Socio-Economic Data Review and Traffic Volumes Update dated August 2012 (Appendix A of the PER), which was an update to the *Draft Operational Analysis Technical Memorandum* for the Krome Avenue PD&E Study dated September 2005. The data shown in ***Table 3-3***, extracted from the August 2012 report, were used in the analysis. The traffic data is included in *Air Quality Technical Memorandum* completed for this project.

Table 3-3 – Krome Avenue at Eureka Drive Traffic Data

Alternative	Year	Average Approach Speed (mph)	Peak Hour Approach Volume (worst leg)
No-Build	2020	45	1,372
No-Build	2040	45	N/A
Build	2020	45	1,955
Build	2040	45	2,138

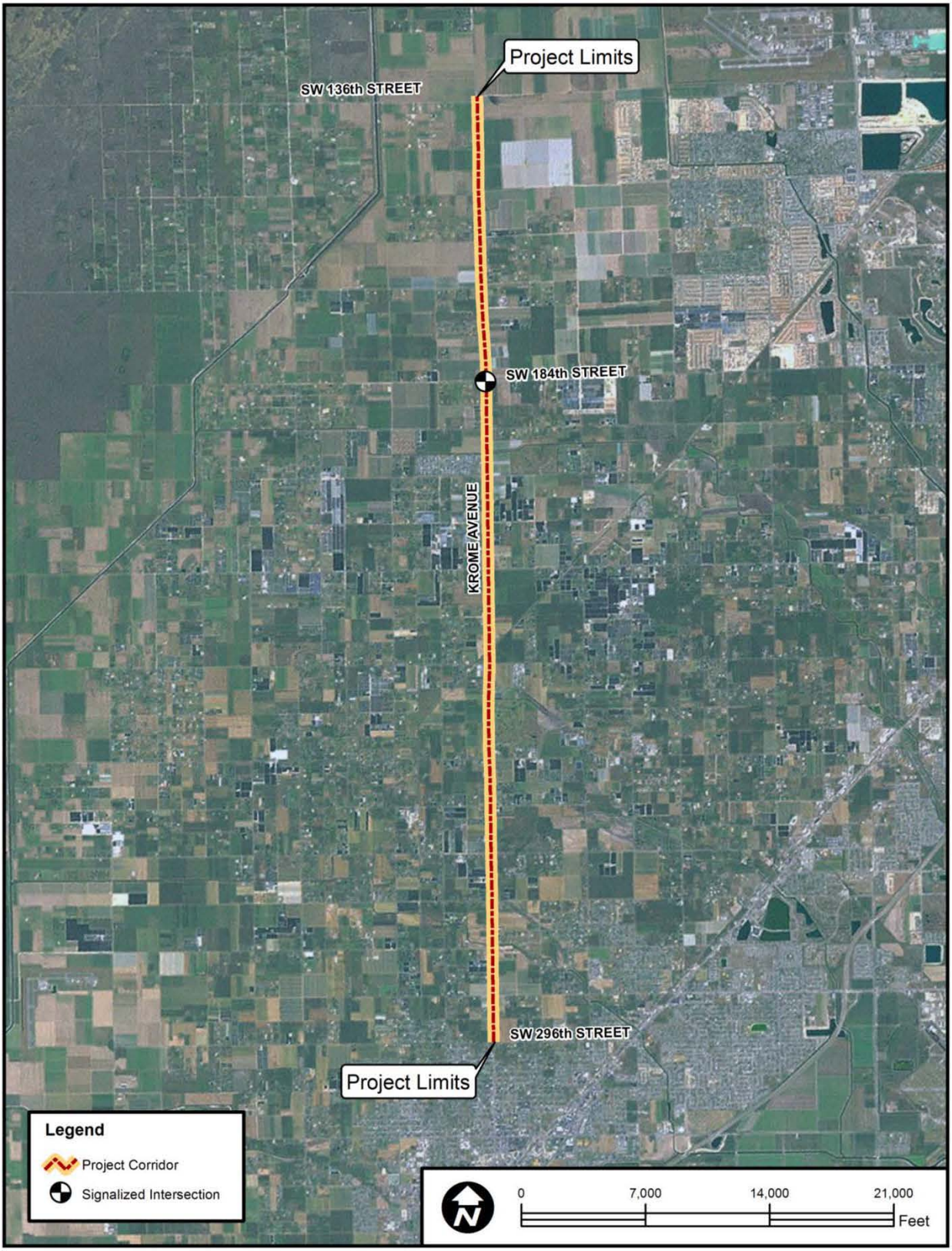


Figure 3-10 – Air Screening Test Location

3.3.4 Noise

A traffic noise study was conducted in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 17 – Noise (dated May 24, 2011) and Title 23 Code of Federal Regulations (CFR) Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (July 13, 2010). The primary objectives of this noise study were to: describe the existing site conditions including noise sensitive land uses within the project study area, assess the significance of traffic noise impacts on noise sensitive sites for all of the build alternatives, and evaluate abatement measures for receptors that, under the build alternatives, approach or exceed the Noise Abatement Criteria (NAC) set forth by the FHWA. Other objectives of the traffic noise study included consideration of construction noise and vibration impacts and the development of noise level isopleths, which can be used in the future by Miami-Dade County to identify compatible land uses.

Noise sensitive sites are defined as properties where frequent human use occurs and where a lowered noise level would be beneficial. The FHWA has established NAC for seven land use activity categories. These criteria determine when an impact occurs and when consideration of noise abatement analysis is required. Maximum noise level thresholds have been established for five of these activity categories. These maximum thresholds, or criteria levels, represent acceptable traffic noise level conditions. The July 2010 NAC levels are presented in ***Table 3-4***. Noise abatement measures must be considered when predicted noise levels approach or exceed the NAC levels or when a substantial noise increase occurs. A substantial noise increase is defined as when the existing noise level is predicted to be exceeded by 15.0 dB(A) or more as a result of the transportation improvement project. The FDOT defines "approach" as within 1.0 dB(A) of the FHWA criteria, expressed as the FDOT NAC. As shown in ***Table 3-4***, the criteria vary according to a property's activity category.

Table 3-4 – Noise Abatement Criteria

[Hourly A-Weighted Sound Level-Decibels [dB(A)]				
Activity Category	**Activity Leq(h)[1]**		**Evaluation Location**	**Description of Activity Category**
	FHWA	**FDOT**		
A	57	56	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	66	Exterior	Residential
C[2]	67	66	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	51	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.

Table 3-4 – Noise Abatement Criteria

[Hourly A-Weighted Sound Level-Decibels [dB(A)]				
Activity Category	**Activity Leq(h)[1]**		**Evaluation Location**	**Description of Activity Category**
	FHWA	**FDOT**		
E[2]	72	71	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	–	–	–	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	–	–	–	Undeveloped lands that are not permitted.

Source: Table 1 of 23 CFR Part 772

[1] The Leq(h) Activity Criteria values are for impact determination only, and are not a design standard for noise abatement measures.

[2] Includes undeveloped lands permitted for this activity category.

Note: FDOT defines that a substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 decibels or more as a result of the transportation improvement project. When this occurs, the requirement for abatement consideration will be followed.

Developed lands along the project corridor were evaluated to identify noise sensitive receptor sites that may be impacted by traffic noise associated with the proposed improvements. Noise sensitive receptor sites represent any property where frequent exterior human use occurs and where a lowered noise level would be of benefit. This includes residential units (FHWA Noise Abatement Activity Category B); other noise sensitive areas including parks and recreational areas, medical facilities, schools, and places of worship (Category C); and commercial properties (Category E). Noise sensitive sites also include interior use areas where no exterior activities occur for facilities such as auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, recording studios, and schools (Category D).

The project study area is generally suburban to the south and increasingly agricultural to the north. Most of the homes are located far apart from each other, on large lots. Relatively few of the homes are located in subdivisions. Forty-six residences that have the potential for noise impacts due to the proposed improvements were identified along the corridor. Two of these residences, the Howard Schaff Residence (27450 SW 177th Avenue) and Clarence J. Parman Residence (27250 SW 177th Avenue), are eligible for listing on the NRHP (also discussed in ***Section 3.2.1.2***). Non-residential sites with potential to be impacted by the project included three churches, outdoor seating areas at three restaurants, the Grove Inn Country Guesthouse, and a pool at the Redland Country Club. The Florida Audubon Society owns a two-acre unmarked/undesignated parcel, which is located on the west side of Krome Avenue just north of SW 296th Street, near the southern end of the project corridor. This site has no special land use designation (i.e., park, preserve, etc.); however, the land owner has designated the parcel as a bird watching site. There are no public facilities or managed trails at this site, but the property is currently open to the public. Two unimproved SFWMD canal maintenance access roads run parallel to the C-103/Mowry Canal and the C-102/Princeton canal, respectively, crossing Krome Avenue. There are no facilities such as picnic tables, campgrounds, or activity areas where large

numbers of people may congregate for long periods of time. Typically, there is only occasional use of these areas; therefore, they are not considered areas of frequent human use. As such, these areas were not considered to be noise sensitive.

Field measurements were conducted at three locations along the project corridor. These measurements were conducted in accordance with the FHWA document, *Measurement of Highway-Related Noise* (FHWA-PD-96-046). The measurements were collected in or near residential neighborhoods between 64.5 and 91 feet from the edge of the nearest travel lane on Krome Avenue. The traffic noise levels during the measurements were found to range from 61.8 to 67.7 dB(A).

Under the existing conditions, the primary source of noise at the nearby noise sensitive sites is traffic on Krome Avenue. The FHWA Traffic Noise Model (TNM) Version 2.5 (February 2004) was used to predict worst-case traffic noise levels and to analyze the effectiveness of noise barriers. Existing traffic noise levels along Krome Avenue are predicted by the TNM to range from 52.1 to 67.8 dB(A). Existing traffic noise levels at the two NRHP-eligible sites, the Howard Schaff Residence and the Clarence J. Parman Residence are predicted to be 56.9 and 66.1 dB(A), respectively. The worst-case existing noise level at the Florida Audubon Society property is predicted to be 66.1 dB(A). For additional information on the model and existing noise conditions, please refer to the *Noise Study Report* completed for this project, which is on file at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

3.3.5 Wetlands/Surface Waters

Pursuant to Presidential Executive Order 11990, entitled "Protection of Wetlands," and in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 18 – Wetlands (dated April 22, 2013), the project alternatives were analyzed for potential wetland and surface water impacts and a *Wetland Evaluation Report* (WER) was prepared for this project, which is on file at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

The Krome Avenue study corridor was reviewed to identify, map and assess wetland and surface water communities that are located within or adjacent to the Krome Avenue study area. The study area consisted of the roadway corridor within the existing FDOT right-of-way limits and a review of adjacent lands within a distance of 100 feet east and west of the existing roadway right-of-way.

Pursuant to Presidential Executive Order 11990, the U.S. Department of Transportation (USDOT) has developed a policy (USDOT Order 5660.1A), Preservation of the Nation's Wetlands (dated August 24, 1978), which requires all federally funded highway projects to protect wetlands to the fullest extent possible. In accordance with this policy, the project has been evaluated to determine which build alternatives would impact wetlands or surface waters, the extent to which those potential impacts would affect wetland functions and values, and mitigative measures that could be taken to minimize impacts.

In order to determine preliminary locations and boundaries of the existing wetland and surface water communities within the study area, available site-specific data was collected and reviewed.

Using this information, the approximate locations and boundaries of wetland and surface water communities in the project area were determined and mapped in Geographic Information Systems (GIS) on aerial photography for verification in the field.

Project biologists familiar with Florida wetland community types conducted field investigations of the study area in May and June 2004, with follow-up field reviews conducted in September and December 2010. The purpose of the field investigations was to locate and delineate wetland and surface water boundaries of the areas identified during the in-house data review as well as areas not previously identified. The extent of jurisdictional wetlands and/or surface waters for the Krome Avenue study area were determined using the approaches outlined in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual, Technical Report Y-87-1, January 1987; the November 2010 USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Atlantic and Gulf Coastal Plain Region; and Chapter 62-340 Florida Administrative Code (FAC), "Delineation of the Landward Extent of Wetlands and Surface Waters." During the field investigation, attention was given to identifying plant species composition for each wetland/surface water area delineated as well as its adjacent upland habitats. Exotic plant infestations, shifts in historical communities, and any other disturbances were noted. Wildlife observations and signs of wildlife usage at each wetland/surface water and adjacent upland habitat were also noted.

Wetland surveys of the project study area were conducted by project biologists in 2004 and 2010. No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the U.S., as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area. This includes natural wetland communities as well as swales or other manmade stormwater features.

However, three areas identified as surface waters consisting of two community types were identified within the study corridor. These areas consist of an inundated rock mining pit (borrow pit) (SW-1) excavated in Miami oolite rock located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMD's C-102/Princeton canal (SW-2) which crosses Krome Avenue at approximately SW 196th Street; and the SFWMD's C-103/Mowry canal (SW-3) which crosses Krome Avenue just north of SW 280th Street. These areas, identified herein as SW-1, SW-2 and SW-3, respectively, are likely to be considered Surface Waters of the State and impacts are likely to be minimal. The existing conditions vary in terms of habitat value, quality, level of intrusion by exotic/invasive (undesirable) species and degree of geographical isolation. No public uses (i.e., recreational, scientific, cultural, public water supply system, etc.) were apparent for the rock mining pit (SW-1), which is located on private land. The canals (SW-2 and SW-3), operated and maintained by the SFWMD. These canals could also potentially be utilized for limited fishing and/or small boating activities. In regards to edge relationships, the boundaries of all three surface water areas are man-made; there are no areas that exhibit natural ecotones. For the most part, agricultural and residential land uses abut these surface water areas within the project limits. Also, regarding integrity (defined as a complete or unimpaired state), the affected surface water areas along the study corridor have no substantial integrity since they are all man-made features, which are continuously impacted by the adjacent land use activities and regional hydrologic alterations contributing to the lack of bio-diversity within these areas. These areas provide moderate to low habitat value for resident and

migratory wildlife species. The three surface waters identified within the study corridor are described in detail below.

Table 3-5, lists each identified surface water area by type and classification. The locations and approximate boundaries of the surface water areas identified within the study area are shown in ***Figures 3-11a***, ***3-11b***, and ***3-11c***.

Table 3-5 – Surface Water Type and Descriptions

Surface Water ID	Surface Water Type	Surface Water Size	FLUCFCS Code*	FLUCFCS Description	USFWS Code**	USFWS Description
SW-1	Former Borrow Pit	0.66 acres	742	Borrow Areas/ Lakes < 10 acres	PUBHx	Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated
SW-2 (C-102/ Princeton)	Canal	N/A	510	Streams and Waterways	R2UBHx	Rock Rubble Bottom, Permanently Flooded, Excavated
SW-3 (C-103/ Mowry)	Canal	N/A	510	Streams and Waterways	R2UBHx	Rock Rubble Bottom, Permanently Flooded, Excavated

* Florida Land Use, Cover, and Forms Classification System (FLUCFCS) = From the FLUCFCS (FDOT, 1999).
** USFWS = From the Classification of Wetlands and Deepwater Habitats of the U.S.
Source: Cowardin et al., 1979

Former Borrow Pit (SW-1)
FLUCFCS – 742 (Borrow Areas)
USFWS – PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)

This surface water community (SW-1) consists of an apparent former borrow pit located on the west side of Krome Avenue, approximately 1,000 feet north of SW 208th Street or adjacent to the north of the SW 206th Street corridor (SW 206th Street does not yet exist in this area). The permanently inundated former borrow pit, excavated in Miami oolite rock, is rectangular in shape with high, steep side slopes. This feature is approximately 100 feet in width and approximately 290 feet in length with approximately 60 feet of the eastern portion situated within the study corridor. Agricultural land utilized for row crops borders this surface water feature to the south. Land utilized by an ornamental plant nursery borders the former borrow pit to the north and west. No surface water connections to nearby wetlands or other surface water areas exist; therefore, SW-1 can be considered as an isolated feature. The steep side slopes are densely vegetated with non-indigenous plant species that protrude over the water's edge such as Brazilian pepper (*Schinus terebinthifolius*), Australian pine (*Casuarina equisetifolia*), Brazilian jasmine (*Jasminum fluminense*), elephantgrass (*Pennisetum purpureum*), Noyau vine (*Merremia dissecta*), and Santa Maria feverfew (*Parthenium hysterophorus*). Other important components of the vegetation cover of the steep-sided slopes include possum grape (*Cissus incisa)*, muscadine (*Vitis rotundifolia*), and Virginia creeper (*Parthenocissus quinquefolia*).

No submergent or emergent hydrophytic vegetation was observed within the borrow pit with the exception of an individual giant leather fern (*Acrostichum danaeifolium*) observed at the water's edge along the eastern shoreline. Use of the site by wildlife was evidenced by the observation of a large number of cattle egrets (*Bubulcus ibis*) loafing in the vegetation overhanging the borrow pit, two green herons (*Butorides virescens*) observed foraging, several basking red-eared sliders (*Trachemys scripta elegans*), and several apparent unidentified tilapia nest depressions. This system is typical of abandoned limerock mining pits in the area.

Canals (SW-2 and SW-3)
FLUCFCS – 510 (Streams & Waterways)
USFWS – R2UBHx (Rock Rubble Bottom, Permanently Flooded, Excavated)

The C-102/Princeton canal (SW-2) and the C-103/Mowry canal (SW-3) are permanently-inundated drainageways with steep side slopes excavated in Miami oolite rock. In the vicinity of the project, both canals are located in areas primarily utilized for agricultural purposes with limited amount of low-density residential usage. Both canals, operated and maintained by the SFWMD, function to drain flood waters, recharge groundwater, and maintain fresh groundwater head elevation adequate to inhibit saltwater intrusion with eventual discharge to Biscayne Bay to the southeast through several downstream water control structures. Note that the portion of these waterways within the project study area are not categorized as Outstanding Florida Waters since the project location lies upstream of the SFWMD's salinity control structures [S-21A (C-102) and S-20F (C-103)].

Vegetation on the upland canal banks, which are regularly mowed by the SFWMD, includes weedy ruderal herbaceous species typical of regularly mowed non-wetland areas in southern Miami-Dade County. The steep side slopes of both canals in the vicinity of the proposed project offer little or no littoral habitat for the establishment of emergent hydrophytic vegetation. Submergent vegetation in the C-102/Princeton canal is dominated by Carolina fanwort (*Cabomba caroliniana*). Torpedo grass (*Panicum repens*) was also observed in the C-102/Princeton canal extending a short distance waterward from the shoreline around the dual-pipe culvert on the east side of Krome Avenue. Submergent vegetation in the C-103/Mowry canal is dominated by hydrilla (*Hydrilla verticillata*), Indian swampweed (*Hygrophila polysperma*), and creeping primrosewillow (*Ludwigia repens*). Both man-made canal systems provide moderate to low habitat value for resident and migratory wildlife species. Wildlife use was evidenced by observations of a foraging great blue heron (*Ardea herodias*) and two green herons, several basking red-eared sliders, and several unidentified exotic fish species in the canals. A dead, approximate six-foot alligator, wrapped in rope, was also observed within the C-102/Princeton canal on the east side of Krome Avenue during the field survey conducted on May 20, 2004.

Figure 3-11a – Surface Water Location Map (Former Borrow Pit – SW 1)

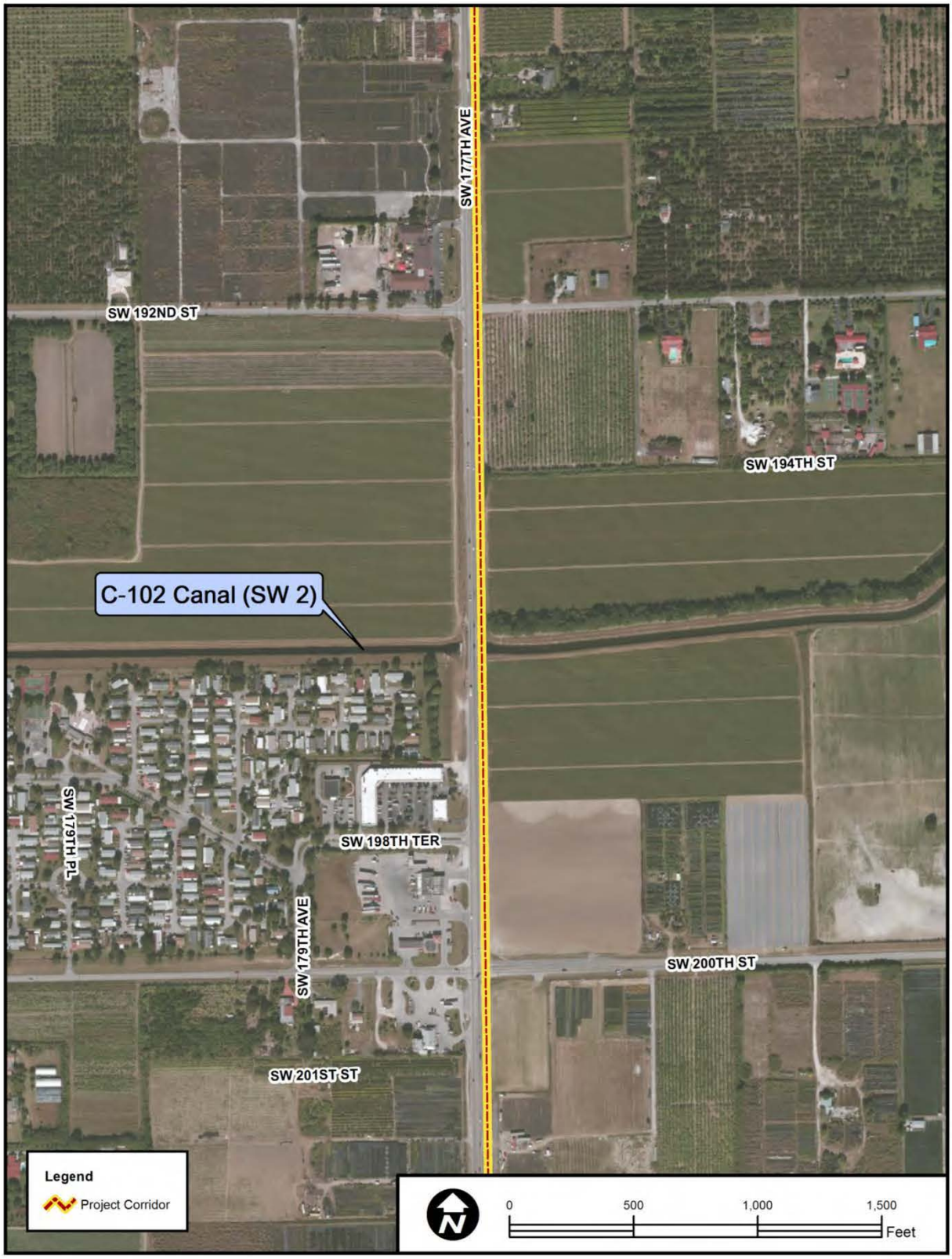


Figure 3-11b – Surface Water Location Map (C-102 Canal – SW 2)

Figure 3-11c – Surface Water Location Map (C-103 Canal – SW 3)

3.3.6 Water Quality

Water Quality Impact Evaluation

In accordance with the FDOT *PD&E Manual*, Part 2, Chapter 20 – Water Quality (dated February 25, 2004), a Water Quality Impact Evaluation has been conducted for this project.

Biscayne Aquifer

Miami-Dade County, including the project area, is underlain by the Biscayne Aquifer system, the sole source of potable water for most of southeastern Florida. This aquifer is a surficial, unconfined aquifer, which extends from the ground surface to a depth of more than 300 feet along the coast. The depth to groundwater fluctuates from two to three feet above mean sea level (msl) during the wet season to one foot above msl during the dry season. Recharge of the aquifer is through infiltration of precipitation and surface water. Since the aquifer is surficial, the groundwater within it can be affected by various land uses.

The Miami-Dade County Wellfield Protection Program protects the aquifer by restricting land uses within the vicinity of the public wellfields. The project corridor does not intersect with any wellfield protection areas. The project corridor is located up-gradient of the following Miami Dade County wellfields:

- South Miami Wellfields
- Naranja Park
- Homestead Air Force Base
- Leisure City

Stormwater Management

The existing stormwater management system along the Krome Avenue corridor is inadequate, consisting of direct offsite discharge via overland flow from the embankment. A few intermittent roadside dirt swales/depressional areas exist; however, no formal water quality facilities occur along the corridor. There are also a few isolated systems constructed by off-site developments which are typically found at the larger intersections along the study corridor. The existing soil infiltration rates range from good to excellent allowing these systems to retain the contributing runoff onsite without any overflow. However, since stormwater treatment or peak attenuation is not provided throughout the corridor, Miami-Dade County and SFWMD water quality/quantity treatment standards are not being met. Proposed improvements within the Krome Avenue corridor need to address water quality and water quantity for pre-treatment of runoff, thereby improving overall regional water quality.

3.3.7 Outstanding Florida Waters

Two canals exist within the study corridor, the C-102/Princeton Canal and the C-103/Mowry Canal. Both canals, operated and maintained by the SFWMD, function to drain flood waters, recharge groundwater, and maintain fresh groundwater head elevation adequate to inhibit

saltwater intrusion with eventual discharge to Biscayne Bay to the southeast through several downstream water control structures. The portions of these waterways within the study area are not categorized as Outstanding Florida Waters since the project location lies upstream of the SFWMD's salinity control structures [S-21A (C-102) and S-20F (C-103)]. Therefore, the proposed project does not involve any Outstanding Florida Waters as defined in Chapter 62-302, FAC.

3.3.8 Contamination

A contamination screening evaluation was performed to evaluate potential impacts from contaminated sites to the project and a *Contamination Screening Evaluation Report* (CSER) was prepared pursuant to the FHWA's *Technical Advisory T 6640.8A* and in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 12 – Contamination Impacts (dated January 17, 2008). A copy of the CSER is available for review at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

A review of all available data occurred in both 2006 and again in 2011, including agency file reviews at the Miami-Dade County Department of Environmental Resources Management (DERM), the Florida Department of Environmental Protection (FDEP), Environmental Data Resources, Inc. agency database search, city directories, Sanborn Fire Insurance Company maps, and aerial photography. In addition, a field reconnaissance was conducted in 2006 and again in 2011 to identify contamination concerns including the presence of detectable odors, discolored water, stained soil/grass, sheens or product in storm water structures, dead vegetation, air strippers, vent pipes, abandoned tanks, drums, and storage tanks. The field reconnaissance also served to confirm current business address listings and site conditions.

After a review of all available data referenced above, 12 sites of potential contamination concern were identified for the Krome Avenue study corridor: four sites rated as High risk, seven sites rated as Medium risk, and one site rated as Low risk. Remaining sites listed in the Environmental Data Resources, Inc. report are not considered a potential contamination concern either because of the current regulatory status of the site, the site's location/distance from the study corridor and/or because the site is down-gradient/cross-gradient with respect to the Krome Avenue study corridor. Additionally, the corridor is located up-gradient of the Redlands/Leisure City Brownfields area. The 12 identified potential contamination concerns are summarized in ***Table 3-6*** and shown in ***Figures 3-12*** through ***3-12g***.

3.3.9 Wild and Scenic Rivers

There are no designated wild and scenic rivers in the study area, as defined by the Wild and Scenic Rivers Act [16 U.S. Code (USC) 1271-1287].

Table 3-6 – Areas of Potential Contamination Concerns

Site ID	Property Description	Permit/ Facility ID#	Environmental Compliance Agency	Regulated Storage Tanks	Distance from Right-of-Way	Contamination Concern / Regulatory Status
High Risk Sites (H)						
H-1	Exxon Krome 19900 SW 177th Avenue	13-8841197	FDEP/ DRER EMRD	Yes	Adjacent on West	Petroleum – LUST Site/ Currently undergoing Monitoring Only Plan
H-2	Krome Gas 24791 SW 177th Avenue	13-8838498	FDEP/ DRER EMRD	Yes	Adjacent on east	Petroleum – LUST Site/ Currently undergoing assessment
H-3	Grove Services 25100 SW 177th Avenue	13-8504784	FDEP/ DRER EMRD	Yes	Adjacent on West	Petroleum – LUST Site/ Entered in the state program. No activity at the current time
H-4	Corrina's 27200 SW 177th Avenue	13-8506372	FDEP/ DRER EMRD	Yes	Adjacent on West	Petroleum – LUST Site/ Currently undergoing assessment and remedial action
Medium Risk Sites (M)						
M-1	Tom Thumb Food Store #122 23200 SW 177th Ave	13-8628788	FDEP/ DRER EMRD	Yes	Adjacent on West	Petroleum – LUST Site/ Received Site Rehabilitation Completion Report
M-2	Tom Thumb Food Store #127 18400 SW 177th Avenue	13-9502714 UT0003676	FDEP/ DRER EMRD	Yes	Adjacent on West	UST-No violations
M-3	Chevron 231500 SW 177th Avenue	13-9806295	FDEP/ DRER EMRD	Yes	Adjacent on West	UST-No violations
M-4	Tom Thumb 24790 SW 177th Avenue	13-9805056	FDEP	Yes	Adjacent on West	UST-No violations
M-5	Chevron 24800 SW 177th Avenue	13-8622114	FDEP/ DRER EMRD	Yes	Adjacent on West	Petroleum/Registered LUST – Currently undergoing contamination assessment activities
M-6	Sunoco 26400 SW 177th Avenue	13-9804112	FDEP	Yes	Adjacent on East	UST-No violations
M-7	Shell-Glades Country Store 17695 SW 272nd Street	13-9808581	FDEP/ DRER EMRD	Yes	Adjacent on East	UST – Minor violations
Low Risk Sites (L)						
L-1	Additional Concern #1 (Plant Nurseries)	N/A	DRER EMRD	No	Both Sides Adjacent to Corridor	Pesticides/Herbicides

* LUST – Leaking Underground Storage Tank; UST – Underground Storage Tank.

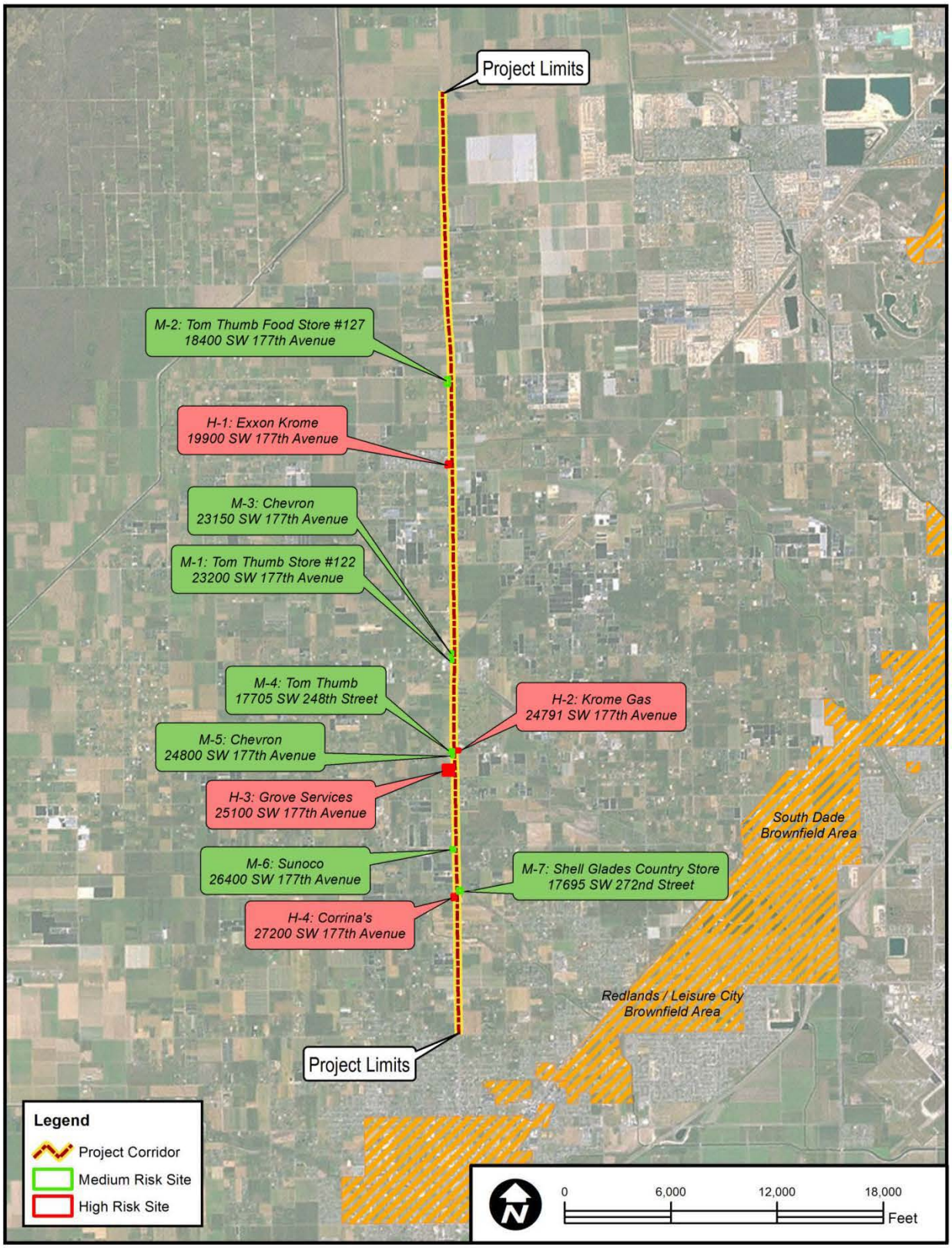


Figure 3-12 – Location of Potential Contamination Concerns

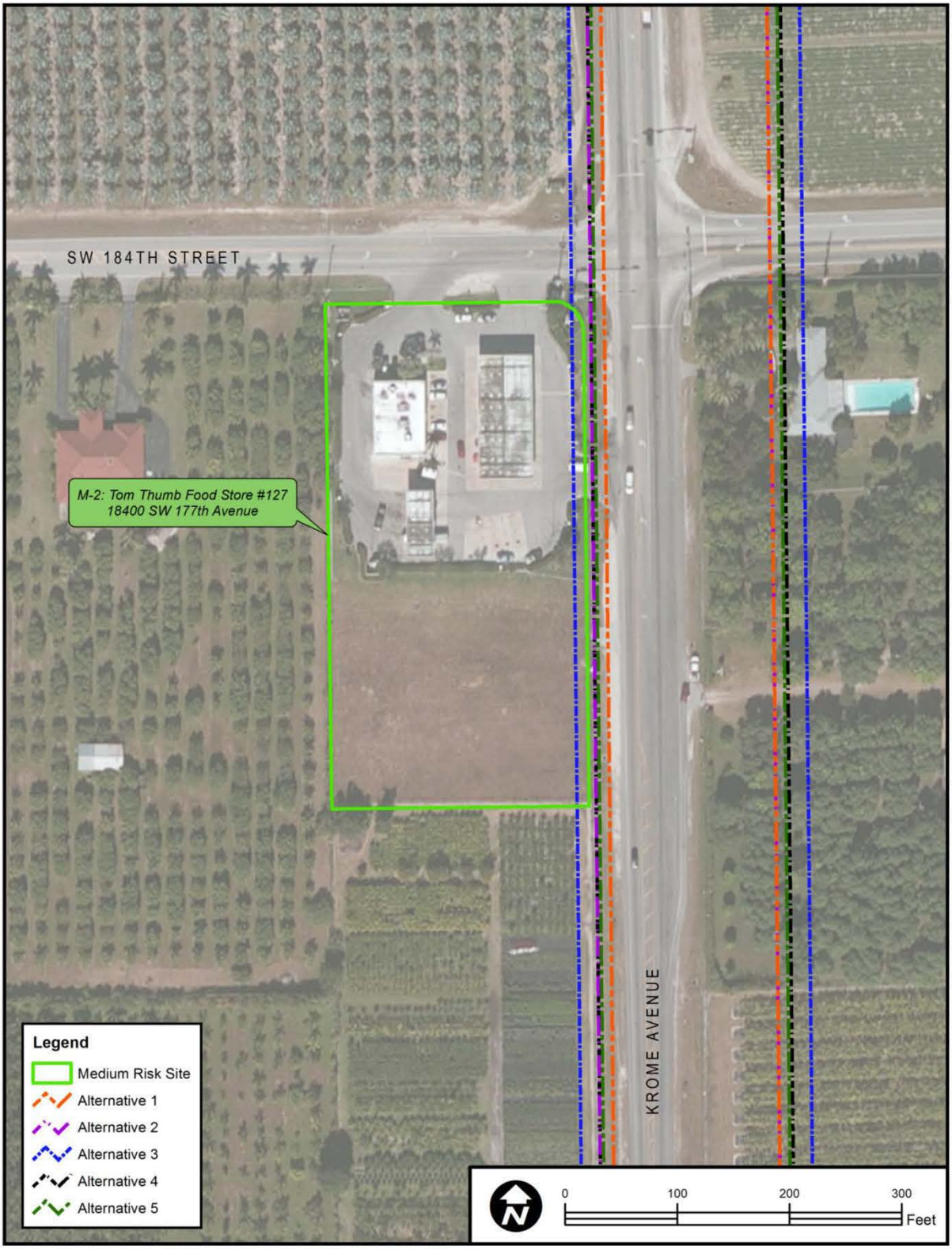


Figure 3-12a – Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives

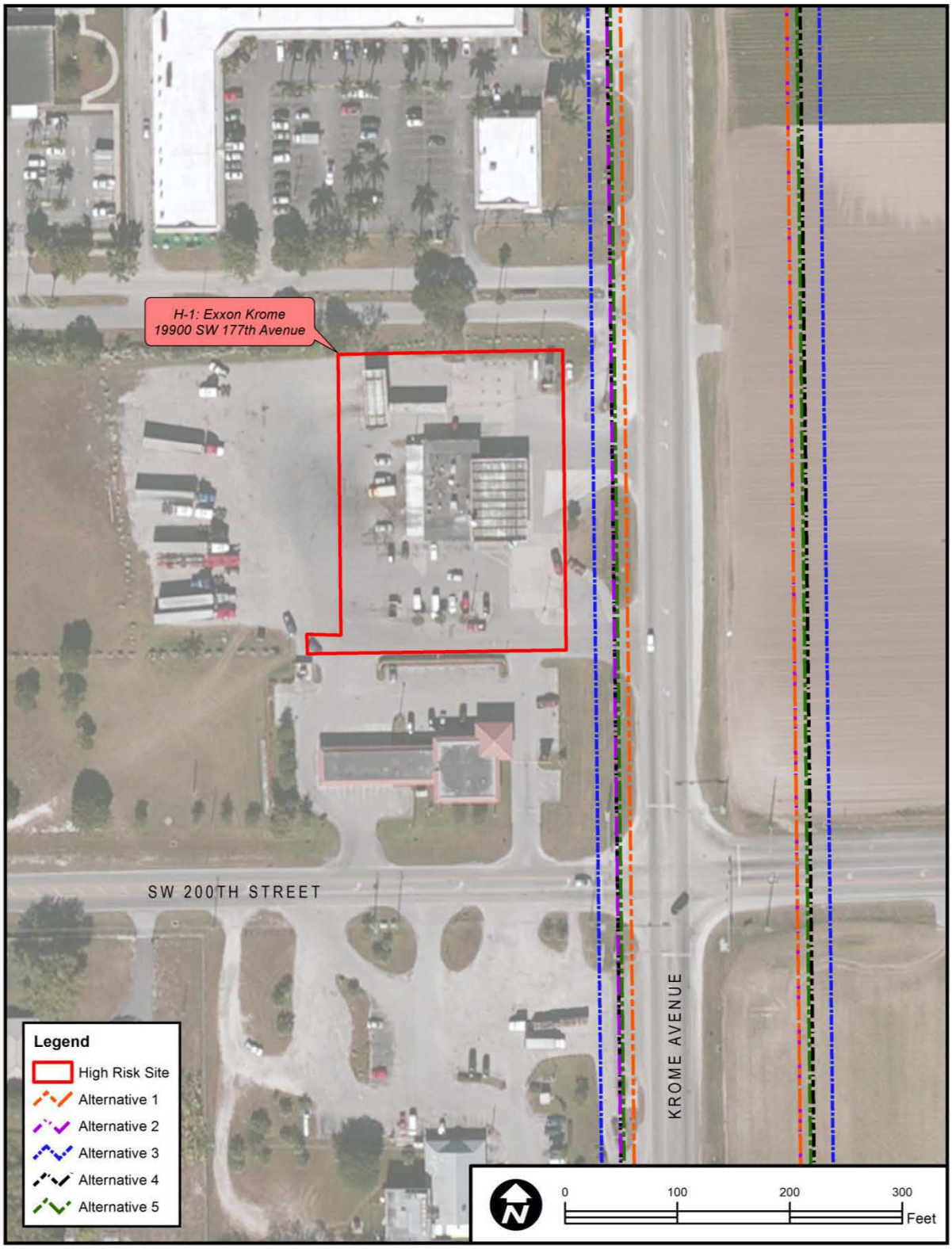


Figure 3-12b – Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives

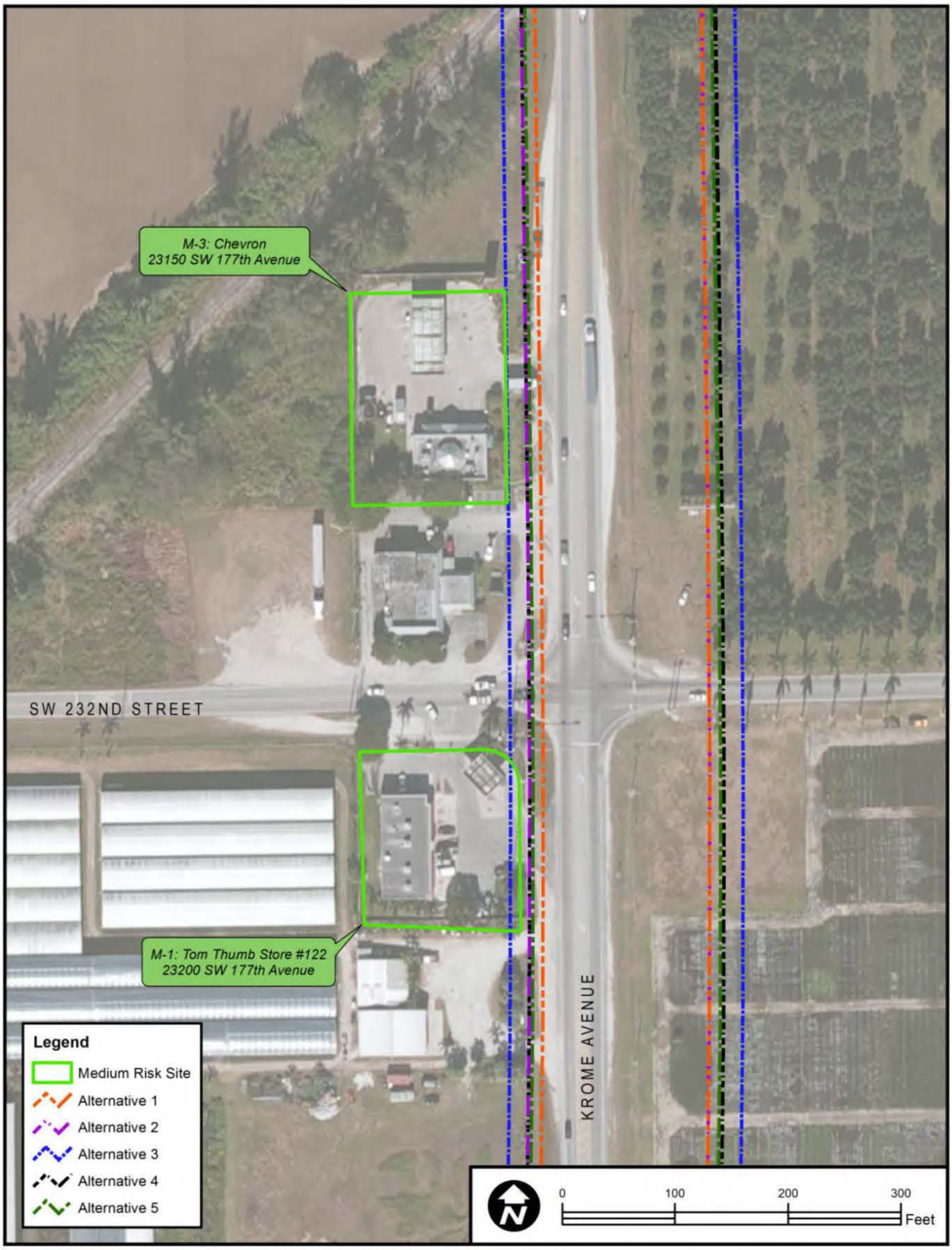


Figure 3-12c – Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives

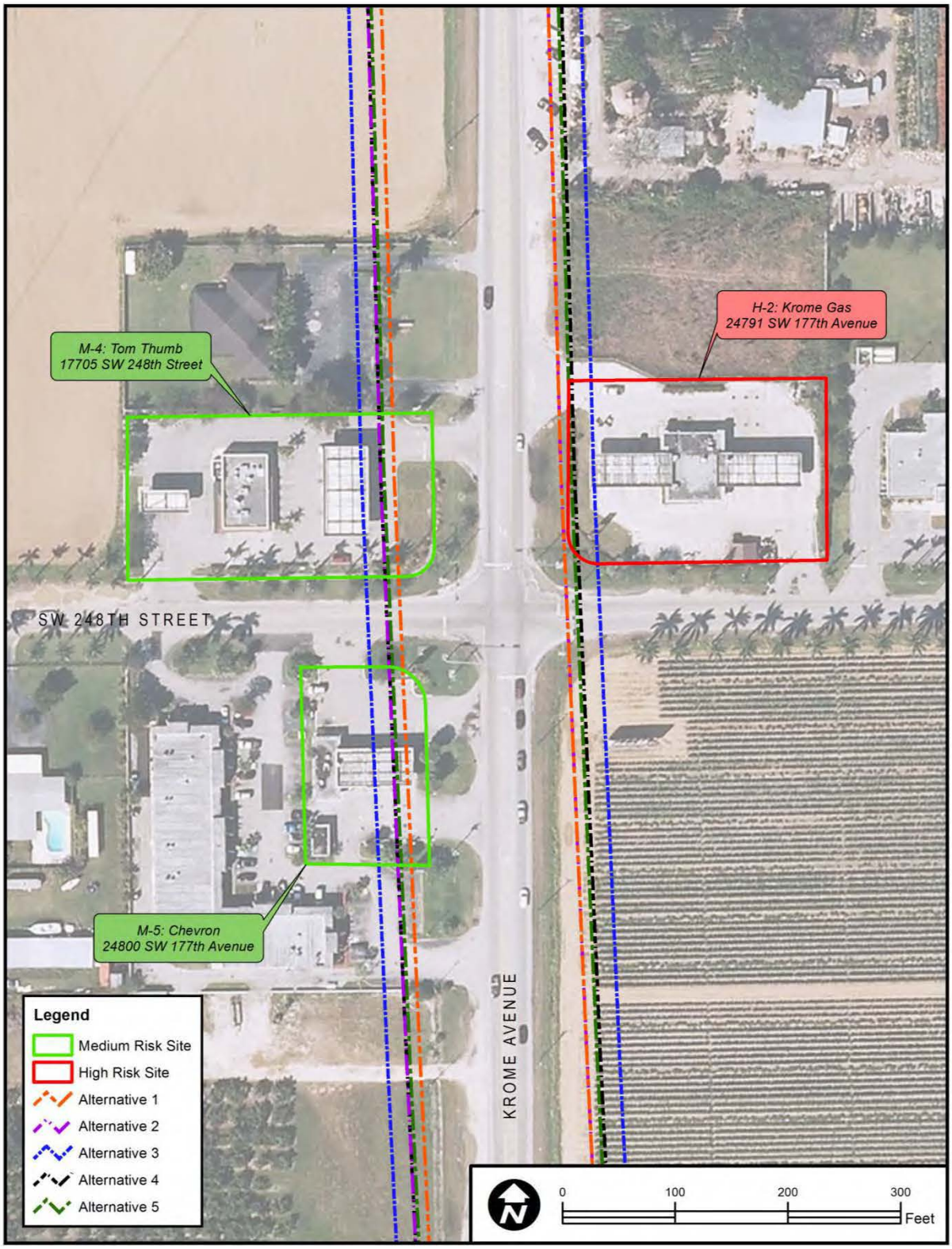


Figure 3-12d – Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives

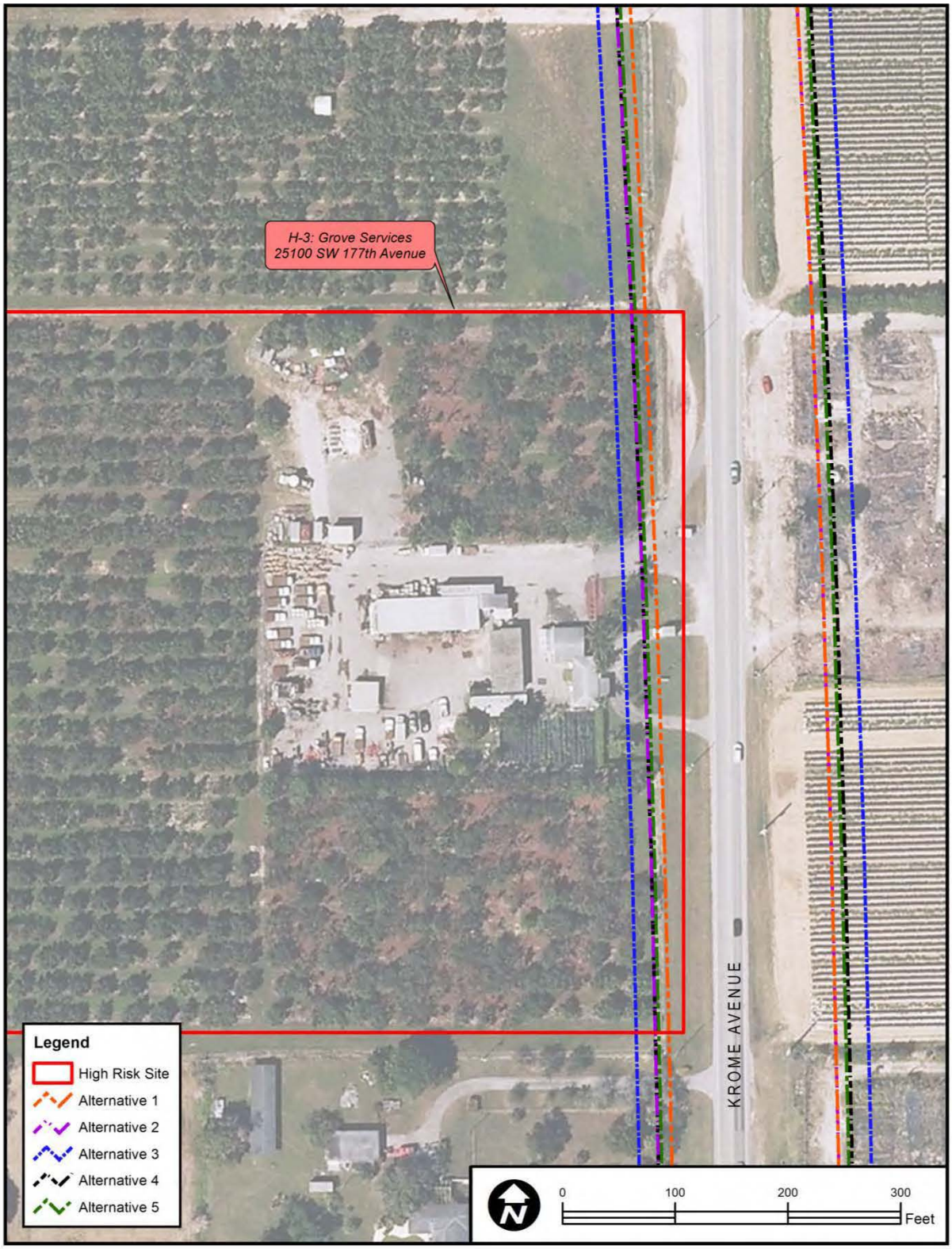


Figure 3-12e – Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives

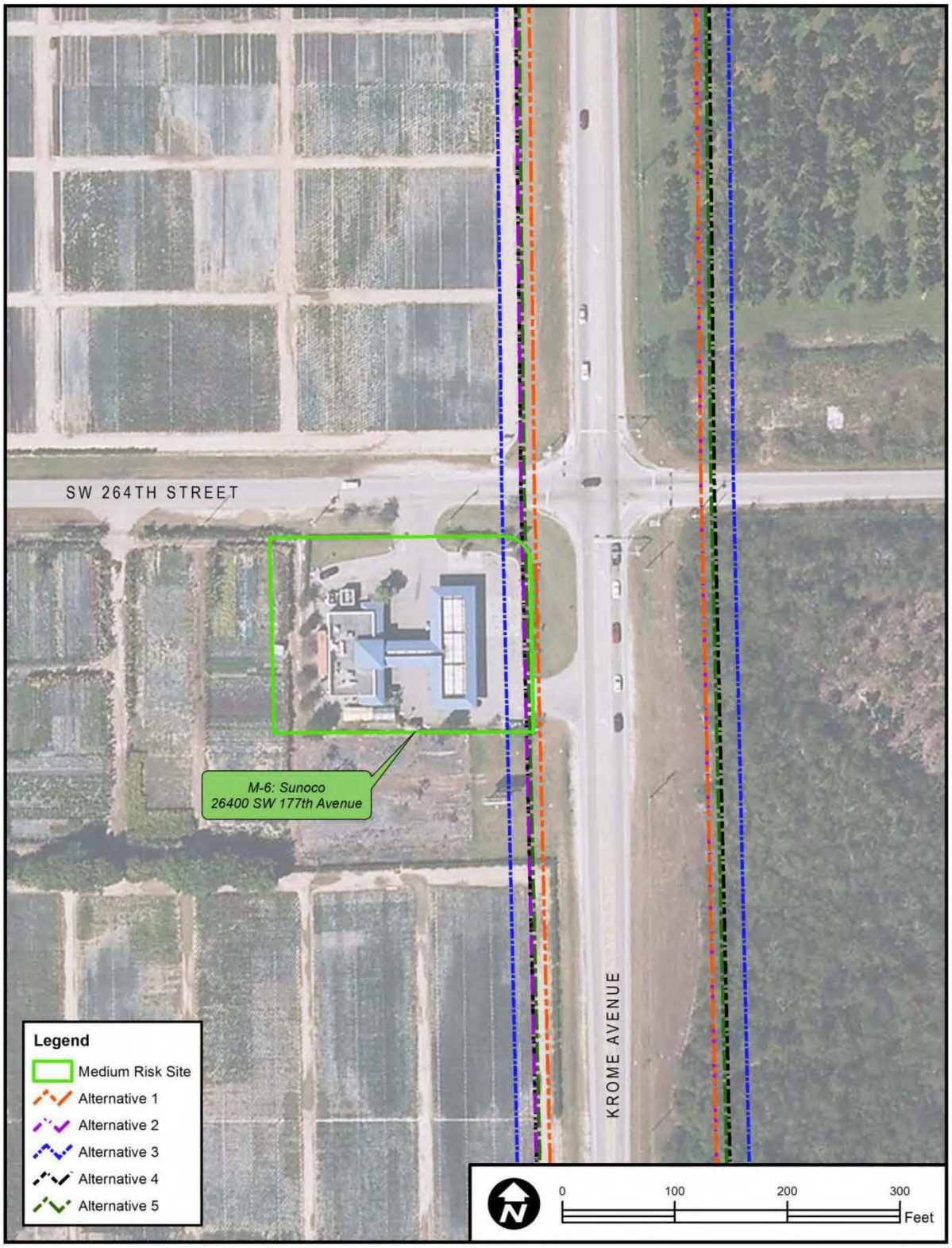


Figure 3-12f – Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives

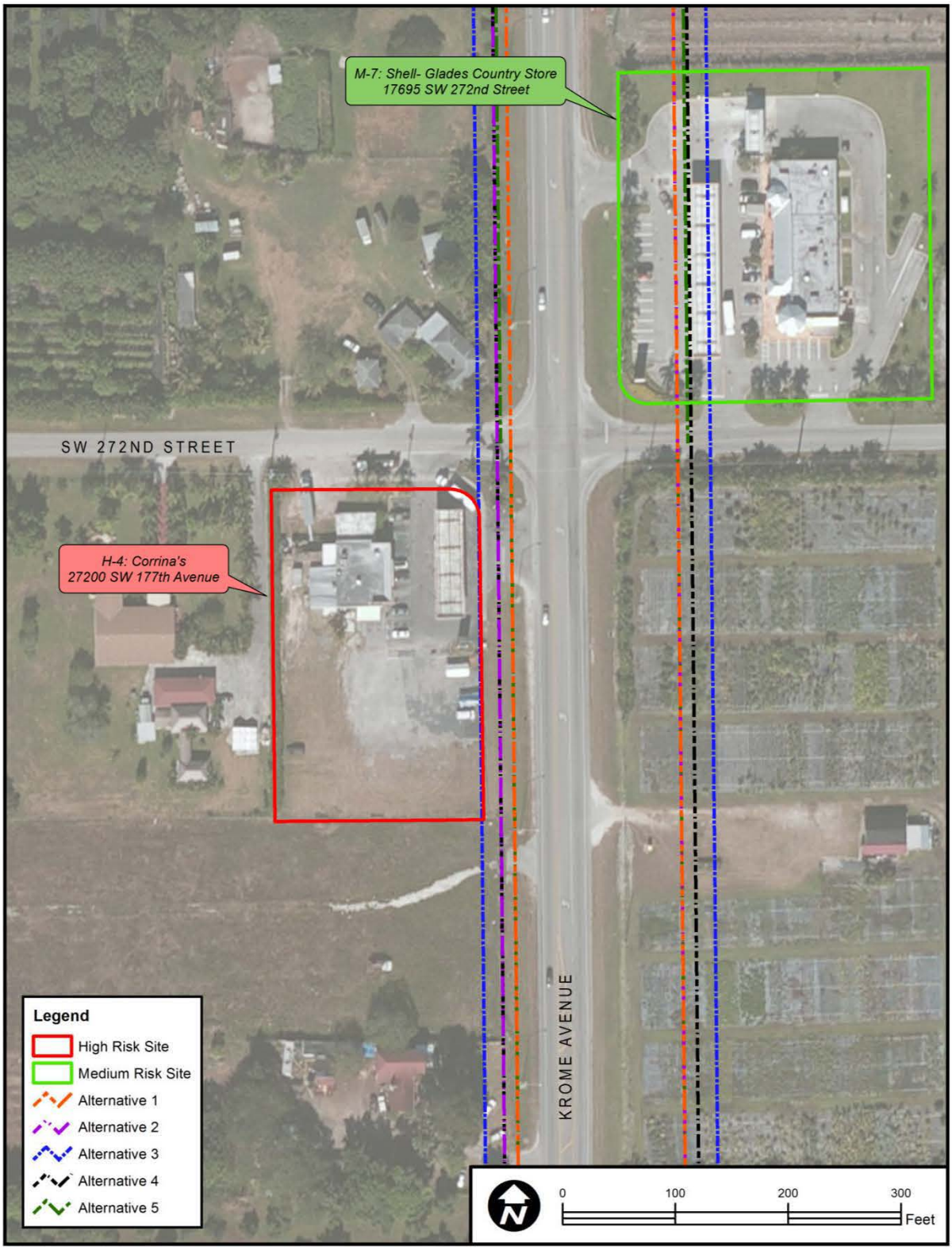


Figure 3-12g – Location of Potential Contamination Concern(s) and Proximity to Proposed Build Alternatives

3.3.10 Floodplains

Pursuant to Presidential Executive Order 11988, entitled "Floodplain Management," U.S. Department of Transportation (USDOT) Order 5650.2, and Chapter 23, CFR 650A, and in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 24 – Floodplains (dated January 7, 2008), the project alternatives were analyzed for potential floodplain impacts. Floodplain impacts were incorporated into the WER prepared for this project, which is available on file at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

According to the revised 2012 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Community Panels 12086C0440L, 12086C0580L, 12086C0590L and 12086C0726L), most of the study corridor falls intermittently within Zones AH and X with the exception of a portion just south of the northern project terminus (east side) that falls within Zone 0.2 pct Annual Chance Flood Hazard. Four FIRM panels illustrate the flood hazard potential along the study corridor. Zone AH is a special flood hazard area inundated by a 100-year flood event, with flood depths of one to three feet and characterized by areas of ponding. Areas along the study corridor have also been designated as Zone X, which is an area determined to be outside of the 100-year floodplains, areas of 100-year sheet flow flooding where average depths are less than one foot, areas of 100-year stream flooding where the contributing drainage area is less than one square mile, or areas protected from the 100-year flood by levees. Areas designated as Zone 0.2 pct Annual Chance Flood Hazard are characterized as areas inundated by 0.2% annual chance flooding. No base flood elevations or depths are shown in the data collected within this zone for the study corridor.

The FEMA 100-year Base Flood Elevation varies throughout the length of the project from Elevation 8.00 NGVD to Elevation 10.00 NGVD. A map showing the FEMA FIRM Zones and associated FEMA 100-year Base Flood Elevations is provided as ***Figure 3-13***.

3.3.11 Coastal Zone Consistency

In accordance with the FDOT *PD&E Manual*, Part 2, Chapter 25 – Coastal Zone Consistency (dated April 12, 2011), this project was reviewed by the FDEP for consistency with the Florida Coastal Management Program.

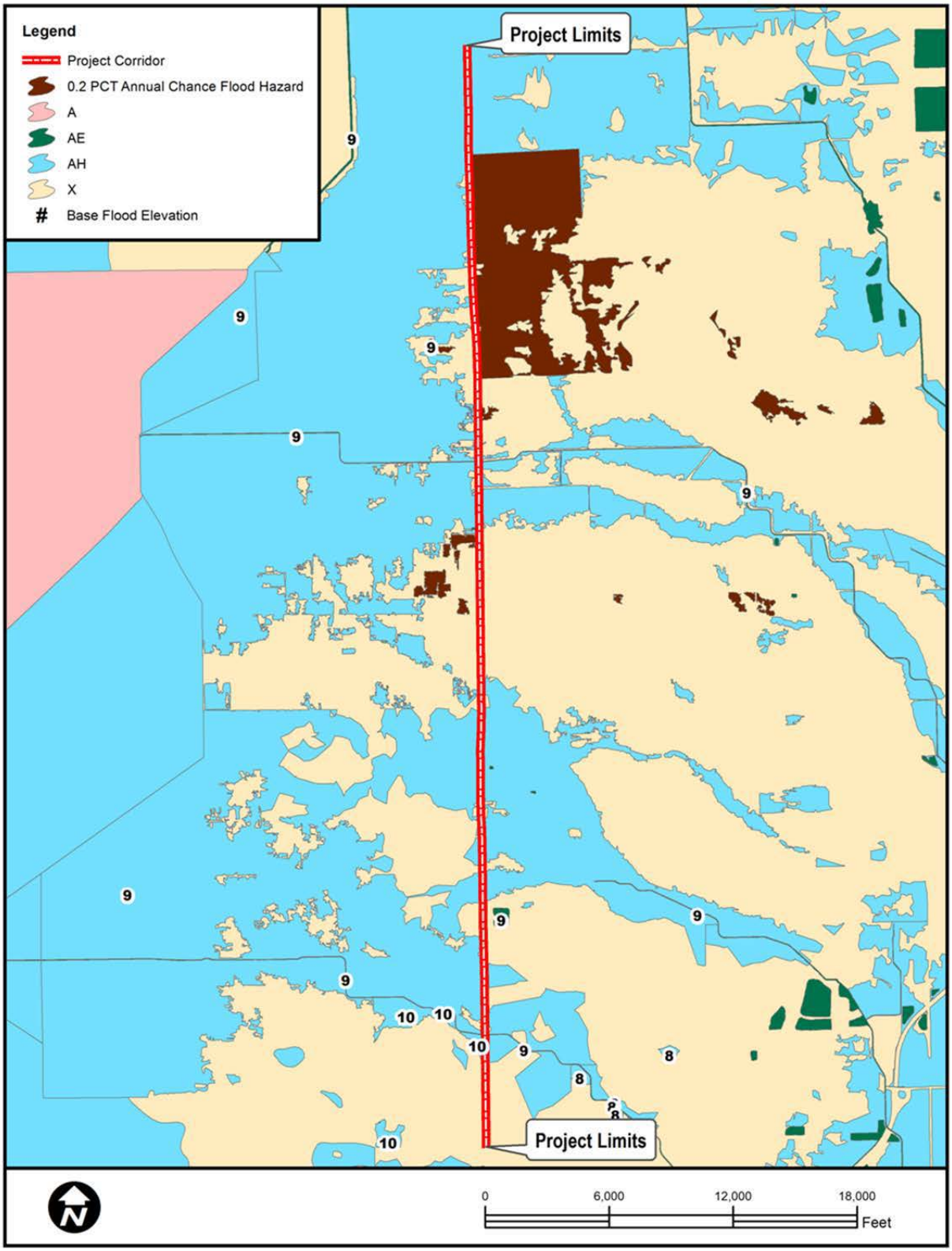


Figure 3-13 – Federal Emergency Management Agency Flood Insurance Rate Map Zones and Federal Emergency Management Agency 100-year Base Flood Elevations

3.3.12 Wildlife and Habitat

This project has been evaluated for potential impacts to threatened and endangered species in accordance with Section 7(c) of the Endangered Species Act of 1973, as amended, and Chapter 68A-27, FAC, "Rules Pertaining to Endangered and Threatened Species." In accordance with the FDOT *PD&E Manual*, Part 2, Chapter 27 – Wildlife and Habitat Impacts (dated October 1, 1991), an *Endangered Species Biological Assessment* (ESBA) was prepared for this project, which is available for review at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

Since the original preparation of the ESBA conducted as part of the Krome South project, new information became available in relation to two species with the potential to occur within the Krome South study corridor – the Florida bonneted bat and Carter's small-flowered flax. Additionally, comments were received in reference to the Florida panther during the *Draft Environmental Impact Statement* public comment period for the project. Therefore, a supplemental existing conditions and impact analysis were conducted for these three species, which were incorporated into an *ESBA Supplemental Memorandum*, which is available for review at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

Vegetative communities within the project study area were evaluated in order to assess the Krome Avenue study area for the potential occurrence of federal and state-listed protected species (flora and fauna). The composition of each natural community type was determined using published data and field reviews. The approximate boundaries of upland and wetland communities were mapped in GIS on aerial photography. Each community type was then classified using the FDOT's FLUCFCS (FDOT, 1999) and the U.S. Fish and Wildlife Service (USFWS) *Classification of Wetlands and Deepwater Habitats of the U.S.* (Cowardin, et. al., 1979), where applicable.

Biologists familiar with Florida community types conducted nine field investigations of the Krome Avenue study corridor between February 7, 2004, and February 7, 2014. The first investigation was conducted on February 7, 2004, to locate survey points (stationary observation stations and transects) for observing wildlife activity and the availability of existing resources (e.g., food sources, nesting areas). The second and third events were performed on March 3 and March 4, 2004, respectively, to conduct the pre-dawn to post-dusk wildlife surveys at the predetermined locations along the study corridor. The predetermined locations were located at the convergence of two or more communities to maximize the potential diversity of observed wildlife. One survey station was located at each of the following locations: the C-102/Princeton Canal which crosses Krome Avenue at approximately SW 196th Street, the C-103/Mowry Canal which crosses Krome Avenue just north of SW 280th Street, an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street, a railroad crossing near SW 232nd Street, the Miami-Dade County EEL Program's Owaissa Bauer Pineland Preserve Addition No. 1 site located in the southeast quadrant of the intersection of Krome Avenue and SW 264th Street, and the Florida Audubon Society property (a privately-owned and unmarked parcel) located on the west side of the southern end of the Krome Avenue study corridor just north of SW 296th Street. The fourth investigation occurred on May 20, 2004, to locate and delineate any wetland/surface water areas which have the potential to be impacted by

the proposed project alternatives. The fifth field investigation took place on June 9, 2004, to characterize the identified upland areas along the approximate ten-mile study corridor. During these investigations, the preliminarily–defined community type boundaries and FLUCFCS/USFWS classification codes established through the literature reviews and aerial photograph interpretations were verified and/or refined. The sixth field investigation occurred in November 2010 for the purpose of reassessing the potential encroachment area within the limits of each build alternative at the Owaissa Bauer Pineland Preserve Addition No. 1 site and to field verify if any changes have occurred to the previously assessed habitat conditions since the 2004 surveys were conducted. The seventh field investigation was a biological survey was conducted in January 2012, to assess the potential encroachment area within the limits of the Florida Audubon Society property. The eighth field investigation for the project was conducted on February 7, 2014, at the request of the USFWS to determine the number of royal palms with potential habitat for the Florida bonneted bat (*Eumops floridanus*) proposed to be impacted by the preferred alternative (Alternative 5). The ninth and final field investigation was conducted on October 3, 2014, at the Owaissa Bauer Pineland Preserve Addition No. 1 site along the project corridor for the purpose of identifying any signs of the Bartram's scrub-hairstreak or Florida leafwing butterflies or their host plant (pineland croton).

The study corridor was evaluated by direct observation for its potential to provide habitat for wildlife species based on the availability of existing resources (e.g., food sources, nesting areas, etc.). A comprehensive listing of plant taxa observed within the identified biotic communities along the study corridor is provided in the ESBA prepared for this project. Due to the potential presence of protected plant species at the Owaissa Bauer Pineland Preserve Addition No. 1 site and the Florida Audubon Society property, separate plant surveys were conducted at these sites, the results of which are discussed in ***Section 3.3.12.5*** and ***Section 3.3.12.6***, respectively.

3.3.12.1 Upland Communities

Four upland vegetative community types were identified along the Krome Avenue study corridor. The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad-rights-of-way). A few sites along the corridor are comprised of communities dominated by one or more non-native invasive species in which the original native natural community was impacted by human activities and/or competitively eliminated by invasive non-native vegetation. The Florida Audubon Society property is located on the west side of the southern end of the proposed study corridor just north of SW 296th Street. This privately-owned unmarked parcel is recognized by the Florida Audubon Society as a private bird watching location. The parcel contains planted rockland and coastal upland hammock species used to attract birds and butterflies to the area for viewing. In addition, an ecologically important 9.39-acre pine rockland community known as Owaissa Bauer Pineland Preserve Addition No. 1, which is administered by the Miami-Dade County EEL Program, exists along the study corridor in the southeast quadrant of the intersection of Krome Avenue and SW 264th Street. Wildlife species that would potentially utilize these habitats are discussed in subsequent sections of this document.

3.3.12.2 Wetland / Surfacewater Communities

Wetland surveys of the project study area were conducted by project biologists in 2004 and 2010. No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the U.S., as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area. This includes natural wetland communities as well as swales or other manmade stormwater features. However, three areas identified as surface waters consisting of two community types were identified and assessed. These areas consist of an inundated rock mining pit (borrow pit) (SW-1) excavated in Miami oolite rock located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMD's C-102/Princeton canal (SW-2) which crosses Krome Avenue at approximately SW 196th Street; and the SFWMD's C-103/Mowry canal (SW-3) which crosses Krome Avenue just north of SW 280th Street. These features are also discussed in ***Section 3.3.5***.

3.3.12.3 Other Notable Upland Communities in Close Proximity to the Project

Other notable upland communities exist within close proximity to the Krome Avenue study corridor which may contribute to the potential presence of listed wildlife species along the study corridor. These include the following:

- Camp Owaissa Bauer (including the Everglades Archery Range) (discussed in ***Section 3.2.3***)
- Owaissa Bauer Pineland Preserve Addition No. 1 (discussed in ***Section 3.3.12.5***) - Owaissa Bauer Pineland Preserve Addition No. 1 is a 9.39-acre Miami-Dade County EEL parcel located along Krome Avenue in the southeast quadrant of the intersection of Krome Avenue and SW 264th Street. Several native, protected pineland plants are located on this site. Due to the sensitive protected plant resources located on this site, plant surveys and coordination were conducted, which are discussed in ***Section 3.3.12.5***.
- Owaissa Bauer Pineland Preserve Addition No. 2 - Owaissa Bauer Pineland Preserve Addition No. 2 is a 10.0-acre Miami-Dade County EEL site located along SW 264th Street approximately 700 feet east (south of SW 264th Street) of the Krome Avenue study corridor. This area is contiguous to the east of the Owaissa Bauer Pineland Addition No. 1 parcel and several native, protected pineland plants are located on this site.
- Owaissa Bauer Pineland Preserve Addition No. 3 - Owaissa Bauer Pineland Preserve Addition No. 3 is a 1.25-acre Miami-Dade County EEL site located approximately 3,300 feet east (north of SW 264th Street) of the Krome Avenue study corridor. This area is not contiguous to the Owaissa Bauer Pineland Preserve Addition No. 1 or No. 2 parcels; however, this area is contiguous to the northeast of the Camp Owaissa Bauer site. Several native, protected pineland plants are located on this site.
- Local Parks – Oak Creek Park, Kings Grant Park, and Redland Fruit and Spice Park (discussed in ***Section 3.2.3***)
- Miami Rockridge Pinelands (including Ingram Pineland) - The Miami Rockridge Pinelands (including Ingram Pineland) are sites which are determined to be eligible for listing within the Dade County Archipelago Florida Forever Project. The Dade County Archipelago Florida Forever Project helps fund the public acquisition for conservation of privately owned subtropical pinelands and hardwood hammocks that remain in Miami-

Dade County. These parcels are located along the south side of SW 288th Street approximately 5,000 feet east of the Krome South project corridor. Several native pineland and mixed hardwood upland plants are located on this site.

- Florida Audubon Society property (privately-owned unmarked parcel) (discussed in ***Section 3.3.12.6***)

3.3.12.4 Protected Species and Habitats

In accordance with Section 7(c) of the Endangered Species Act of 1973, as amended, and Chapter 68A-27 FAC, "Rules Pertaining to Endangered and Threatened Species," the Krome Avenue study corridor was evaluated for the potential occurrences of federal and state-listed protected plant and animal species. Literature reviews, agency database searches and coordination, and habitat field reviews were conducted to identify protected species and any critical habitat that might occur within the study area.

Detailed pre-dawn to post-dusk wildlife surveys of the Krome Avenue corridor were conducted on March 3 and 4, 2004. The study corridor encompassed the existing Krome Avenue roadway right-of-way from SW 296th Street to SW 136th Street for approximately ten miles in Miami-Dade County, Florida. Please note that "wildlife" refers to birds, mammals, reptiles, amphibians, fish, and listed or otherwise notable macroinvertebrates (e.g. tree snails).

Additionally, agency coordination was conducted through the Advance Notification (AN) and Efficient Transportation Decision Making (ETDM) processes and directly with the FWC, the Florida Department of Agriculture and Consumer Services (FDACS), and the USFWS regarding protected plant and wildlife species. Agency coordination conducted for this project is also discussed in ***Section 5.2***. The USFWS and Florida Fish and Wildlife Conservation Commission (FWC) AN responses are included in ***Appendix H***. Additionally, the USFWS And FDACS coordination logs are included in ***Appendix I***.

Table 3-7 lists the federal and state-listed wildlife and plant species either observed during the surveys or having the potential to occur within the study corridor, based on availability of suitable habitat and known ranges. ***Table 3-7*** also provides the USFWS, FWC, and/or FDACS protection status for each species. Each species is given a rating of low, moderate, or high likelihood of occurring within the study corridor. Four protected mammal species, 12 protected bird species, five protected reptile species, one protected mollusk species, two protected butterfly species, and 48 protected plant species were identified as having the potential to occur within the project study corridor.

Table 3-7 – Listed Species Potentially Occurring Within the Project Study Corridor

Scientific Name	Vernacular Name	USFWS Status	FWC/ FDACS Status	Habitat Preference	Habitat Presence	Probability of Occurrence
Mammals						
Eumops floridanus	Florida bonneted bat	E	FE	Roosting preferences are shafts of royal palms, tree hollows and holes, and buildings (particularly barrel tile roofs)	No	Moderate
Podomys floridanus	Florida mouse		SSC	Xeric upland communities with sandy soils including scrub, sandhill, and ruderal sites where they inhabit burrows of the gopher tortoise	No	Low
Puma concolor coryi	Florida panther	E	FE	Upper dry land habitats such as hardwood hammocks, pine flatwoods, and thicket swamps near wetlands	No	Low
Trichechus manatus latirostris	West Indian manatee, Florida manatee	E	FE	Near-shore waters; canals; rivers; estuaries; and saltwater bays	Yes	Moderate
Birds						
Aramus guarauna	limpkin		SSC	Mangroves; freshwater marshes; swamps; springs spring runs; and pond and river margins	No	Low
Athene (=Speotyto) cunicularia floridana	Florida burrowing owl		SSC	Makes extensive use of ruderal areas such as pastures, airports, ball fields, parks, school grounds, road right-of-ways, and vacant spaces in residential areas	Yes	Low
Egretta caerulea	little blue heron		SSC	Feeds in shallow freshwater, brackish, and saltwater habitats; prefers foraging in freshwater lakes, marshes, swamps, and streams	No	Moderate
Egretta rufescens	reddish egret		SSC	Almost exclusively coastal. Nests on coastal mangrove islands or spoil islands	No	Moderate
Platalea ajaja	roseate spoonbill		ST	Nests in mixed-species colonies on coastal mangrove islands or spoil islands	No	Moderate
Egretta thula	snowy egret		SSC	Feeds in many types of flooded wetlands, streams, lakes, and swamps, and in impoundments and ditches; nesting almost always in areas separated from shoreline by extensive open water	Yes	Moderate
Egretta tricolor	tricolored heron		SSC	Feeds in variety of flooded wetlands, mangroves, tidal creeks, ditches, and edges of ponds and lakes; prefers nesting on islands or in trees over standing water	Yes	High

Table 3-7 – Listed Species Potentially Occurring Within the Project Study Corridor

Scientific Name	Vernacular Name	USFWS Status	FWC/ FDACS Status	Habitat Preference	Habitat Presence	Probability of Occurrence
Eudocimus albus	white ibis		SSC	Utilize a wide variety of habitats including marshes, salt flats and salt marsh meadows, seasonally inundated fields, and ditches	Yes	High
Falco sparverius paulus	southeastern American kestrel		ST	Preferred nesting sites are tall dead trees or utility poles with suitable cavities in open pine habitat	No	High
Haliaeetus leucocephalus[1]	bald eagle	NL	NL	Most commonly near bodies of water that provide concentrations of food sources; prefer tall trees (mostly live pines) providing clear views of surrounding area	No	Low
Mycteria americana	wood stork	T	FT	Foraging habitat shallow water in marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures, and ditches	No	Low
Rostrhamus sociabilis plumbeus	Everglade snail kite	E	FE	Large open freshwater marshes and lakes with shallow water	No	Low
Reptiles						
Alligator mississippiensis	American alligator	T(S/A)	FT(S/A)	Most permanent bodies of water	Yes	High
Drymarchon corais couperi	eastern indigo snake	T	FT	Broad range of habitats from mangrove swamps and wet prairies to xeric pinelands and scrub	Yes	Moderate
Tantilla oolitica	rim rock crowned snake, Miami black-headed snake		ST	Tropical hardwood hammocks; pine rocklands; vacant lots and pastures with shrubby growth and scattered slash pine	Yes	Moderate
Pituophis melanoleucus mugitus	Florida pine snake		SSC	Dry upland habitats, especially in sandhill, pastures, sand pine scrub and scrubby flatwoods.	Yes	Moderate
Gopherus polyphemus	gopher tortoise	C	ST	Dry upland habitats including sandhills, xeric oak hammock, and dry pine flatwoods. Excavate deep burrows in soft sand.	No	Low
Mollusks						
Liguus fasciatus	Florida tree snail		SSC	Tropical hardwood hammocks, rockland hammocks	Yes	High
Insects						
Bartram's scrub-hairstreak butterfly	*Strymon acis bartrami*	E	NL[2]	Pine rocklands that contain pineland croton	No	Low to None
Florida leafwing butterfly	*Anaea troglodyta floridalis*	E	NL[2]	Pine rocklands that contain pineland croton	No	Low to None
Plants						
Alvaradoa amorphoides	Everglades leaf lace; Mexican alvaradoa		E	Pine rocklands; rockland hammock transition zones	Yes (OBA)	Moderate

Table 3-7 – Listed Species Potentially Occurring Within the Project Study Corridor

Scientific Name	Vernacular Name	USFWS Status	FWC/ FDACS Status	Habitat Preference	Habitat Presence	Probability of Occurrence
Angadenia berteroi	pineland golden trumpet		T	Pine rocklands; marl prairies; disturbed uplands	Yes (OBA)	High
Argythamnia blodgettii	Blodgett's wild-mercury; Blodgett's silverbush	C	E	Pine rocklands; openings and margins of rockland hammocks; coastal rock barrens	Yes (OBA)	High
Bourreria cassinifolia	pineland strongbark; smooth strongbark; little strongbark		E	Pine rocklands	Yes (OBA)	Moderate
Brickellia mosieri	Mosier's brickell-bush; Mosier's false boneset	E	E	Pine rocklands; exposed limestone	Yes (OBA)	Low to None
Byrsonima lucida	Long Key locustberry		T	Pine rocklands and rockland hammocks	Yes (OBA)	High
Calyptranthes pallens	lid flower		T	Rockland hammocks and coastal berm habitats	Yes (FASP)	High
Calyptranthes zuzygium	myrtle-of-the-river		E	Rockland hammocks and coastal berm habitats	Yes (FASP)	High
Chamaesyce deltoidea spp. *deltoidea*	deltoid spurge; wedge sandmat; rockland spurge	E	E	Pine rocklands with scattered shrubs and exposed limestone	Yes (OBA)	High
Chamaesyce garberi	Garber's spurge	T	E	Sandy soils over limestone in pine rocklands; hammock edges; coastal rock barrens; coastal berms; grass prairies	Yes (OBA)	Moderate
Chamaesyce porteriana	Porter's spurge; Porter's sandmat		E	Pine rocklands; rockland hammocks; marl prairie; coastal rock barrens	Yes (OBA)	Moderate
Chaptalia albicans	white sunbonnet		T	Pine rocklands	Yes (OBA)	High
Colubrina cubensis var. *floridana*	Cuban snakebark; Cuban nakedwood		E	Edges of rockland hammocks; pine rocklands	Yes (OBA)	Moderate
Coccothrinax argentata	Florida silver palm		T	Pine rocklands; rockland hammocks; coastal strands	Yes (OBA)	High
Consolea (=Opuntia) *corallicola*	semaphore cactus	E	E	Buttonwood zone between rocklabnd hammock and coastal berm; coastal berms	Yes (FASP)	Low
Crossopetalum ilicifolium	christmasberry; quail-berry		T	Pine rocklands; rockland hammocks; coastal strands	Yes (OBA)	High
Dalea carthagenensis var. *floridana*	Florida prairie-clover		E	Pine rocklands; edges of rockland hammocks; coastal uplands; marl prairie	Yes (OBA)	Moderate
Ernodea cokeri	Coker's beach creeper		E	Pine rocklands	Yes (OBA)	Moderate
Eupatorium (=Koanophyllon) villosum	Florida Keys thoroughwort; Florida shrub thoroughwort		E	Pine woods; hammocks	Yes (OBA)	High
Galactia smallii	Small's milkpea	E	E	Redland pine rocklands with slash pine, saw palmetto, willow bustic and poisonwood	Yes (OBA)	Moderate

Table 3-7 – Listed Species Potentially Occurring Within the Project Study Corridor

Scientific Name	Vernacular Name	USFWS Status	FWC/ FDACS Status	Habitat Preference	Habitat Presence	Probability of Occurrence
Ipomoea microdactyla	man-in-the-ground; wild potato morning-glory		E	Pine rocklands	Yes (OBA)	Moderate
Ipomoea tenuissima	rockland morning-glory		E	Pine rocklands	Yes (OBA)	Moderate
Jacquemontia curtissii	pineland clustervine		T	Pine rocklands; marl prairie; spoil banks; mesic flatwoods	Yes (OBA)	Moderate
Jacquemontia pentanthos	skyblue clustervine		E	Pine rocklands; disturbed openings and edges of rockland hammocks; coastal rock barrens	Yes (OBA)	Moderate
Lantana depressa var. *depressa*	pineland lantana; rockland shrubverbena		E	Pine rocklands	Yes (OBA)	High
Linum arenicola	sand flax	C	E	Pine rocklands; marl prairie; adjacent disturbed areas	Yes (OBA)	Moderate
Linum carteri var. *carteri*	Carter's small-flowered flax	E	E	Mowed pine rocklands	Yes (OBA)	High
Myrcianthes fragrans	Simpson's stopper		T	Hammocks	Yes (OBA/ FASP)	High
Polygala smallii	tiny polygala, Small's milkwort	E	E	Pine rocklands; scrub, sandhills	Yes (OBA)	Moderate
Ponthieva brittoniae	Mrs. Britton's shadow witch		E	Pine rocklands	Yes (OBA)	Moderate
Prunus myrtifolia	West Indian cherry		T	Rockland hammocks	Yes (FASP)	High
Psidium longipes	long-stalked stopper, mangroveberry		T	Pine rocklands, rockland hammocks	Yes (OBA)	Moderate
Pteris bahamensis	Bahama ladder brake		T	Moist, well-drained limestone soils in pine rocklands	YES (OBA)	High
Pteroglossaspis ecristata	giant orchid		T	Sand pine scrub; sandhills; pine rocklands	Yes (OBA)	Moderate
Rhynchosia parvifolia	small-leaf snoutbean		T	Moist, well-drained limestone soils in pineland and scrub habitats	Yes (OBA)	High
Roystonea regia	Florida royal palm		E	Tropical hardwood hammocks, rockland hammocks, strand swamp and disturbed wetlands	Yes (FASP)	High
Sachsia polycephala	Bahama sachsia		T	Pine rocklands	Yes (OBA)	High
Savia bahamensis	Bahama maidenbush		E	Coastal hammocks; pine rocklands; tropical hammock margins	Yes (OBA)	Moderate
Senna mexicana var. chapmanii	Chapman's wild sensitive plant		T	Pinelands; edges of rockland hammocks	Yes (OBA)	High
Smilax havanensis	Everglades greenbrier		T	Pinelands; hammocks	Yes (OBA)	High
Spiranthes torta	southern ladies'-tresses		E	Pine rocklands; marl prairies	Yes (OBA)	Moderate
Stylosanthes calcicola	Everglades pencil-flower		E	Pine rocklands; marl prairies	Yes (OBA)	Moderate

Table 3-7 – Listed Species Potentially Occurring Within the Project Study Corridor

Scientific Name	Vernacular Name	USFWS Status	FWC/ FDACS Status	Habitat Preference	Habitat Presence	Probability of Occurrence
Swietenia mahagoni	West Indian mahogany		T	Pine rocklands, rockland hammocks and disturbed upland areas	Yes (FASP)	High
Tephrosia angustissima var. *angustissima* and *T. angustissima* var. *corallicola*	narrowleaf hoarypea and coral hoarypea		E	Pine rocklands	Yes (OBA)	Moderate
Tetrazygia bicolor	tetrazygia		T	Rockland hammocks; pinelands	Yes (OBA)	High
Tillandsia fasciculata var. densispica	cardinal airplant		E	Moist hammocks and swamps	Yes (OBA)	High
Tragia saxicola	Key West noseburn		T	Moist, well-drained limestone soils in pineland rocklands	Yes (OBA)	High
Zamia pumila	coontie		CE	Pine woods	Yes (OBA)	High

USFWS = U.S Fish and Wildlife Service – The federal lists of animals and plants are administered by the USFWS and categorized into endangered and threatened and are published in 50 CFR 17 (animals) and 50 CFR 23 (plants).
FWC = Florida Fish and Wildlife Conservation Commission – The state lists of animals are maintained by the FWC and categorized as Endangered, Threatened, and of Species of Special Concern contained in Chapter 68A-27, FAC, "Rules Pertaining to Endangered or Threatened Species."
FDACS = Florida Department Of Agriculture and Consumer Services – The state lists of plants are categorized into Endangered, Threatened, And Commercially Exploited and are administered and maintained by the FDACS via Chapter 5B-40 FAC.
E = Endangered
T = Threatened
FE = Federally Endangered
FT = Federally Threatened
(S/A) = Similarity of Appearance
ST = State Threatened
C = Federal Candidate for listing
CE = Commercially Exploited Plant List
NL = Not Listed
SSC = Species of Special Concern
OBA = Applicable only to a portion of the study corridor adjacent to Owaissa Bauer Pineland Preserve Addition No.1 tract south of SW 264th Street (Bauer Drive)
FASP = The Florida Audubon Society property is a privately-owned unmarked/undesignated two-acre parcel located along the west side of Krome Avenue just north of SW 296th Street/Avocado Drive (Miami-Dade County Folio Number 30-7801-000-0583)

[1] The bald eagle is not listed by the USFWS or FWC as a protected species, but this species is protected by the *Bald Eagle and Golden Eagle Protection Act* and the *Migratory Bird Treaty Act*.

[2] Bartram's scrub-hairstreak and Florida leafwing butterflies are not listed in the most current *Florida's Endangered and Threatened Species* list. However, since these two species were listed as endangered effective September 11, 2014, it is anticipated that the state listing of these species will be revised to federally endangered during the next revision of the list.

3.3.12.5 Designated Habitats

Critical Habitats

Critical habitat is a specific, federally-designated, geographic area that is essential for the conservation of a threatened or endangered species that may require special management and protection, but they are not considered a refuge or sanctuary for the species. Critical habitat may include an area that is not currently occupied by the species, but that will be needed for its recovery. An area is designated as critical habitat after the USFWS (or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service) publish a proposed federal regulation in the Federal Register and then receives public comments on the proposal. The final boundaries of the critical habitat areas are also published in the Federal Register. According to the USFWS's Federally Listed & Candidate Species in Miami-Dade County, Florida (2014), critical habitat is designated for the Bartram's scrub-hairstreak butterfly and Carter's small-flowered flax plant along Krome Avenue at the Owaissa Bauer Pineland Preserve Addition No. 1 parcel. No critical habitat for any other plant or wildlife species is located within or directly adjacent to the proposed project study area.

South Florida Multi-Species Recovery Plan Consultation Areas

Per USFWS South Florida Ecological Services Field Office GIS data (2012), the project corridor is located within designated "Consultation Areas" for the Everglade snail kite and the American crocodile. Proposed roadway construction activities within these designated areas will typically require coordination/consultation with the USFWS.

Strategic Habitat Conservation Areas

Strategic Habitat Conservation Areas are defined as regions not in public ownership, which are recommended for protection in order to maintain biological diversity. These Strategic Habitat Conservation Area designations are intended to indicate that the existing land use should be maintained in order to conserve state-wide biodiversity. The Strategic Habitat Conservation Areas were originally mapped state-wide in association with the FWC's *Closing the Gaps in Florida's Wildlife Habitat Conservation System* report (Cox et al., 1994). Since 1994, landscape-level habitat changes, transfer of land from private to public ownership, and changes in land use have all altered the applicability of the originally mapped Strategic Habitat Conservation Areas. Advances in technological capabilities, revised habitat data, and more extensive species occurrence data facilitated a reassessment of Florida's biodiversity protection status. Additionally, advances in population viability modeling techniques allow for more in-depth examination of wildlife habitat needs that were not available in the previous report. The results of the reanalysis have identified Strategic Habitat Conservation Areas for a new selection of focal species, including many species that were in the original report. According to the updated report, *Wildlife Habitat Conservation Needs in Florida: Updated Recommendations for Strategic Habitat Conservation Areas* (Endries et al., 2009), there are no Strategic Habitat Conservation Areas within close proximity to the project study area.

Florida Bonneted Bat Consultation Areas and Focal Areas

According to guidelines for the Florida bonneted bat provided by the Jacksonville District, USACE, the proposed project is located within a Florida Bonneted Bat Focal Area within the General Florida Bonneted Bat Consultation Area (requiring consultation with the USFWS).

Owaissa Bauer Pineland Preserve Addition No. 1

The Owaissa Bauer Pineland Preserve Addition No. 1 site is a 9.39-acre EEL parcel located along the Krome Avenue study corridor (Miami-Dade County Folio Number 30-6931-000-0160) bordered by SW 264th Street/Bauer Drive to the north and Krome Avenue to the west. One type of natural community occurs within the Owaissa Bauer Pineland Preserve Addition No. 1 parcel, pine rockland, which covers approximately 70.4% (6.61 acres) of the site. The remaining 29.6% (2.78 acres) of the site is disturbed, and consists primarily of abandoned paved roads and the grassy/weedy road shoulder along Krome Avenue. According to surveys by or for Miami-Dade County EEL, as many as 231 plant species from 66 botanical families have been recorded at the Owaissa Bauer Pineland Preserve Addition No. 1 parcel. Native plants account for 75.8% of the flora (175 taxa) and exotics 23.4% (54 taxa). Thirteen of the plant species in the Owaissa Bauer Pineland Preserve Addition No. 1 parcel are endemic to South Florida (Lake Okeechobee and south). Four of these: Carter's small-flowered flax, deltoid spurge, Mosier's false boneset, and pineland lantana are endemic to Miami-Dade County.

Detailed habitat and plant surveys were conducted in 2006 and in 2010 on the Owaissa Bauer Pineland Preserve Addition No. 1 parcel within the limits of the proposed build alternatives for this project. The results of the 2006 and 2010 plant surveys are shown in ***Table 3-8*** and depicted on ***Figure 3-14*** and ***Figures 3-15a*** and ***3-15b***, respectively.

Table 3-8 – Protected Plants Observed Within the Owaissa Bauer Pineland Preserve Addition No. 1 Portion of the Krome Avenue Roadway Study Corridor

Scientific Name	Vernacular Name	USFWS Status	FWC/ FDACS Status	Observed	
				2006 Survey	2010 Survey
Angadenia berteroi	pineland golden trumpet		T	Yes	Yes
Argythamnia blodgettii	Blodgett's wild-mercury; Blodgett's silverbush	C	E	Yes	Yes
Byrsonima lucida	Long Key locustberry		T	Yes	No
Chamaecyce deltoidea	deltoid spurge	E	E	Yes*	No
Chaptalia albicans	white sunbonnet		T	No	Yes
Coccothrinax argentata	Florida silver palm		T	Yes	Yes
Crossopetalum ilicifolium	christmasberry; quail-berry		T	Yes	Yes
Koanophyllon villosum	Florida shrub thoroughwort		E	Yes	Yes
Lantana depressa	pineland lantana; rockland shrubverbena		E	Yes	Yes
Linum carteri var. *carteri*	Carter's small-flowered flax	E	E	Yes	No
Myrcianthes fragrans	Simpson's stopper		T	Yes	No
Pteris bahamensis	Bahama ladder brake		T	Yes	No
Rhynchosia parvifolia	Small-leaf snoutbean		T	Yes	No
Senna mexicana var. *chapmanii*	Chapman's wild sensitive plant		T	Yes	Yes
Smilax havanensis	Everglades greenbrier		T	Yes	Yes
Tetrazygia bicolor	tetrazygia		T	Yes	Yes
Tillandsia fasciculata	cardinal airplant		E	Yes	No
Tragia saxicola	Key West noseburn		T	Yes	No
Zamia pumila	coontie		CE	Yes	Yes

* Observed approximately 150 feet beyond the limits of construction for the widest build alternative (Alternative 3).
E = Endangered; T = Threatened; C = Federal Candidate Species; CE = Commercially Exploited

In addition, coordination has been conducted with the Miami-Dade DRER EMRD EEL Program and the MDPROS Natural Areas Management Program (NAM). To date, three meetings have been held with EEL and MDPROS representatives to discuss the Krome Avenue PD&E project, which are discussed in detail in ***Section 4.3.12.1***.

A Draft Ten-Year Land Management Plan for this parcel was prepared in 2008 and, as of December 2014, is in the process of being reviewed by the EEL Program and the Miami-Dade County Board of County Commissioners to guide the future management of the land with regards to the use, restoration, and maintenance of its environmental values.

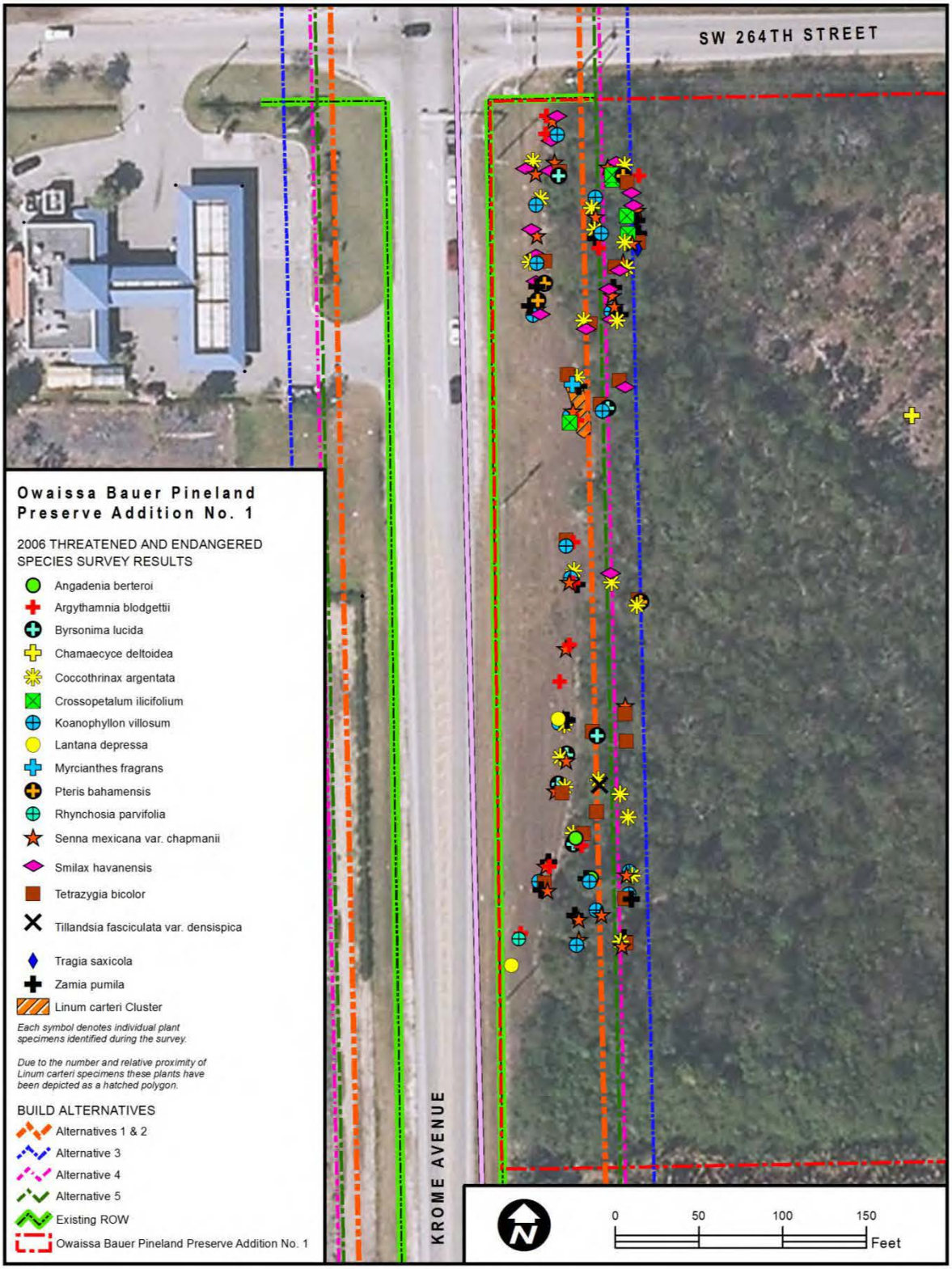


Figure 3-14 – Owaissa Bauer Pineland Preserve Addition No. 1 Plant Survey Results (2006) Overlaid with the Build Alternatives

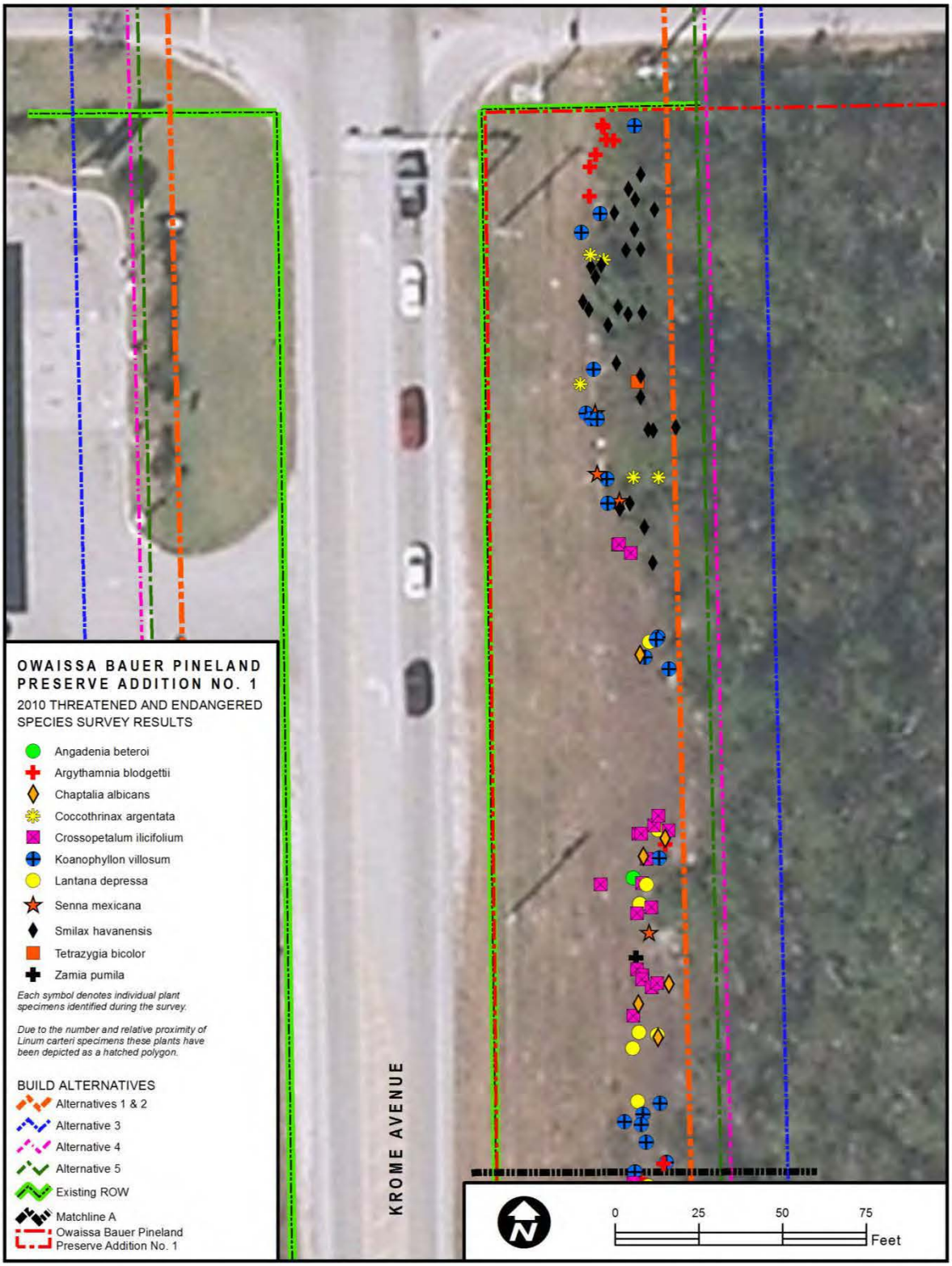


Figure 3-15a – Owaissa Bauer Pineland Preserve Addition No. 1 Plant Survey Results (2010) Overlaid with the Build Alternatives

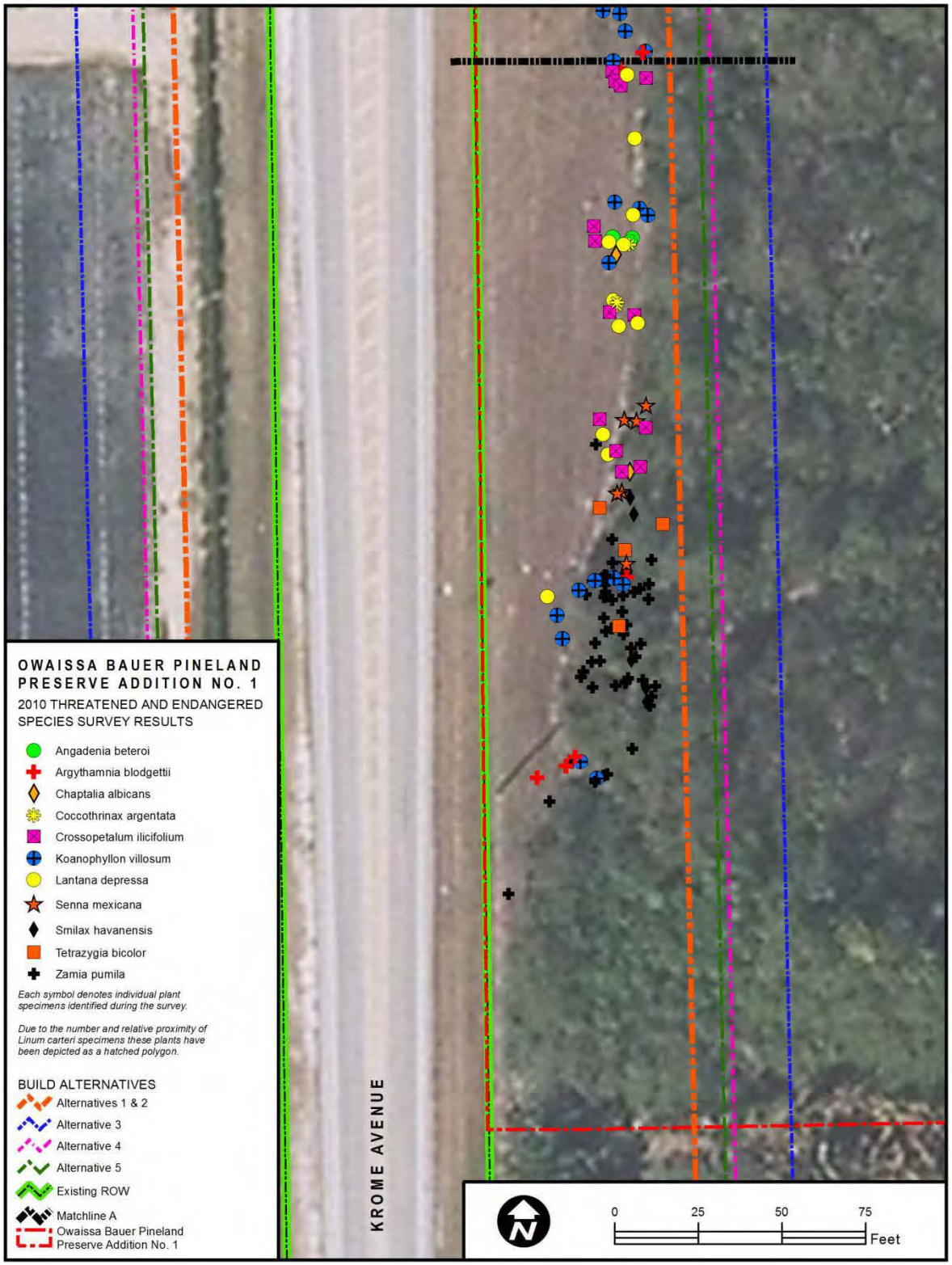


Figure 3-15b – Owaissa Bauer Pineland Preserve Addition No. 1 Plant Survey Results (2010) Overlaid with the Build Alternatives

3.3.12.6 Other Notable Sites with No Special Designation

Florida Audubon Society Property

The Florida Audubon Society owns a two-acre unmarked/undesignated private property, which is located on the west side of the southern end of the Krome Avenue study corridor just north of SW 296th Street/Avocado Drive (Miami-Dade County Folio Number 30-7801-000-0583). The Florida Audubon Society property has no special land use designation (i.e., park, preserve, etc.); however, the Florida Audubon Society has designated the site as a bird watching location. There are no public facilities or managed trails at this site. In addition, the site does not appear to be actively managed and has both native and exotic species growing throughout. Although the property is overgrown, several state-listed plant species exist within its limits, which appear to have been planted in order to attract birds and butterflies for viewing purposes. A detailed tree survey and protected plant species survey was conducted in January 2012, on the property within the limits of the proposed build alternatives for this project. The results of the protected plant species survey are shown in ***Table 3-9***. The results of the tree survey and protected plant species survey are depicted on ***Figure 3-16***.

Table 3-9 – Protected Plants Observed Within the Florida Audubon Society Property (2012)

Scientific Name	Vernacular Name	Status
Calyptranthes pallens	lid flower	Threatened (FL)
Calyptranthes zuzygium	myrtle-of-the-river	Endangered (FL)
Myrcianthes fragrans	Simpson stopper	Threatened (FL)
Prunus myrtifolia	West Indian cherry	Threatened (FL)
Roystonea regia	Florida royal palm	Endangered (FL)
Swietenia mahagoni	West Indian mahogany	Threatened (FL)

Source: Plants in the Preservation of Native Flora of Florida Act. Chapter 5B-40, FAC. 1998, amended.

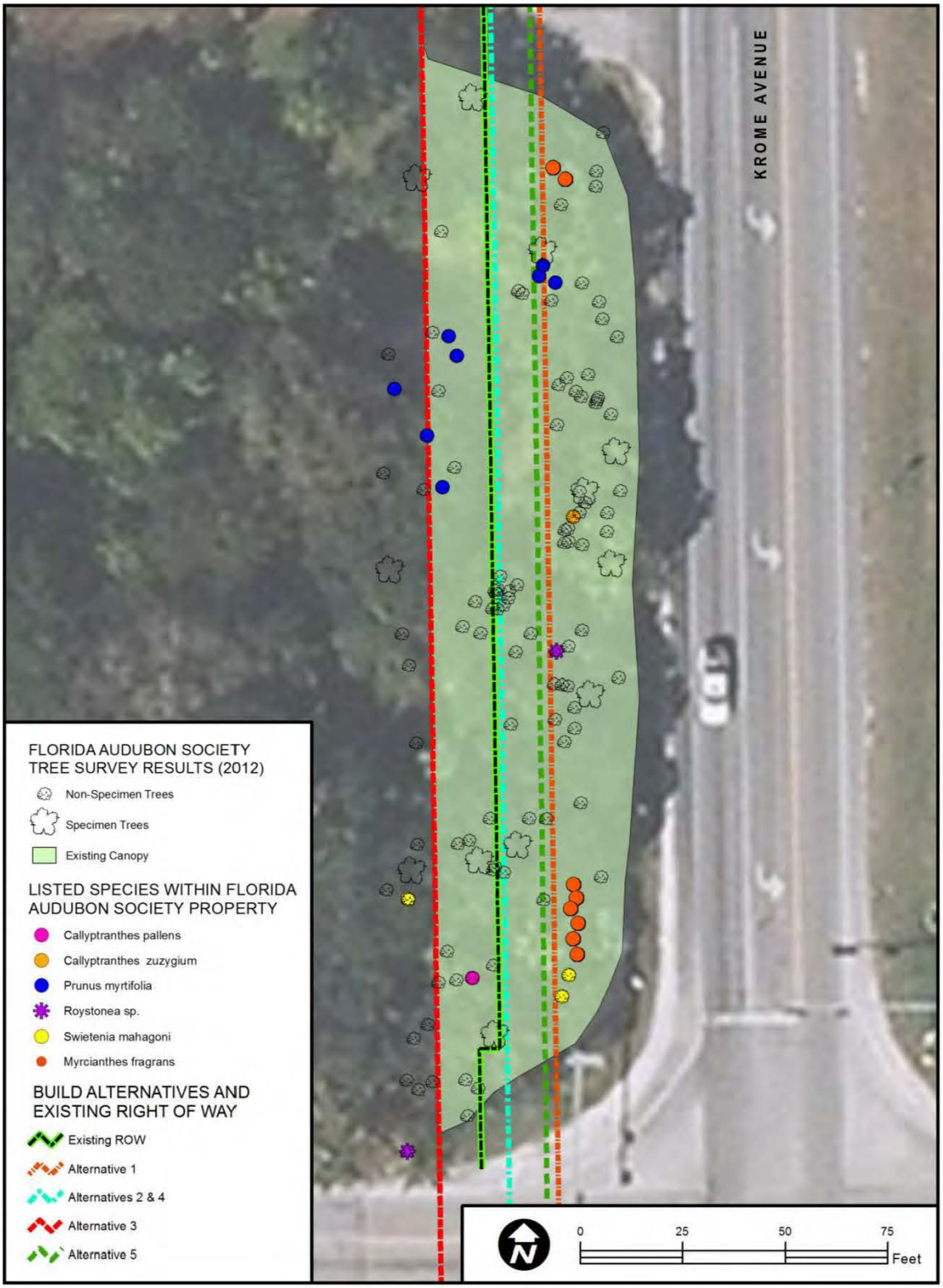


Figure 3-16 – Florida Audubon Society Property
Tree Survey and Protected Plant Species Survey Results (2012)

3.3.13 Essential Fish Habitat

The proposed project does not involve any areas designated as Essential Fish Habitat; therefore, coordination per the Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq.) does not apply to this project.

3.3.14 Farmlands

In accordance with the Farmland Protection Policy Act of 1984 and the FDOT *PD&E Manual*, Part 2, Chapter 28 – Farmlands (dated May 11, 2010), a farmlands assessment was prepared for this project and submitted to the Natural Resources Conservation Service (NRCS) State Soil Scientist to address proposed farmland impacts associated with right-of-way acquisition.

The Krome Avenue study corridor traverses farming and low-density residential communities. The agricultural land uses include row crop agricultural fields, fruit tree orchards, herbaceous ornamental fields, and woody ornamental and fruit tree nurseries. Some of the crop types that exist along the corridor are tomato, avocado, mango, corn, squash, and sweet potato as well as other fruit and vegetable crops. The agricultural fields also include seasonal "self-pick" fields with fruit/vegetable stands. Numerous nurseries specializing in various ornamental landscaping plants are interspersed along much of the southern stretch of the study corridor; most are open to the public with direct access onto Krome Avenue. The majority of the farmlands along the corridor are commercially owned. No migrant camps were observed within the study area. A more detailed description of non-farmlands land use along the study corridor is discussed in ***Section 3.1.3***.

Farming is actively practiced within the existing FDOT roadway right-of-way and directly adjacent to the Krome Avenue roadway corridor. Those areas currently farmed within the existing FDOT roadway right-of-way are designated as transportation land use and not agricultural land use.

4.0 ENVIRONMENTAL CONSEQUENCES

Environmental consequences have been considered for the No-Build Alternative and the five build alternatives. The results of the environmental impact analyses are discussed in the following sections. Indirect and cumulative impacts are discussed in ***Section 4.3.17*** and ***Section 4.3.18***, respectively.

4.1 SOCIAL AND ECONOMIC IMPACTS

This project has been developed in compliance with FDOT's nondiscrimination program. In accordance with 23 CFR Part 200 and 49 CFR Part 21, public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. No person may be treated unfavorably, excluded from participating in or denied the benefits of any FDOT program or activity because of their race, color, national origin, age, sex, religion, disability or family status. The FDOT will not retaliate against any person who complains of discrimination or who participates in an investigation of discrimination.

The environmental analyses conducted for this project and the conclusion reached and presented in this document were conducted in accordance with applicable laws, regulations, and FDOT policies, regardless of race, color, national origin, age, sex, religion, disability or family status. The FDOT does not anticipate a disproportionate impact on any of these populations as a result of this project.

4.1.1 Population and Community Growth Characteristics

This project is not anticipated to cause any direct effects to population and community growth characteristics. The project utilizes the existing heavily-traveled Krome Avenue roadway corridor. A great majority of the areas surrounding the project corridor are located outside the Miami-Dade County UDB. The UDB discourages urban sprawl and protect lands designated as agriculture. Additional development restrictions in the area include lot size requirements and residential development density restrictions. Due to the combination of these factors, community characteristics such as population, population growth rate, median age, and persons per household are not expected to be directly affected by any of the build alternatives. Potential indirect impacts of the Krome South project, including the limited potential for growth inducing effects, are discussed in ***Section 4.3.17***.

4.1.2 Economic Conditions

The project is not anticipated to cause any direct effect to economic conditions in the project area. Economic development is not a project purpose. Economic growth and the business activities in the project corridor are dependent upon the policies in and implementation of the Miami Dade CDMP for the area. Land uses along the corridor are not determined by the project but by the CDMP. The project itself will cause no changes in land use along the corridor. There is likely to be a collateral economic growth benefit from a safer, more efficient roadway. Given the growth management constraints in place in the CDMP and the effects of the Access

Management Plan for the corridor, economic growth from land use changes is not anticipated. Removal of existing safety and capacity constraints would benefit existing land uses and businesses.

The urban development boundary in the CDMP and the policies intended to restrict its expansion and to focus future growth within the urban development boundary serve as the primary sprawl and growth constraints governing growth in the project corridor area. A discussion of the efficacy of the CDMP in limiting growth is discussed in ***Section 4.3.17***, dealing with indirect impacts.

Potential collateral economic impacts that may occur as a result of the Krome South project include changes in economic growth and business activities. These impacts are typically related to changes in the accessibility of an area and would be the same for all five of the build alternatives. However, the project utilizes the existing heavily-traveled Krome Avenue roadway corridor, which already provides access to the existing businesses along the corridor. Therefore, these potential economic effects would be anticipated to be negligible to minor and beneficial to businesses and the surrounding community.

4.1.3 Community Services

Right-of-way needs for each of the five build alternatives would result in the acquisition of a narrow strip of land fronting four existing community churches/religious institutions. ***Table 4-1*** shows the proposed impacts to each affected community facility per each build alternative.

Table 4-1 – Community Service Facility Impacts

Facility Name	Facility Location	Build Alternative	Impacts (acres)
Redland Church of the Nazarene	22755 SW 177th Avenue	Alternative 1	1.096
		Alternative 2	1.096
		Alternative 3	1.627
		Alternative 4	1.315
		Alternative 5	1.096
First Baptist Church of Homestead	29050 SW 177th Avenue	Alternative 1	0.187
		Alternative 2	0.187
		Alternative 3	0.406
		Alternative 4	0.277
		Alternative 5	0.242
Homestead Church of Christ and Redland Christian Academy	17700 SW 280th Street	Alternative 1	0.000
		Alternative 2	0.000
		Alternative 3	0.120
		Alternative 4	0.000
		Alternative 5	0.000

Alternatives 1 and 2 would result in the least total impacts to these facilities (1.283 acres); Alternative 5 would result in 1.338 acres of impacts; Alternative 4 would result in 1.592 acres of impacts; and Alternative 3 would result in the greatest acreage of impacts (2.153 acres). The portion of each community church/religious institution land parcel to be acquired would not

result in any adverse impacts to existing facility improvements (i.e., buildings, parking areas, etc.). Therefore, the proposed acquisition is not anticipated to cause any adverse impacts to the facilities' operations. In addition, no impacts to the remaining existing schools, fire and police protection facilities, medical and emergency operation facilities, or other public buildings/facilities would occur.

In coordination letter from Miami-Dade County Public Schools (dated November 6, 2012), the chief facilities officer requested that the FDOT contact Miami-Dade County Public Schools district staff once the project reaches the design phase so that staff can meet with the FDOT "to discuss the maintenance of traffic and other measures to ensure the safety of student pedestrians and to help minimize disruptions to school operations, including bus transportation." The FDOT will initiate this coordination with Miami-Dade County Public Schools staff when the project reaches the design phase. A copy of the coordination letter from Miami-Dade County Public Schools (dated November 6, 2012) is included in ***Appendix J***.

Thus, no major adverse impacts to any community service facilities are anticipated as a result of the proposed build alternatives. Furthermore, the proposed shared-use path (further discussed in ***Section 4.3.1***) associated with the improvements to Krome Avenue is anticipated to enhance the community services in the project area.

4.1.4 Community Cohesion

Civil Rights impacts to minorities, low income populations, and other groups as a result of the proposed improvements to Krome Avenue have been fully considered. A review of the demographic information available from the U.S. Census indicates that the project is not anticipated to result in disproportionate impacts to racial or ethnic minority, and, or low income populations. The project area has a similar proportion of ethnic minority populations (60%) as Miami-Dade County (65%). As previously mentioned, the ethnic minority population in Miami-Dade is substantially greater than the State's (14.2%). Ethnic minorities within the census tracts that intersect the corridor are higher than those of the county and the project area at 83 percent, and was anticipated as the tracts include large farming communities. Additionally, the project area has a median household income of $64,453, with about ten percent of the population living below the poverty level, which is substantially higher than the State's and County's. The project area has a lower proportion of low-income populations than the Miami-Dade County and the state of Florida (13.8 percent).

This project has been developed in accordance with the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968. To fully comply with Title VI of the Civil Rights Act of 1964, a Public Involvement Program was undertaken, as documented in the Public Involvement Program record for the project (see ***Section 5.1***). Furthermore, coordination with the District Title VI coordinator has taken place to fully comply with Title VI and the Americans with Disabilities Act and address any concerns.

The proposed improvements considered under the five proposed alternatives take advantage of the existing Krome Avenue corridor; therefore, the existing neighborhoods adjoining this

corridor will not be further divided. In addition, no social isolation will occur and no major adverse impacts to local or regional traffic patterns are anticipated for any of the build alternatives; however, north- and southbound access modifications will occur as a result of the four-laning of Krome Avenue.

The need for improvements on this corridor is based on a combination of safety, physical and functional deficiencies within the corridor plus overall capacity needs. The primary objective of the project is to address safety deficiencies along this section of the Krome Avenue corridor. The secondary objectives of the project are to provide additional capacity to accommodate anticipated future area travel demand and to address other design deficiencies along the roadway. Additional secondary objectives include maintaining the effectiveness of the corridor as an emergency evacuation route and improving regional connectivity. Therefore, the mobility along this corridor is anticipated to be enhanced as a result of this project.

No specific ethnic groups or minority populations will become socially or culturally isolated as a result of the improvements and no adverse impacts to community cohesion are anticipated for any of the build alternatives.

Relocations

All of the build alternatives will require acquisition of additional right-of-way along the study corridor. A breakdown of the required relocations caused by this right-of-way acquisition has been provided in ***Table 4-2***. In general, the proposed project, depending on the alternative chosen, will cause the relocation of properties ranging from four to ten residences, three to six businesses, and one to four personal properties. The FDOT does not anticipate a disproportionate impact on minority or low income communities as a result of these relocations.

The FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646, as amended by Public Law 100-17). The brochures that describe in detail the Department's relocation assistance program and right-of-way acquisition program are "Your Relocation: Residential," "Your Relocation: Business, Farms, and Nonprofit Organizations," "Your Relocation: Signs," and "The Real Estate Acquisition Process." All of these brochures are distributed at all public hearings and made available upon request to any interested persons.

Table 4-2 – Potential Relocations and Right-of-Way Acquisition Cost per Build Alternative

Alternative	Number of Parcels Impacted	Relocations			Right-of-Way Cost
		Residential	Business	Personal Property Only	
Alternative 1	139	4	3	4	$62,518,300
Alternative 2	140	5	4	2	$63,474,500
Alternative 3	216	10	6	2	$105,248,800
Alternative 4	161	5	5	1	$74,064,500
Alternative 5	154	5	4	1	$66,948,200

4.1.5 Land Use

No land use changes will occur with any of the build alternatives to Oak Creek Park, Kings Grant Park, Redland Fruit and Spice Park, Camp Owaissa Bauer (including the Everglades Archery Range), Owaissa Bauer Pineland Preserve Addition No. 2, Owaissa Bauer Pineland Preserve Addition No. 3, or the Miami Rockridge Pinelands (including Ingram Pineland) due to their distance from the Krome Avenue study corridor.

Due to the presence of protected plant resources at Owaissa Bauer Pineland Preserve Addition No. 1, impacts to this parcel are discussed in ***Section 4.3.12.1***. Since the impact area of this parcel has been substantially reduced and most of the parcel will remain intact, the land use impact is anticipated to be minor.

Due to the presence of protected plant resources at the Florida Audubon Society property, impacts to this parcel are discussed in ***Section 4.3.12.2***. Only Alternative 3, with the widest typical section, encroaches into this parcel. Since most or all of this parcel will remain intact depending upon which alternative is selected, the land use impact is anticipated to be minor.

The unimproved SFWMD canal maintenance access roads along the C-102/Princeton and C-103/Mowry canals are discussed in ***Section 4.3.1***. No change in land use is anticipated along these access roads.

Due to its status as a NRHP-eligible resource, impacts to the Redland Golf and Country Club are discussed in ***Section 4.2.1.2***. No change in land use is anticipated at this location, with the exception of minor right-of-way acquisition.

The proposed improvements to Krome Avenue are consistent with the Miami-Dade County CDMP. No major adverse impacts to existing land uses are anticipated as a result of the proposed project. Additional information regarding the potential indirect effects to land use is provided in ***Section 4.3.17***.

4.1.6 Utilities and Railroads

4.1.6.1 Utilities

All build alternatives will result in the same degree of impacts to existing utilities as they are either within or are very close to the existing roadway corridor. The overhead Florida Power & Light power lines will need to be relocated to the proposed right-of-way line for all build alternatives. Coordination with Florida Power & Light will continue during the design phase of the project.

4.1.6.2 Lighting

As part of this project, lighting has been proposed only at signalized intersections. Based on public input during the CAC meetings, the stakeholders indicated their desire to not have lighting along the entire corridor. The existing lighting located at some of the intersections within the corridor will require relocation since widening will occur with the proposed improvements. New lighting is only being proposed at intersections that currently do not have lighting.

4.1.6.3 Railroads

No adverse impacts are anticipated to occur to the existing CSX Transportation railroad crossing as a result of any of the build alternatives. Coordination with CSX Transportation will continue during the design phase of the project. Due to its status as a NRHP-eligible resource, impacts to this railroad crossing are also discussed in ***Section 4.2.1.2***.

4.2 CULTURAL AND HISTORICAL RESOURCES IMPACTS

4.2.1 Archeological and Historical

A CRAS was completed in 2005 for this project in accordance with the procedures contained in 36 CFR Part 800 and in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 12 – Archeological and Historical Resources (dated January 12, 1999). An addendum to the CRAS was prepared in 2012. For additional information regarding cultural and historical resources, please refer to the *Section 106 Documentation and Determination of Effects* completed for this project, which is available for review on file at the FDOT District Six offices in Miami, Florida, and is incorporated by reference.

4.2.1.1 Archeological Resources

The archeological investigations conducted as part of the CRAS and the CRAS Addendum did not identify any archeological resources and indicated that the potential for the recovery of important archeological information from the current project area is low. Consequently, there are no archeological sites eligible for listing in the NRHP or otherwise of regional or local significance that will be affected by the construction of the proposed project under any alternative. No further archeological work is recommended.

4.2.1.2 Historical Resources

The CRAS conducted in 2005 identified three historic resources, which were determined to be eligible for listing on the NRHP: the Howard Schaff Residence (8DA9674), the Clarence J. Parman Residence (8DA9675), and the Redland Golf Course (8DA10051). The CRAS Addendum prepared in 2012 identified one additional historic resource, the Seaboard Air Line (CSX) Railroad (8DA10753), which was determined to be eligible for listing on the NRHP. For all of the build alternatives, no air quality impacts will occur that may adversely impact the NRHP-eligible resources. The existing vehicular access to the residences and golf course (as well

as parking) will not be impacted. For the Seaboard Air Line (CSX) Railroad, the railroad will continue to convey its historic route and function. A more detailed impacts discussion for each of the sites is included below.

Howard Schaff Residence, 27450 SW 177th Avenue (8DA9674) and Clarence J. Parman Residence, 27250 SW 177th Avenue (8DA9675)

At the locations of the two significant residences, the Howard Schaff Residence/27450 SW 177th Avenue (8DA9674) and the Clarence J. Parman Residence/27250 SW 177th Avenue (8DA9675), all work will be occurring within the existing right-of-way for Alternatives 1, 2, 4, and 5, and there will be no adverse effect to the resources. A small acquisition of right-of-way from the residences is necessary for Alternative 3; however, due to the large distance from the roadway to the residences, they will not be adversely affected by the proposed improvements. A noise analysis was undertaken for both residences, and based on the predicted noise levels and the assumed conditions, use of the interior spaces of the residences will not be impacted by the project. Exterior noise impacts would occur at the Clarence J. Parman Residence, but no exterior noise impacts are predicted at the Howard Schaff Residence. A noise barrier evaluation was conducted for the Parman residence, and although it appeared that it would be feasible to construct a noise barrier for this home, it was not considered reasonable since it would not be possible to reduce noise levels by the FDOT's minimum noise level reduction criteria [at least seven dB(A)]. Additionally, construction of a noise barrier in front of the Clarence J. Parman Residence would likely result in an adverse effect due the changes to the viewshed to and from the resource. Thus, according to FHWA and FDOT criteria, this noise barrier was not recommended for further consideration and noise impacts at the exterior of the Parman residence are considered to be an unavoidable consequence of the project.

Alternative 3 would also require removal of the large mango trees in front of the Howard Schaff Residence, which would result in an adverse effect. However, alternatives 1, 2, 4, and 5 would not require removal of the large mango trees and would not have an adverse impact on the Howard Schaff Residence. Therefore, the FDOT and FHWA have determined that there will be no adverse effect to the Howard Schaff Residence/27450 SW 177th Avenue (8DA9674) and the Clarence J. Parman Residence/27250 SW 177th Avenue (8DA9675) for alternative 1, 2, 4, and 5; Alternative 3 would result in an adverse effect to the Howard Schaff Residence.

Redland Golf Course (8DA10051)

A small portion of right-of-way from the Redland Golf Course (8DA10051) is required as part of the proposed improvements for Alternatives 1, 2, 3, 4, and 5. With the exception of this area of right-of-way acquisition, the improvements for the build alternatives will all take place within the existing right-of-way at the golf course and there will be no alterations to the physical dimensions or course layout as a result of the roadway improvements. Additionally, the noise analysis revealed that areas of frequent human use on the country club property would not be impacted by traffic noise due to the project. Therefore, the FDOT and FHWA have determined that there will be no adverse effect to the Redland Golf Course (8DA10051) as a result of Alternatives 1, 2, 3, 4, and 5.

Seaboard Air Line (CSX) Railroad (8DA10753)

Alternatives 1, 2, 3, 4, and 5 will require roadway construction and the installation of a shared path at the intersection of the Seaboard Air Line (CSX) Railroad (8DA10753) and Krome Avenue within the project area of potential effect. However, it is only to a small portion of the track within the overall CSX system that is comprised of hundreds of miles of track, the rail corridor will still be used for rail travel, and the overall route will remain unchanged. As a result of Alternatives 1, 2, 3, 4, and 5, the FDOT and FHWA have determined that there will be no adverse effect to the characteristics which qualify the Seaboard Air Line (CSX) Railroad (8DA10753) for listing in the NRHP.

Determination of Effects

Based on information provided in the Section 106 Documentation and Determination of Effects Report prepared in 2005, the FHWA has determined that the proposed project improvements will have no adverse effect on the historic resources identified during the 2005 CRAS and subsequent 2012 CRAS Addendum, except for the removal of the large mango trees in front of the Howard Schaff Residence with implementation of Alternative 3; alternatives 1, 2, 4, and 5 would not require removal of the large mango trees and would not have an adverse impact on the Howard Schaff Residence or any of the other identified historic properties. The SHPO issued a concurrence letter for this project on May 7, 2007, concurring with FHWA's findings (see ***Appendix G***). This letter included a request by the SHPO to review the *Noise Study Report* for this project in reference to potential historical resource impacts. Follow-up coordination was conducted with the SHPO in reference to reviewing the *Noise Study Report*, and the requested information was provided to the SHPO as part of the CRAS Addendum. Based on the information provided in the CRAS Addendum prepared in 2012, the SHPO issued a new concurrence letter on August 24, 2012, concurring with FHWA's updated findings (see ***Appendix G***).

4.2.2 Section 4(f) Resources

Ten sites were initially considered for potential Section 4(f) involvement in this study. Five of these sites (Camp Owaissa Bauer/Everglades Archery Range, Owaissa Bauer Pineland Preserve Addition No. 2 and No. 3, and the SFWMD canal maintenance access roads) were not evaluated as potential Section 4(f) resources for the reasons discussed in the following section. A Section 4(f) Determination of Applicability was prepared for the Owaissa Bauer Pineland Preserve Addition No. 1 parcel, and it was determined that property does not qualify as a Section 4(f) resource, as discussed in the following section. The four remaining properties [the Howard Schaff and Clarence J. Parman residences, the Redland Golf Course, and the Seaboard Air Line (CSX) Railroad] qualify as Section 4(f) resources under the historic resources category. Uses at these four historic Section 4(f) properties have the potential to be impacted by the proposed build alternatives, as discussed in the following section.

Camp Owaissa Bauer (including the Everglades Archery Range), Owaissa Bauer Pineland Preserve Addition No. 2, and Owaissa Bauer Pineland Preserve Addition No. 3

Due to their distance from the Krome Avenue study corridor, no impacts would occur to Camp Owaissa Bauer (including the Everglades Archery Range), Owaissa Bauer Pineland Preserve Addition No. 2, or Owaissa Bauer Pineland Preserve Addition No. 3. Therefore, these sites were not evaluated as potential Section 4(f) resources.

SFWMD Canal Maintenance Access Roads

The unimproved SFWMD canal maintenance access roads along the C-102/Princeton and C-103/Mowry canals are discussed in ***Section 4.3.1***. The Miami-Dade Open Space Master Plan Vision Map (dated November 11, 2009) shows both of these maintenance access roads, as potential future "greenways" in the MDPROS Master Plan. However, the SFWMD, the owner of these canal maintenance access roads, has no plans at this time for development of these canal maintenance access roads for trail use. Due to their current status as SFWMD canal maintenance access roads, these access roads were not evaluated as potential Section 4(f) resources.

Owaissa Bauer Pineland Preserve Addition No. 1

A Section 4(f) Determination of Applicability was prepared for the Owaissa Bauer Pineland Preserve Addition No. 1 parcel. The Section 4(f) Determination of Applicability included a letter dated April 11, 2006, from the Miami-Dade County DERM to FDOT, which stated the Owaissa Bauer Pineland Preserve Addition No. 1 parcel is a "critically imperiled pine rockland, acquired for the purpose of conservation, that will function as a natural pine rockland preserve in perpetuity." The FHWA reviewed the Section 4(f) Determination of Applicability and, in a letter to FDOT dated June 19, 2006, FHWA concurred that this property does not qualify as a Section 4(f) resource. Copies of DERM, FDOT, and FHWA correspondence letters regarding this Section 4(f) Determination of Applicability are provided in ***Appendix K***. The full Section 4(f) Determination of Applicability is on file at the FDOT District Six offices in Miami, Florida and is incorporated by reference. Due to the presence of protected plant resources at Owaissa Bauer Pineland Preserve Addition No. 1, impacts to this site are further discussed in ***Section 4.3.12.1***.

Howard Schaff Residence (8DA9674), Clarence J. Parman Residence (8DA9675), Redland Golf Course (8DA10051), and Seaboard Air Line (CSX) Railroad (8DA10753)

All of these resources and build alternative combinations received a Section 106 Determination of "No Adverse Effects," with the exception of the Howard Schaff Residence for Alternative 3. As part of the interagency coordination, the FHWA made the SHPO aware of its intent to make a *de minimis* Section 4(f) finding for all properties and build alternatives that the SHPO concurred with as having "No Effect" or "No Adverse Effect" under Section 106 of the National Historic Preservation Act (see ***Appendix G*** – SHPO Determination of Effects letter dated August 24, 2012).

The FDOT has assessed the following historic properties based on each build alternative and, in concurrence with FHWA, has determined that there is no Section 4(f) use for the following resource/build alternative combinations:

- Clarence J. Parman Residence (8DA9675) for Alternatives 1, 2, 4, and 5
- Howard Schaff Residence (8DA9674) for Alternatives 1, 2, 4, and 5

All work in proximity to these resources for the identified build alternatives will occur inside the existing FDOT right-of-way. In addition, the SHPO has made a Determination of Effects finding of "No Adverse Effect" for all of these combinations.

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, Pub. L. 109-59, amended existing Section 4(f) legislation at Section 138 of Title 23 and Section 303 of Title 49 USC, to simplify the processing and approval of projects that have only a *de minimis* finding on lands protected as a Section 4(f) resource. In accordance with this policy, the following build alternatives qualify for a *de minimis* finding for the following historic resources, based on limited right-of-way acquisition:

- Clarence J. Parman Residence (8DA9675) for Alternative 3
- Redland Golf Course (8DA10051) for Alternative 1 through 5
- Seaboard Air Line (CSX) Railroad (8DA10753) for Alternative 1 through 5

For the Clarence J. Parman Residence, the required strip of right-of-way will not result in any alterations to the features that contribute to the property's eligibility for the NRHP. The residence will be approximately 65 feet from the edge of the roadway pavement as part of Alternative 3. The SHPO made a Section 106 Determination of "No Adverse Effect;" therefore this meets the qualifications for a *de minimis* finding under Section 4(f) (see ***Appendix G*** – SHPO Determination of Effects letter dated August 24, 2012).

A strip of right-of-way is required from the 121-acre Redland Golf Course property. This strip, which also features a number of non-native trees, acts as a buffer between the golf course and the roadway and is located outside of the golf course's existing fence. There will be no alterations to the physical dimensions of the historic, playable golf course property or course layout as a result of the roadway improvements and right-of-way acquisition. For all alternatives (including Alternative 3, which has the greatest impact, at 1.1 acres), the required strip of right-of-way represents less than 1% of the total area of the Redland Golf Course property. Therefore, this meets the qualifications for a *de minimis* finding under Section 4(f).

The right-of-way needed for this project across the Seaboard Air Line Railroad will similarly have no effect on the purpose or function of the resource. There will be no changes to the features which render it NRHP-eligible. The corridor is already a transportation facility and will continue to serve the same purpose after the project is completed. The SHPO made a Section 106 Determination of Effects finding of "No Adverse Effect" for all five build alternatives across this resource. Therefore, this meets the qualifications for a *de minimis* finding under Section 4(f) (see ***Appendix G*** – SHPO Determination of Effects letter dated August 24, 2012).

While all build alternatives would move the roadway and associated traffic, noise, and visual impacts closer to the identified resources, none of them will be adversely affected by the project under Section 106 criteria/standards. As there are no indirect adverse effects to the resources, a constructive use impact evaluation under Section 4(f) is not applicable. Based on this information and the Section 106 determination of "No Adverse Effects" to these resources and concurrence by the SHPO (see ***Appendix G*** – SHPO Determination of Effects letter dated August 24, 2012), these activities meet the qualifications for a *de minimis* Section 4(f) finding.
The FHWA concurred with and approved the FDOT's recommendation of a Section 4(f) *de minimis* finding for these resources in an email dated August 28, 2013 (see ***Appendix L***):

> *In reviewing the revised information, the SHPO concurrence letter, the previous information provided that includes the 2/7/13 responses to the FHWA De Minimis Questionnaire, our 7/14/13 teleconference to discuss the Section 4(f) impacts, and … field review on 7/24/13 … the [FHWA] has sufficient information at this time to determine that some of the alternatives will have only a de minimis Section 4(f) impact on some of the resources. Specifically, FHWA agrees with your recommendation and has determined that the following build alternatives, as proposed, will have a de Minimis impact under Section 4(f) for the following historic resources:*
>
> - *Clarence J. Parman Residence (8DA9675) for Alternative 3*
> - *Redland Golf Course (8DA10051) for Alternative 1 to 5*
> - *Seaboard Air Line (CSX) Railroad (8DA10753) for Alternative 1 to 5*

For the Howard Schaff Residence, Alternative 3 would require removal of the large mango trees in front of the residence. The FHWA has determined that removal of these trees constitutes an adverse effect under Section 106, and the SHPO has concurred with this finding (see ***Appendix G*** – SHPO Determination of Effects letter dated August 24, 2012). Removal of these trees would also constitute a Section 4(f) finding. Therefore, in order to move forward with Alternative 3, an Individual Section 4(f) Evaluation would need to be prepared to evaluate the Section 4(f) use caused by removal of these trees. However, Alternative 3 is not the preferred alternative for this project.

Table 4-3 summarizes the Section 4(f) use/findings recommended by FDOT and approved by FHWA.

Table 4-3 – Section 4(f) Use/Findings

	Clarence J Parman Residence	Howard Schaff Residence	Redland Golf Course	Seaboard Air Line Railroad (CSX)
Alternative 1	○ All roadway improvements would occur within the existing FDOT ROW at this location with no impacts to the resource and a Section 106 determination of No Adverse Effect; therefore this does not constitue a Section 4(f) use.	○ All roadway improvements would occur within the existing FDOT ROW at this location with no impacts to the resource and a Section 106 determination of No Adverse Effect; therefore this does not constitute a Section 4(f) use.	□ Roadway improvements would require 0.12 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.	□ Roadway improvements would require 0.150 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.
Alternative 2	○ All roadway improvements would occur within the existing FDOT ROW at this location with no impacts to the resource and a Section 106 determination of No Adverse Effect; therefore this does not constitute a Section 4(f) use.	○ All roadway improvements would occur within the existing FDOT ROW at this location with no impacts to the resource and a Section 106 determination of No Adverse Effect; therefore this does not constitute a Section 4(f) use.	□ Roadway improvements would require 0.12 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.	□ Roadway improvements would require 0.150 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.
Alternative 3	□ Roadway improvements would require 0.045 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.	△ Roadway improvements would require 0.260 acres of ROW acquisition from this resource and the removal of historic mango trees. This resulted in a Section 106 finding of Adverse Effect and therefore does not meet the qualifications for a de minimis Section 4(f) finding.	□ Roadway improvements would require 1.1 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding [1].	□ Roadway improvements would require 0.412 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.
Alternative 4	○ All roadway improvements would occur within the existing FDOT ROW at this location with no impacts to the resource and a Section 106 determination of No Adverse Effect; therefore this does not constitute a Section 4(f) use.	○ All roadway improvements would occur within the existing FDOT ROW at this location with no impacts to the resource and a Section 106 determination of No Adverse Effect; therefore this does not constitute a Section 4(f) use.	□ Roadway improvements would require 0.32 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.	□ Roadway improvements would require 0.306 acres of ROW acquisition from this resource. No effect to functionality of the facility. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.
Alternative 5	○ All roadway improvements would occur within the existing FDOT ROW at this location with no impacts to the resource and a Section 106 determination of No Adverse Effect; therefore this does not constitute a Section 4(f) use.	○ All roadway improvements would occur within the existing FDOT ROW at this location with no impacts to the resource and a Section 106 determination of No Adverse Effect; therefore this does not constitute a Section 4(f) use.	□ Roadway improvements would require 0.19 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.	□ Roadway improvements would require 0.288 acres of ROW acquisition from this resource. A Section 106 determination of No Adverse Effect was made; therefore this meets the qualifications of a de minimis Section 4(f) finding.

Legend:

- ○ No Section 4(f) Use
- □ De minimis Section 4(f) Finding
- △ Individual Section 4(f) Evaluation

[1] The right-of-way required from the Redland Golf Course for Alternative 3 is a linear strip located outside of the golf course's existing fence. There will be no alterations to the features that contribute to this resource's NRHP eligibility. The needed strip of right-of-way represents 0.9% of the total 121-acre Redland Golf Course property.

4.2.3 Recreational and Parklands

No impacts will occur with any of the build alternatives to Oak Creek Park, Kings Grant Park, Redland Fruit and Spice Park, or Camp Owaissa Bauer (including the Everglades Archery Range) due to their distance from the Krome Avenue study corridor.

The unimproved SFWMD canal maintenance access roads along the C-102/Princeton and C-103/Mowry canals are discussed in ***Section 4.3.1***.

Due to the presence of protected plant resources at the Florida Audubon Society property, impacts to this site are discussed in ***Section 4.3.12.2***.

Due to its status as a NRHP-eligible resource, impacts to the Redland Golf and Country Club are discussed in ***Section 4.2.1.2***.

4.3 NATURAL AND PHYSICAL RESOURCES IMPACTS

4.3.1 Bicycle and Pedestrian Facilities

No designated bicycle and/or pedestrian facilities currently exist along Krome Avenue or any of the adjacent side streets within the study limits. Additionally, there are no crosswalks and/or signalized pedestrian crossings at any of the existing signalized intersections in the study area. All build alternatives include a ten-foot wide two-way shared-use path along the west side of the Krome Avenue roadway corridor. In addition, all build alternatives include bicycle pavement markings on the paved shoulders in both directions. The shared-use path and bicycle pavement markings are anticipated to enhance safe bicycle and pedestrian use along the study corridor. Separate facilities will reduce conflict with vehicular traffic.

The unimproved SFWMD canal maintenance access roads along the C-102/Princeton and C-103/Mowry canals will experience minor impacts in the area of the proposed roadway improvements with all of the build alternatives. However, since these access roads will remain open following construction of the roadway improvements, these minor impacts are not anticipated to affect the use or function of these access roads.

There are no designated equestrian trails along the study corridor. A designated equestrian trail was considered as a potential design option during the early stages of project development; however, due to a lack of public interest during the public involvement process, this feature was excluded from the design of the five build alternatives evaluated in this document.

4.3.2 Visual / Aesthetics

The two historic structures which make use of architectural design elements [Howard Schaff Residence (8DA9674) and Clarence J. Parman Residence (8DA9675)] are discussed in ***Section 4.2.1.2*** due to their status as NRHP-eligible resources. Roadway improvements associated with all of the build alternatives will be at-grade; therefore, the views to or from these structures will not be diminished. Therefore, no visual/aesthetic impacts to these sites are anticipated as a result of the proposed project, with the exception of removal of the large mango trees in front of the Howard Schaff Residence for Alternative 3; alternatives 1, 2, 4, and 5 will not require removal of the large mango trees and will not cause a visual/aesthetic impact at this residence.

Due to its status as a NRHP-eligible resource, detailed impacts to the Redland Golf and Country Club are discussed in ***Section 4.2.1.2*** Roadway improvements associated with all of the build alternatives will be at-grade; therefore, the views to or from the Redland Golf and Country Club will not be diminished. In addition, the SHPO requested that no trees to be removed that provide

a visual barrier between the golf course and the roadway. Therefore, no visual/aesthetic impacts are anticipated as a result of the proposed project.

Due to the presence of protected plant resources at Owaissa Bauer Pineland Preserve Addition No. 1 and the Florida Audubon Society property, impacts to these parcels are discussed in ***Section 4.3.12.1*** and ***Section 4.3.12.2***, respectively. However, roadway improvements associated with all of the build alternatives will be at-grade; therefore, the views to or from these resources will not be diminished.

Along the southern portion of the corridor, three establishments were found to have active horse hitching posts, which provide evidence of the historically preserved rural character of Krome Avenue. These establishments will not be impacted as a result of the proposed roadway improvement project; therefore, no visual/aesthetic impacts are anticipated at these locations.

The study corridor will be enhanced by the proposed roadway improvements (i.e., new asphalt pavement, new pavement markings, new signage, improved drainage and grassed areas in the median and swales, as well as a newly constructed shared-use path). Additionally, the proposed project does not add any urban-like characteristics to the corridor, such as curb and gutter, new traffic signals, or additional streetlights.

This corridor shows unique natural scenery provided by a large number of landscaping and fruit plant nurseries abutting both sides of the road. The potential inclusion of landscaping elements along the roadway will be made during the design phase of the project, keeping in mind the rural ambiance of the area and right-of-way restrictions along the corridor.

4.3.3 Air Quality

In accordance with applicable FHWA guidelines and guidelines contained in the FDOT *PD&E Manual*, Part 2, Chapter 16 – Air Quality Analysis (dated September 13, 2006), potential air quality impacts in the area surrounding the project corridor were assessed for all viable project alternatives, including the No-Build Alternative. An *Air Quality Technical Memorandum* was prepared, which is on file at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

The results of the screening test for the default receptor sites 1 through 20 for both the Build and No-Build alternatives are shown in ***Table 4-4***. In summary, the worst-case opening year (2020) results at the CO Florida 2012 default receptor sites indicate that the project will have a maximum one-hour CO concentration of 5.9 PPM at Default Receptors 3, 8, 13, and 18, and a maximum eight-hour CO concentration of 3.5 PPM, also at Receptors 3, 8, 13, and 18. The worst-case design year (2040) results indicate that the project will have a maximum one-hour CO concentration of 5.7 PPM at Default Receptors 3, 8, 13, and 18, and a maximum eight-hour CO concentration of 3.4 PPM, also at Default Receptors 3, 8, 13, and 18. These results are based on the CO Florida 2012 model's default receptors; the concentrations at any actual receptors would be equal to or less than the concentrations calculated for the default receptors.

Table 4-4 – Carbon Monoxide Concentrations

Default Receptor No.	Maximum One-Hour CO Concentration (PPM)				Maximum Eight-Hour CO Concentration (PPM)			
	2020		2040		2020		2040	
	No-Build	Build	No-Build	Build	No-Build	Build	No-Build	Build
1	4.9	5.5	N/A[1]	5.3	2.9	3.3	N/A[1]	3.2
2	5.0	5.6	N/A	5.4	3.0	3.4	N/A	3.2
3	5.2	5.9	N/A	5.7	3.1	3.5	N/A	3.4
4	4.8	5.5	N/A	5.2	2.9	3.3	N/A	3.1
5	4.5	4.9	N/A	4.7	2.7	2.9	N/A	2.8
6	4.8	5.5	N/A	5.3	2.9	3.3	N/A	3.2
7	5.0	5.6	N/A	5.4	3.0	3.4	N/A	3.2
8	5.2	5.9	N/A	5.7	3.1	3.5	N/A	3.4
9	4.7	5.4	N/A	5.2	2.8	3.2	N/A	3.1
10	4.6	4.9	N/A	4.7	2.8	2.9	N/A	2.8
11	4.9	5.5	N/A	5.3	2.9	3.3	N/A	3.2
12	5.1	5.7	N/A	5.4	3.1	3.4	N/A	3.2
13	5.2	5.9	N/A	5.7	3.1	3.5	N/A	3.4
14	4.7	5.4	N/A	5.2	2.8	3.2	N/A	3.1
15	4.5	4.9	N/A	4.7	2.7	2.9	N/A	2.8
16	4.8	5.5	N/A	5.3	2.9	3.3	N/A	3.2
17	5.0	5.7	N/A	5.4	3.0	3.4	N/A	3.2
18	5.2	5.9	N/A	5.7	3.1	3.5	N/A	3.4
19	4.8	5.4	N/A	5.2	2.9	3.2	N/A	3.1
20	4.5	5.0	N/A	4.7	2.7	3.0	N/A	2.8

Notes: [1] = No traffic data are available for the 2040 No-Build Alternative.
NAAQS for Carbon Monoxide - 35 PPM (one-hour concentration) and 9 PPM (eight-hour concentration).

The results of the CO screening analysis indicate that the proposed project is not expected to cause an exceedance of the one-hour or eight-hour NAAQS for CO (35 PPM and 9 PPM, respectively). The project passes the CO screening analysis, and air quality impacts resulting from the proposed project are not expected.

4.3.3.1 Construction

Construction activities for the proposed action may potentially have short-term air quality impacts within the immediate vicinity of the project. Construction activities may generate temporary increases in air pollutant emissions in the form of dust from earthwork and unpaved roads and smoke from open burning. Such emissions and potential impacts will be minimized by adherence to all applicable state and local regulations and to the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*. Construction impacts from the Krome South project are discussed further in ***Section 4.3.15***.

4.3.3.2 Agency Coordination

As of June 2005, Miami-Dade County has been designated as in attainment for all of the NAAQS under the criteria provided in the Clean Air Act. This project is also included in the

area's TIP that has been approved by the Miami-Dade MPO. Therefore, the project is located in an area which is designated as in attainment under the criteria provided in the Clean Air Act; the Clean Air Act conformity requirements do not apply to the project.

Agency coordination for this project occurred through the ETDM Planning and Program Screening, and the AN process. The ETDM review occurred between May 22, 2006, and July 6, 2006, and the most recent ETDM Programming Screen Summary Report was published on September 20, 2010. AN comments were received from the U.S. Department of Health and Human Services. ETDM comments were received from the USEPA, which assigned a Degree of Effect of 'Minimal' for air quality. These comments have been addressed in the *Air Quality Technical Memorandum*. No adverse comments regarding air quality were received. The Summary Degree of Effect for air quality was assigned as 'None.' Additionally, the ETDM Programming Screen Summary Report listed the project as "Consistent with Air Quality Conformity." The ETDM Summary Report is provided in ***Appendix M***.

4.3.4 Noise

In accordance with Title 23 Code of Federal Regulations (CFR) Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (July 13, 2010), and using the methodology established in the FDOT *PD&E Manual*, Part 2, Chapter 17 – Noise (dated May 24, 2011), an assessment of noise impacts has been conducted for the proposed improvements and is documented in the *Noise Study Report*, which is available for review at the FDOT District Six offices in Miami, Florida and is incorporated by reference. The *Noise Study Report* documents the effect of the proposed project on traffic noise levels. Specifically, traffic noise levels were evaluated and predicted at sensitive sites and noise abatement was considered for the build alternatives.

Prior to conducting a detailed noise analysis, a desk-top review was performed to determine if noise levels will likely increase as a result of the project, if noise sensitive receptor sites are within the project area, or if noise impacts are likely to occur. The desk-top review indicated that the proposed improvements were likely to increase traffic noise levels or cause design year (2040)[11] noise levels to approach or exceed the FHWA NAC at noise sensitive sites along the project corridor. Therefore, a more detailed noise analysis was performed. Predicted noise levels for individual model receptors are presented in ***Table 4-5*** located at the end of this section. The receptor locations are depicted on ***Figures 4-1a*** through ***4-1f*** located at the end of this section. More specific noise level data may be found in the *Noise Study Report*.

The project study area is generally suburban to the south and increasingly agricultural to the north. Most of the homes are located far apart from each other, on large lots. Relatively few of the homes are located in subdivisions. Forty-six residences that have the potential for noise impacts due to the proposed improvements were identified along the corridor. Two of these residences, the Howard Schaff Residence (27450 SW 177th Avenue) and Clarence J. Parman Residence (27250 SW 177th Avenue), are eligible for listing on the NRHP (also discussed in

[11] The design year 2040 is based on an opening year of 2020.

Section 4.2.2). Non-residential sites with potential to be impacted by the project included three churches, outdoor seating areas at three restaurants, the Grove Inn Country Guesthouse, and a pool at the Redland Country Club. The Florida Audubon Society owns a two-acre unmarked/undesignated parcel, which is located on the west side of Krome Avenue just north of SW 296th Street, near the southern end of the project corridor. This site has no special land use designation (i.e., park, preserve, etc.); however, the land owner has designated the parcel as a bird watching site. There are no public facilities or managed trails at this site, but the property is currently open to the public. Two unimproved SFWMD canal maintenance access roads run parallel to the C-103/Mowry Canal and the C-102/Princeton canal, respectively, crossing Krome Avenue. There are no facilities such as picnic tables, campgrounds, or activity areas where large numbers of people may congregate for long periods of time. Typically, there is only occasional use of these areas; therefore, they are not considered areas of frequent human use. As such, these areas were not considered to be noise sensitive.

Alternatives 3, 4, and 5 would increase roadway capacity by adding one travel-lane in each direction, allowing more vehicles to travel the corridor during peak periods; while Alternatives 1 and 2 would remain a two-lane roadway (although Alternative 2 would provide an additional passing lane along various segments of the project length). Other improvements planned with this project include minor alignment adjustments and intersection improvements that will cumulatively reduce the distance between the noise sensitive sites and the nearest travel lane by as much as 75 feet. Thus, during the design year (2040), the primary source of noise in the area is expected to remain to be the traffic on Krome Avenue.

Design year worst-case traffic noise levels with the No-Build Alternative are predicted to range from 52.1 to 67.8 dB(A). Design year, No-Build noise levels at the two NRHP-eligible sites, the Howard Schaff Residence and the Clarence J. Parman Residence, are predicted to be 56.9 and 66.1 dB(A), respectively. The predicted No-Build noise level at the at the Florida Audubon Society property is 66.1 dB(A).

Design year traffic noise levels with Alternatives 1 and 2 are predicted to range from 53.9 to 67.8 dB(A). With Alternatives 1 and 2, traffic noise levels at the two NRHP-eligible sites are predicted to range from 56.6 to 65.2 dB(A). The noise level with Alternatives 1 and 2 at the Florida Audubon Society property is predicted to be 65.8 dB(A). These noise levels are predicted to be a difference of approximately -1.5 to 4.4 dB(A) from existing and design year No-Build Alternative noise levels.

Design year traffic noise levels with Alternative 3 are predicted to range from 56.5 to 72.2 dB(A). With Alternative 3, traffic noise levels at the two NRHP-eligible sites are predicted to range from 60.5 and 69.7 dB(A). The noise level with Alternative 3 at the Florida Audubon Society property is predicted to be 70.7 dB(A). These noise levels are predicted to be approximately 2.7 to 8.8 dB(A) greater than existing and design year No-Build Alternative noise levels.

Design year traffic noise levels with Alternative 4 are predicted to range from 57.1 to 71.8 dB(A). With Alternative 4, traffic noise levels at the two NRHP-eligible sites are predicted to

range from 60.4 and 69.3 dB(A). The noise level with Alternative 4 at the Florida Audubon Society property is predicted to be 70.4 dB(A). These noise levels are predicted to be approximately 2.3 to 8.4 dB(A) greater than existing and design year No-Build Alternative noise levels.

Design year traffic noise levels with Alternative 5 are predicted to range from 57.3 to 71.7 dB(A). With Alternative 5, traffic noise levels at the two NRHP-eligible sites are predicted to range from 60.6 and 69.2 dB(A). The noise level with Alternative 5 at the Florida Audubon Society property is predicted to be 70.2 dB(A). These noise levels are predicted to be approximately 2.4 to 8.3 dB(A) greater than existing and design year No-Build Alternative noise levels.

The design year (2040) traffic noise levels predicted with the build alternatives were compared to the FDOT NAC (see ***Table 3-4***) and to existing traffic noise levels (see ***Table 3-3***) to assess potential noise impacts associated with the project. Design year traffic noise levels for Alternatives 1 and 2 (typical section widths of 148 feet and 160 feet, respectively) are predicted to approach or exceed the NAC at three residences. With Alternative 3 (the widest typical section width of 206 feet), design year traffic noise levels are predicted to approach or exceed the NAC at 15 residences (including the Clarence J. Parman Residence, a residence eligible for NRHP-listing, represented by RW7) and at the Florida Audubon Society property (represented by Receptor RW1). Alternatives 4 and 5 are predicted to result in noise impacts at 13 residences (including the Clarence J. Parman Residence) and at the Florida Audubon Society property due to their slightly narrower typical sections of 172 feet for Alternative 4 and 148 feet and 166 feet for the suburban and rural typical sections of Alternatives 5, respectively. No sites are expected to experience any substantial noise level increases as defined by the FDOT [i.e., greater than 15.0 dB(A) over existing levels] with the build alternatives.

Since only residential land use, including the NRHP-eligible Clarence J. Parman residence, and the privately-owned Florida Audubon Society property were predicted to be impacted by this project, the applicable FDOT NAC is 66.0 dB(A). No other types of noise sensitive sites were predicted to be impacted by the proposed project. In accordance with FHWA requirements, noise abatement was considered for all noise sensitive locations where design-year traffic noise levels were predicted to equal or exceed the FDOT NAC. Conceptual noise barrier designs were evaluated for each impacted area for each of the applicable build alternatives to determine the most effective location, length, and height that will achieve the desired noise level reduction at reasonable cost. Alternatives 4 and 5 were considered identical for the purposes of the noise barrier analysis since the outside edges of the travel lane for these alternatives are within five feet of each other.

A total of ten noise barriers were evaluated for feasibility and reasonableness. The results of this analysis indicate that construction of the noise barriers appears feasible. However, none of the noise barriers are considered reasonable since they either were unable to reduce noise levels by the FDOT's noise reduction design goal [7.0 dB(A) for at least one benefitted receptor] or their estimated construction cost exceeded the FDOT's cost reasonableness criteria ($42,000 per benefitted receptor site). Thus, none of the noise barriers evaluated for this study are

recommended for further consideration and there are no apparent solutions available to mitigate the noise impacts at any of the 3 to 15 residences (depending upon build alternative) and the Florida Audubon Society property. The traffic noise impacts to these noise sensitive sites are considered to be an unavoidable consequence of the project. The results of the noise barrier analysis are summarized in ***Table 4-6***.

Table 4-6 – Noise Barrier Summary Table

Noise Barrier	Receptors	Reasonableness Criteria - Provides at Least 7 dB(A) Reduction For at Least One Receptor			Reasonableness Criteria - Less than FDOT's Noise Barrier Cost Criteria			Recommendation		
		Alt 3	Alt 4	Alt 5	Alt 3	Alt 4	Alt 5	Alt 3	Alt 4	Alt 5
1E	RE1	No	No	No	N/A	N/A	N/A	Not Recommended	Not Recommended	Not Recommended
2E	RE6, RE7	No	No	No	N/A	N/A	N/A	Not Recommended	Not Recommended	Not Recommended
3E	RE11	No	No	No	N/A	N/A	N/A	Not Recommended	Not Recommended	Not Recommended
1W	RW1	Yes	Yes	Yes	No	No	No	Not Recommended	Not Recommended	Not Recommended
2W	RW3	No	No	No	N/A	N/A	N/A	Not Recommended	Not Recommended	Not Recommended
3W	RW7	No	No	No	N/A	N/A	N/A	Not Recommended	Not Recommended	Not Recommended
4W	RW9, RW10	Yes	Yes	Yes	No	No	No	Not Recommended	Not Recommended	Not Recommended
5W	RW11	No	No	No	N/A	N/A	N/A	Not Recommended	Not Recommended	Not Recommended
6W	RW13	No	No	No	N/A	N/A	N/A	Not Recommended	Not Recommended	Not Recommended
7W	RW35, RW37-RW40	Yes	Yes	Yes	No	No	No	Not Recommended	Not Recommended	Not Recommended

To aid in promoting land use compatibility, a copy of the project's *Noise Study Report*, which provides information that can be used to protect future land development from becoming incompatible with anticipated traffic noise levels, was made available to Miami-Dade County (during the *Draft Environmental Impact Statement* public comment period). In addition, generalized future noise impact contours for the properties in the immediate vicinity of the project have been developed for Noise Abatement Activity Categories B/C and E (i.e., residential/other sensitive land uses and sensitive commercial, respectively). These contours represent the approximate distance from the edge of the nearest proposed travel lane of Krome Avenue to the limits of the area predicted to approach [i.e., within 1.0 dB(A)] or exceed the NAC in the design year 2040. The contours do not consider any shielding of noise provided by structures between the receiver and the proposed travel lanes. Within the project corridor, the distance between the proposed edge of the outside travel lane and the contour are presented in ***Table 4-7***. To minimize the potential for incompatible land use, noise sensitive land uses should be located beyond this distance.

Table 4-7 – Design Year (2040) Noise Impact Contour Distances

Build Alternative	Distance from Proposed Nearest Travel Lane to Noise Contour Line (Feet)	
	71 dB(A) – Activity Category E	66 dB(A) – Activity Category B/C
Alternative 1	65	130
Alternative 2	64	128
Alternative 3	60	122
Alternative 4	63	125
Alternative 5	62	127

4.3.4.1 Construction Noise and Vibration

The FDOT is exempt from local noise and vibration ordinances according to *Section 335.02* of the *Florida Statutes*. Although FDOT policy is to follow local ordinances to the extent that is reasonable, there are no known Miami-Dade County or local ordinances that set specific limitations on construction noise levels applicable to this type of project. During construction of the project, there is the potential for noise impacts to be greater than those resulting from normal traffic operations because heavy equipment is typically used to build roadways. In addition, construction activities may result in vibration impacts. To mitigate those impacts, the contractor will be required to adhere to the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*. Specifications include noise screening guidelines for stationary equipment, exhaust noise, noise from loose equipment parts, and excessive tailgate banging.

No known businesses or other types of properties particularly sensitive to construction noise and/or vibration exist along the project corridor. A reassessment of the project corridor for construction-related noise/vibration impacts to such sites will be performed during design in an attempt to minimize impacts to such sites. Coordination between the FDOT and the owners of any noise or vibration sensitive sites identified during design will occur, and the contractor will adhere to the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*.

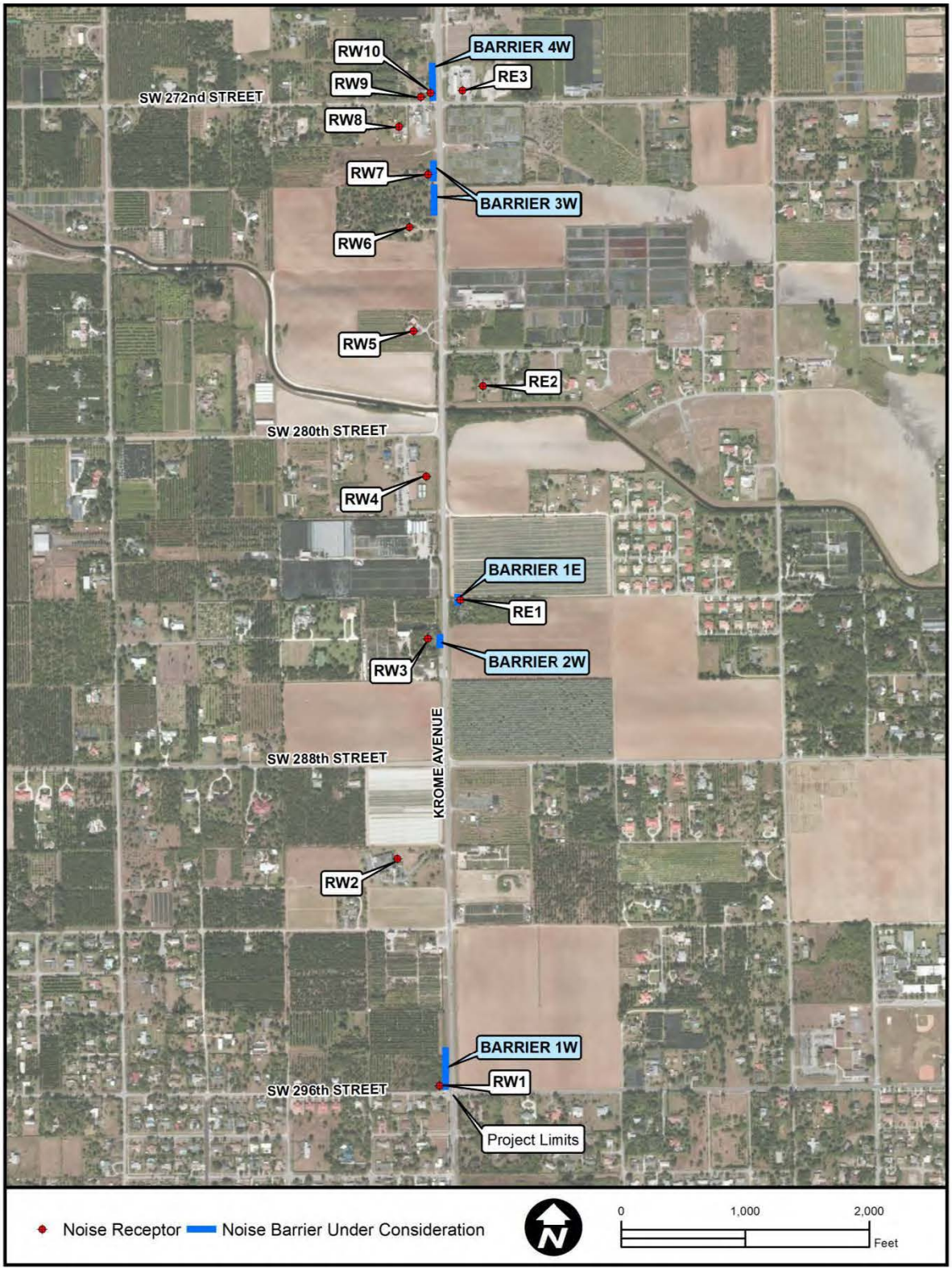


Figure 4-1a – Modeled Noise Receptor Locations and Noise Barriers Under Consideration

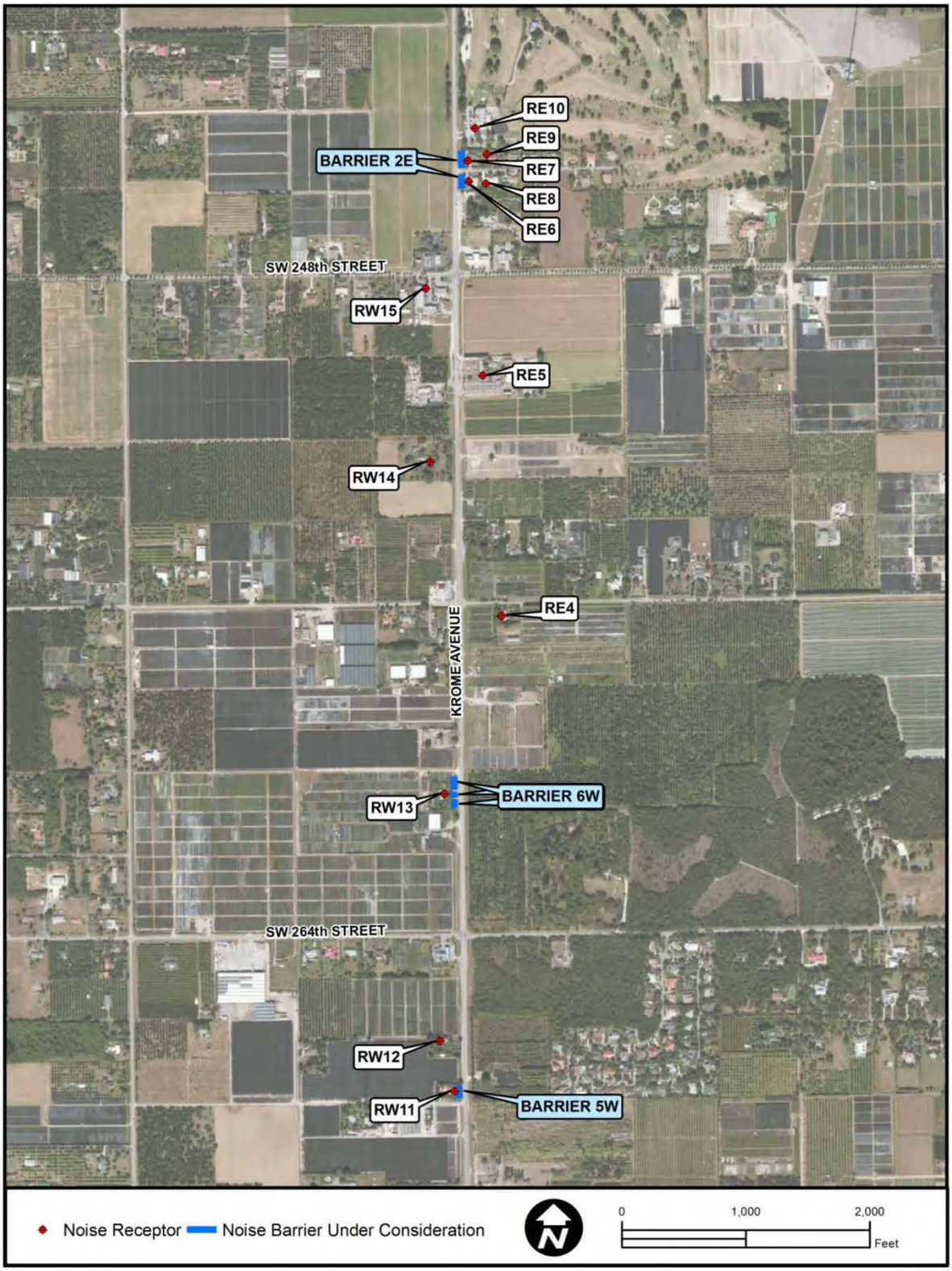


Figure 4-1b – Modeled Noise Receptor Locations and Noise Barriers Under Consideration

Figure 4-1c – Modeled Noise Receptor Locations and Noise Barriers Under Consideration

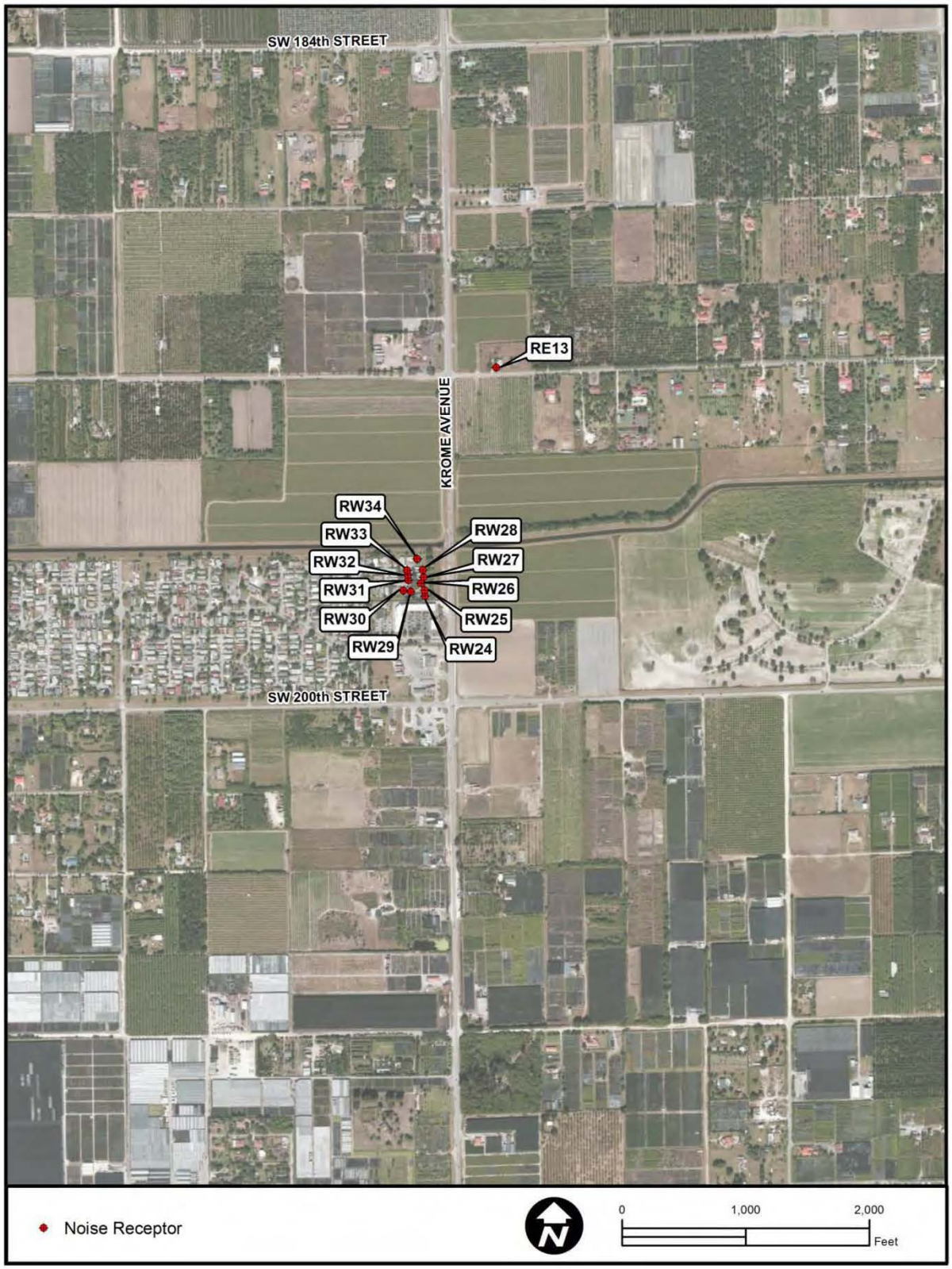


Figure 4-1d – Modeled Noise Receptor Locations and Noise Barriers Under Consideration

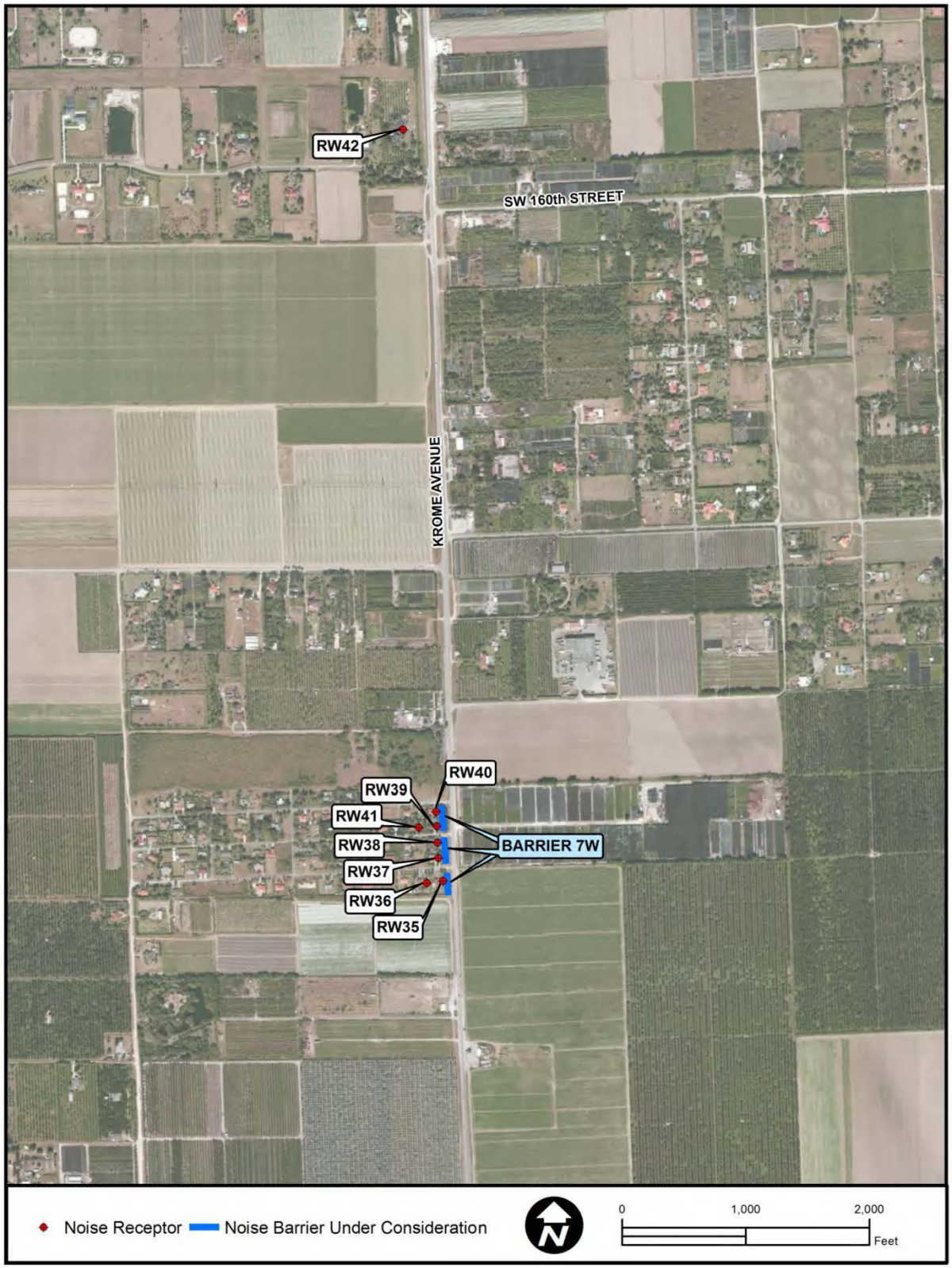


Figure 4-1e – Modeled Noise Receptor Locations and Noise Barriers Under Consideration

Figure 4-1f – Modeled Noise Receptor Locations and Noise Barriers Under Consideration

Table 4-5 – Modeled Noise Receptor Locations and Noise Analysis Results

Representative Model Receptor	Community/Site Name	Type	Description (Noise Abatement Activity Category)	FDOT Noise Abatement Criteria [dB(A)]	Location (Side of Road and Station)	Number of Noise Sensitive Sites	Distance to Nearest Traffic Lane[1]						Predicted Traffic Noise Levels [LAeq1h, dB(A)]						
														Design Year (2040)					
							Existing	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Existing (2004)	No Build	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
East Side Receptors																			
RE1†	28455 SW 177th Avenue	Residence	1st Row Residence (B)	66	East–Sta. 153+17	1	100	61	61	40	49	56	63.4	63.4	**67.8**	**67.8**	**72.2**	**71.8**	**71.7**
RE2	27824 SW 175th Court	Residence	1st Row Residence (B)	66	East–Sta. 170+48	1	312	268	268	247	256	263	55.4	55.4	56.1	56.1	60.0	59.9	60.2
RE3	Redland Grill 17695 SW 272nd Street	Restaurant	Sensitive Commercial (E)	71	East–Sta. 194+27	SLU	170	124	124	103	112	119	60.7	60.7	63.6	63.6	67.7	67.4	67.5
RE4	25605 SW 177th Avenue	Residence	2nd Row Residence (B)	66	East–Sta. 245+76	1	314	285	285	264	273	280	55.9	55.9	55.7	55.7	59.5	59.4	59.4
RE5	25045 SW 177th Avenue	Residence	1st Row Residence (B)	66	East–Sta. 265+10	1	192	172	172	151	160	167	58.1	58.1	59.9	59.9	63.9	63.7	63.7
RE6	17624 SW 245th Terrace	Residence	1st Row Residence (B)	66	East–Sta. 280+74	1	87	112	112	91	99	106	62.3	62.3	61.9	61.9	**66.0**	65.8	65.8
RE7	17625 SW 245th Terrace	Residence	1st Row Residence (B)	66	East–Sta. 282+40	1	82	108	108	87	96	103	64.8	64.8	63.9	63.9	**68.2**	**67.9**	**67.9**
RE8	17604 SW 245th Terrace	Residence	2nd Row Residence (B)	66	East–Sta. 280+88	1	222	247	247	226	234	241	59.0	59.0	58.7	58.7	62.5	62.4	62.5
RE9	17605 SW 245th Terrace	Residence	2nd Row Residence (B)	66	East–Sta. 282+56	1	234	259	259	238	247	254	57.6	57.6	57.6	57.6	61.4	61.4	61.4
RE10	Redland Country Club 24401 SW 177th Avenue	Pool Area	Sensitive Commercial (E)	71	East–Sta. 285+04	SLU	137	163	163	142	151	158	61.0	61.0	60.7	60.7	64.7	64.5	64.5
RE11	23655 SW 177th Avenue	Residence	1st Row Residence (B)	66	East–Sta. 309+20	1	111	125	125	104	113	120	62.5	62.5	62.7	62.7	**66.9**	**66.6**	**66.6**
RE12	Redland Church of the Nazarene 22755 SW 177th Avenue	Church	Place of Worship (C)	66	East–Sta. 342+00	SLU	262	217	217	196	205	212	55.3	55.3	57.9	57.9	61.9	61.7	61.7
RE13	19125 SW 177th Avenue	Residence	1st Row Residence (B)	66	East–Sta. 460+16	1	356	311	311	290	299	306	52.8	52.8	55.2	55.2	58.7	58.7	58.7
West Side Receptors																			
RW1	Florida Audubon Society property	Unimproved Park	Park (C)	66	West–Sta. 113+95	SLU	79	92	92	71	80	87	66.1	66.1	65.8	65.8	**70.7**	**70.4**	**70.2**
RW2	First Baptist of Homestead 29050 SW 177th Avenue	Church	Place of Worship (C)	66	West–Sta. 132+30	SLU	392	405	405	384	393	400	52.1	52.1	53.9	53.9	56.5	57.1	57.7
RW3	28500 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 150+04	1	120	137	137	116	125	132	62.0	62.0	62.0	62.0	**66.1**	65.9	65.7
RW4	Homestead Church of Christ 17700 SW 280th Street	Church	Place of Worship (C)	66	West–Sta. 163+21	SLU	137	160	160	139	148	155	61.6	61.6	61.0	61.0	65.0	64.8	64.7
RW5	27750 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 175+00	1	200	224	224	203	212	219	58.0	58.0	57.8	57.8	61.7	61.6	61.6
RW6*	27450 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 183+20	1	233	256	256	235	244	251	56.9	56.9	56.6	56.6	60.5	60.4	60.6
RW7*	27250 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 187+47	1	70	94	94	73	82	89	66.1	66.1	65.2	65.2	**69.7**	**69.3**	**69.2**
RW8	17750 SW 272nd Street	Residence	2nd Row Residence (B)	66	West–Sta. 191+34	1	319	345	345	324	333	340	55.5	55.5	55.6	55.6	59.1	59.1	59.2
RW9	27190a SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 194+00	1	45	71	71	50	59	66	67.8	67.8	**67.2**	**67.2**	**71.6**	**71.3**	**71.3**
RW10	27190b SW 177th Avenue	Residence	2nd Row Residence (B)	66	West–Sta. 193+73	1	124	150	150	129	138	145	62.3	62.3	62.8	62.8	**66.7**	**66.6**	**66.6**
RW11	26720 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 207+42	1	80	96	96	75	84	91	65.3	65.3	65.0	65.0	**69.5**	**69.1**	**69.1**
RW12	26430 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 211+37	1	182	194	194	173	182	189	58.6	58.6	58.9	58.9	62.9	62.8	62.7
RW13	26030 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 231+33	1	129	135	135	114	123	130	61.4	61.4	62.1	62.1	**66.3**	**66.0**	**66.0**
RW14	25300 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 258+28	1	208	218	218	197	206	213	57.4	57.4	57.9	57.9	61.8	61.7	61.7
RW15	Dairy Queen 24810 SW 177th Avenue	Restaurant	Sensitive Commercial (E)	71	West-Sta. 272+13	SLU	236	212	212	191	200	207	57.8	57.8	59.9	59.9	62.9	62.8	62.8
RW16	23800 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 303+90	1	194	152	152	131	140	147	57.9	57.9	61.1	61.1	65.1	64.9	64.9
RW17	Redland Tavern 17701 SW 232nd Street	Restaurant	Sensitive Commercial (E)	71	West–Sta. 327+90	1	85	108	108	87	96	103	65.8	65.8	64.3	64.3	68.5	68.1	68.2
RW18	Grove Inn Country Guesthouse 22540 SW 177th Avenue	Hotel	Sensitive Commercial (E)	71	West–Sta. 347+58	4	89	115	115	94	103	110	64.4	64.4	63.5	63.5	67.8	67.4	67.5

Table 4-5 – Modeled Noise Receptor Locations and Noise Analysis Results

Representative Model Receptor	Community/Site Name	Type	Description (Noise Abatement Activity Category)	FDOT Noise Abatement Criteria [dB(A)]	Location (Side of Road and Station)	Number of Noise Sensitive Sites	Distance to Nearest Traffic Lane[1]						Predicted Traffic Noise Levels [LAeq1h, dB(A)]						
														Design Year (2040)					
							Existing	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Existing (2004)	No Build	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
RW19	22400 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 352+57	1	123	149	149	128	137	144	61.7	61.7	61.2	61.2	65.3	65.1	65.2
RW20	22300 SW 177th Avenue	Residence	2nd Row Residence (B)	66	West–Sta. 356+37	1	258	284	284	263	272	279	55.4	55.4	55.7	55.7	59.5	59.4	59.5
RW21	17705 SW 218th Street	Residence	1st Row Residence (B)	66	West–Sta. 375+42	1	210	235	235	214	223	230	57.5	57.5	57.3	57.3	61.3	61.1	61.1
RW22	21630 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 377+42	1	227	252	252	231	240	247	57.1	57.1	57.0	57.0	60.7	60.6	60.7
RW23	21600 SW 177th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 378+63	1	281	306	306	285	294	301	56.3	56.3	57.1	57.1	59.7	59.8	59.7
RW24	19800 SW 180th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 441+73	1	196	221	221	200	209	216	57.8	57.8	57.8	57.8	61.7	61.6	61.6
RW25	19800 SW 180th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 442+20	1	197	222	222	201	210	217	57.8	57.8	57.8	57.8	61.7	61.6	61.5
RW26	19800 SW 180th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 442+74	1	222	247	247	226	235	242	56.8	56.8	56.8	56.8	60.7	60.6	60.6
RW27	19800 SW 180th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 443+23	1	200	225	225	204	213	220	57.6	57.6	57.6	57.6	61.5	61.4	61.4
RW28	19800 SW 180th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 443+85	1	210	235	235	214	223	230	57.2	57.2	57.3	57.3	61.1	61.1	61.0
RW29	19800 SW 180th Avenue	Residence	2nd Row Residence (B)	66	West–Sta. 442+12	1	303	328	328	307	316	323	54.2	54.2	54.9	54.9	58.3	58.4	58.4
RW30	19800 SW 180th Avenue	Residence	3rd Row Residence (B)	66	West–Sta. 442+14	1	366	392	392	371	380	387	52.7	52.7	54.1	54.1	56.8	57.3	57.3
RW31	19800 SW 180th Avenue	Residence	2nd Row Residence (B)	66	West–Sta. 443+00	1	328	354	354	333	341	348	53.5	53.5	54.6	54.6	57.6	57.9	57.9
RW32	19800 SW 180th Avenue	Residence	2nd Row Residence (B)	66	West–Sta. 443+44	1	332	357	357	336	345	352	53.4	53.4	54.5	54.5	57.5	57.8	57.8
RW33	19800 SW 180th Avenue	Residence	2nd Row Residence (B)	66	West–Sta. 443+80	1	335	360	360	339	348	355	53.4	53.4	54.5	54.5	57.5	57.8	57.8
RW34	19800 SW 180th Avenue	Residence	1st Row Residence (B)	66	West–Sta. 444+72	1	255	280	280	259	268	275	55.6	55.6	55.8	55.8	59.6	59.5	59.5
RW35	17710 SW 176th Street	Residence	1st Row Residence (B)	66	West–Sta. 513+38	1	80	87	87	66	75	82	65.2	65.2	**66.0**	**66.0**	**70.3**	**70.0**	**69.9**
RW36	17730 SW 176th Street	Residence	2nd Row Residence (B)	66	West–Sta. 513+38	1	213	220	220	199	207	214	57.1	57.1	58.0	58.0	62.0	61.9	61.8
RW37	17701 SW 176th Street	Residence	1st Row Residence (B)	66	West–Sta. 515+40	1	105	103	103	82	91	98	62.9	62.9	64.6	64.6	**69.1**	**68.7**	**68.5**
RW38	17700 SW 175th Street	Residence	1st Row Residence (B)	66	West–Sta. 516+66	1	110	102	102	81	90	97	62.5	62.5	64.7	64.7	**69.2**	**68.9**	**68.6**
RW39	17701 SW 175th Street	Residence	1st Row Residence (B)	66	West–Sta. 518+00	1	113	100	100	79	88	95	62.3	62.3	65.0	65.0	**69.4**	**69.1**	**68.8**
RW40	17700 SW 174th Street	Residence	1st Row Residence (B)	66	West–Sta. 519+13	1	117	101	101	80	89	96	62.0	62.0	64.9	64.9	**69.4**	**69.1**	**68.8**
RW41	17725 SW 175th Street	Residence	2nd Row Residence (B)	66	West–Sta. 517+88	1	261	248	248	227	235	242	55.4	55.4	57.0	57.0	60.9	60.8	61.0
RW42	17705 SW 158th Street	Residence	1st Row Residence (B)	66	West–Sta. 574+31	1	201	185	185	164	173	180	57.6	57.6	59.3	59.3	63.3	63.1	63.1

Notes: [1] = To Krome Avenue mainline, outside lane, distances from the near edge-of-pavement.
SLU = Special Land Use site, Sta. = Station
Bold numbers represent noise levels approaching or exceeding FHWA's NAC
† = The Right-of-Way Relocation Cost Estimate Table designates this parcel (Number 18) as a "Residential Relocation." However, for the purposes of the noise analysis it is assumed that the relocation will not occur since the structure is not physically impacted and the ultimate outcome is at the owner's discretion.
* = These homes are eligible for listing on the NRHP.

4.3.5 Wetlands/Surface Waters

In compliance with Presidential Executive Order 11990, and using assessment methodology, evaluation procedures, and document preparation guidance found in the 4-41 FHWA's Technical Advisory T6640.8A, Title 23, Code of Federal Regulations, Part 777, and the FDOT *PD&E Manual*, Part 2, Chapter 18 – Wetlands (dated April 22, 2013), the Krome South project has been evaluated to determine which build alternatives would impact wetlands or surface water and the extent to which those potential impacts would affect wetland functions and values. If wetland or surface water impacts were determined to be unavoidable, the evaluation included a determination of mitigative measures to compensate for impacts to wetlands. A WER has been prepared for this project and is available for review at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

Extensive assessments of wetland/surface water resources within the project study area have been conducted. An inventory of wetlands/surface waters was performed and includes coverage inside and outside of the existing roadway right-of-way. The inventory utilized the USFWS National Wetland Inventory Database, U.S. Geological Survey Quadrangle Maps, U.S. Department of Agriculture Soil Conservation Service Soil Survey of Miami-Dade County, USFWS Classification of Wetlands and Deepwater Habitats of the U.S., FDOT FLUCFCS, various scale aerial photography, and ground-truthing.

Wetland surveys of the project study area were conducted by project biologists in 2004 and 2010. No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the U.S., as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area. This includes natural wetland communities as well as swales or other manmade stormwater features. Therefore, no impacts (direct or indirect) to jurisdictional wetlands are anticipated as a result of implementation of any of the build alternatives.

Three areas characterized as surface waters consisting of two community types were identified and assessed. These areas consist of an inundated rock mining pit (borrow pit) (SW-1) excavated in Miami oolite rock located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMD's C-102/Princeton canal (SW-2) which crosses Krome Avenue at approximately SW 196th Street; and the SFWMD's C-103/Mowry canal (SW-3) which crosses Krome Avenue just north of SW 280th Street. Direct impacts associated with each build alternative are depicted in ***Table 4-8***. Direct impact estimates are based on the aerial extent of the surface water areas within the proposed construction limits for each proposed build alternative.

Alternative 1 would directly impact approximately 0.14 acres of surface waters; Alternative 2 would directly impact approximately 0.14 acres of surface waters; Alternative 3 would directly impact approximately 0.34 acres of surface waters; Alternative 4 would directly impact approximately 0.21 acres of surface waters; and Alternative 5 would directly impact approximately 0.15 acres of surface waters. Since the waterways will remain virtually intact following the proposed construction activities, the proposed impacts are expected to be minimal. Surface water impact acreages will be further refined as detailed construction plans are developed during the final design phase of the project.

Table 4-8 – Direct Surface Water Impacts

Surface Water ID	FLUCFCS	Description	Direct Surface Water Impacts (ft^2)	Direct Surface Water Impacts (acres)
Alternative 1				
SW-1	742	Former Borrow Pit	0	0
SW-2	510	C-102/Princeton Canal	2,975	0.07
SW-3	510	C-103/Mowry Canal	3,180	0.07
	Alternative 1 Totals		***6,155***	***0.14***
Alternative 2				
SW-1	742	Former Borrow Pit	0	0
SW-2	510	C-102/Princeton Canal	2,975	0.07
SW-3	510	C-103/Mowry Canal	3,180	0.07
	Alternative 2 Totals		***6,155***	***0.14***
Alternative 3				
SW-1	742	Former Borrow Pit	2,250	0.05
SW-2	510	C-102/Princeton Canal	6,100	0.14
SW-3	510	C-103/Mowry Canal	6,520	0.15
	Alternative 3 Totals		***14,870***	***0.34***
Alternative 4				
SW-1	742	Former Borrow Pit	900	0.02
SW-2	510	C-102/Princeton Canal	4,400	0.1
SW-3	510	C-103/Mowry Canal	3,900	0.09
	Alternative 4 Totals		***9,200***	***0.21***
Alternative 5				
SW-1	742	Former Borrow Pit	1,647	0.04
SW-2	510	C-102/Princeton Canal	2,274	0.05
SW-3	510	C-103/Mowry Canal	2,659	0.06
	Alternative 5 Totals		***6,580***	***0.15***

4.3.5.1 Indirect Impacts

Indirect impacts are to be expected for those surface waters that will be directly impacted because a suitable upland buffer does not exist between the remaining portion of the surface water and the proposed improvement. However, indirect impacts to the existing surface water areas along Krome Avenue are anticipated to be minimal due to the implementation of appropriate measures such as sedimentation and erosion control best management practices (BMPs) in accordance with the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction* and, per Section 4.2.7 of the SFWMD's Basis of Review for Environmental Resource Permit Applications. All BMPs associated with roadway construction projects will be properly implemented and maintained throughout all construction activities to avoid/minimize the potential for short-term impacts relating to water quality and wildlife. Although the build alternatives propose additional lanes to accommodate existing and future traffic demands, the additional traffic is not expected to have any major adverse effect on the functions of the surface water areas.

4.3.5.2 Elimination and Reduction (Avoidance and Minimization) of Impacts

As surface water areas exist adjacent to or within close proximity of the existing roadway corridor, the complete avoidance of surface water impacts is neither practicable nor compatible with any safety or operational improvements, and there is substantial demand to justify the need for the proposed improvements along this corridor.

All factors relating to the design and location of the facility, as well as information and issues relevant to the project decision making process were considered, including socio-economic, environmental and engineering issues. The following alignment controls which may influence corridor location were considered:

- Available physical envelope through which an improvement providing acceptable service could be routed;
- Cultural features, including public and private development;
- Natural features (wetlands, protected wildlife, surface waters, etc.) which could be impacted by the project; and
- Logical termini, giving consideration to directness, length, and service.

Each proposed alternative was analyzed and evaluated to a point of rejection or selection as a viable alternative. The impacts of each corridor alignment alternate were identified and expressed in a form suitable for comparison to other corridor alternates, through the use of an evaluation matrix (reference the *Corridor Analysis Report* for this project). Based on the results of the evaluation of alternatives process, it was determined that the existing SR 997/Krome Avenue corridor (Alternate Corridor #3) is the most viable corridor for the improvement project. As a result, this corridor (Krome Avenue) was selected and recommended for further consideration since this corridor best meets the needs for the project and minimizes impacts to wetlands and/or surface waters to the greatest extent practicable, while maintaining safe and sound engineering practices, when compared to the alternative corridors evaluated.

This proposed alignment alternative was further refined by consideration of the proposed roadway profile and associated typical section in order to reduce proposed impacts to wetlands and/or surface waters as much as possible while meeting the safety and transportation needs of the project. In addition, further efforts to reduce impacts will be implemented as detailed construction plans are developed during the permitting and final design phase of the project including the use of BMPs in accordance with the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*.

4.3.5.3 Conceptual Mitigation

Although the project limits have been refined to reduce impacts to the identified surface water areas to the greatest extent practicable, unavoidable impacts to these areas are anticipated to occur. However, no mitigation is required for impacts to the identified surface water areas because no net loss in functional values will result from the proposed improvements and no indirect or cumulative impacts are anticipated to occur (see ***Section 4.3.18*** for a discussion of cumulative impacts). In addition, in relation to wetlands, no mitigation would be required

because no direct impacts to wetlands would occur as a result of this project and no indirect or cumulative impacts are anticipated downstream of the proposed project.

4.3.5.4 Environmental Permitting

Agency coordination for this project occurred through the ETDM Planning and Program Screening, the AN process, and individual conversations with staff at the USACE, SFWMD, USFWS, FDEP, FWC, to discuss project specific information. Agency coordination conducted for this project is also discussed in ***Section 5.2***.

A site assessment with the SFWMD was conducted on March 8, 2005. The purpose of this site investigation was to assess the habitats within the study area, verify the limits of wetland/surface waters, and to discuss potential direct, indirect, and cumulative impacts. During the field site assessment, the SFWMD informally agreed to the limits of surface water habitats which may be impacted as a result of the proposed project. The USACE advised that they are aware of the surface water areas along the study corridor and will investigate the site in further detail following receipt of a Section 404 Department of the Army Dredge/Fill Permit application (USACE staff informally concurred with the SFWMD determination via verbal communication in 2005).

Both the USACE and SFWMD regulate impacts to wetlands/surface waters within the project area. Other agencies, including the USEPA, National Marine Fisheries Service, USFWS, FDEP and FWC, typically review and comment on permit applications. A list of the environmental-related permits that are anticipated to be required for this project, regardless of the alternative selected, is provided in ***Table 4-9*** below.

Table 4-9 – Anticipated Environmental Permits

Permit Type	Issuing Agency
Environmental Resource Permit	SFWMD
Right-of-Way Occupancy Permit	SFWMD
Water Use Permit (Construction Dewatering)	SFWMD
Section 404 Dredge and Fill Permit	USACE
National Pollutant Discharge Elimination System	FDEP

No substantial adverse issues were identified by the regulatory and/or commenting agencies during the preparation of the WER as to applying for and acquiring the necessary environmental/stormwater management permits for this proposed project.

4.3.6 Water Quality

In accordance with the FDOT *PD&E Manual*, Part 2, Chapter 20 – Water Quality (dated February 25, 2004), a Water Quality Impact Evaluation has been conducted for this project. A Water Quality Impact Evaluation Checklist has been prepared and a copy is provided in ***Appendix N***.

All necessary precautions and BMPs pertaining to construction will be followed to prevent adverse impacts to the underlying sole source aquifer (Biscayne Aquifer). The AN response from the USEPA (dated June 30, 2004) also concluded that the project will have no adverse impacts to the sole source aquifer if all necessary BMPs are employed. A copy of this letter has been enclosed in ***Appendix O***.

The wellfields located down-gradient of the project area are separated from the project corridor by Miami-Dade County secondary canals and SFWMD canals such as the C-1W, C-102, C-103N, and C-103, which act as protective hydraulic barriers. Although the wellfields are located down-gradient of the project corridor, based on the distance between the wellfields and the project corridor and the presence of hydraulic barriers (canals), the potential for migration of contamination from the project corridor to the wellfields is not anticipated to occur. Furthermore, due to the distance of the wellfields from the project corridor, no impacts to the individual water withdrawal wells associated with each of these wellfields are anticipated to occur as a result of this project.

Section 3.2.2.8 of Chapter 40E-4 FAC. states that alterations to existing public roadways will be required to treat a volume equal to those specified in Section 3.2.2.2 and the contributing area according to the following options:

- For off-line and on-line treatment systems, including wet detention, which provide storage of the treatment volume off-line from the primary conveyance path of the flood discharges, the area of new pavement must be treated.
- For all other on-line treatment systems, including wet detention, the entire directly connected impervious area contributing to the system, including both on and off-site areas must be treated. Directly connected impervious areas consist of both new and existing pavement which is connected to the treatment system by pavement or pipe and convey untreated stormwater runoff.
- For on-line and off-line percolation systems, the treatment volume is calculated by applying 0.5 inches of runoff over the limits of the right-of-way.

For the Krome Avenue study corridor, the stormwater management system was divided into fifty-three (53) drainage basins. Each of these drainage basins would consist of roadside swales and French drain systems underneath the swales. All of the drainage systems will be self-contained, able to retain the contributing runoff with no offsite discharge.

All of the drainage basins serving the southbound lanes of Krome Avenue will utilize the median swale and the roadside swale located along the outside of the southbound travel lanes. All of the drainage systems serving the northbound lanes will only utilize the roadside swale located along the outside of the northbound lanes. The proposed swales alone are sufficient to retain the required water quality treatment volume per the SFWMD's regulatory criteria. However, French drains will need to be added to the proposed swales in order to provide for flood protection of the proposed roadway corridor to recover the stormwater runoff within 24 hours following a storm event and to retain the runoff from the 25-year and 100-year storms; thus, keeping pre-development offsite discharge rates from being exceeded.

The impact of the preferred alternative on surface water quality will be limited to potential adverse effects of erosion/turbidity during construction. These construction impacts are considered temporary and will be minimized by strict adherence to temporary erosion control features as provided in the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction* and USEPA's National Pollutant Discharge Elimination System permit requirements. Therefore, no mitigation for water quality impacts will be needed. The proposed stormwater facility design will include, at a minimum, the water quantity requirements as required by SFWMD in Rule 40E-4, FAC.

4.3.7 Outstanding Florida Waters

The proposed project does not involve any Outstanding Florida Waters; therefore, no impacts to Outstanding Florida Waters are anticipated as a result of this project.

4.3.8 Contamination

Pursuant to the FHWA's *Technical Advisory T 6640.8A* and in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 12 – Contamination Impacts (dated January 17, 2008), a contamination screening evaluation was performed to evaluate potential impacts from contaminated sites to the project and a CSER was prepared. A copy of the CSER is available for review at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

The proposed right-of-way has been evaluated and potential contaminated concerns have been identified for the proposed build alternatives. For all of the build alternatives (Alternatives 1 through 5), the potential contamination concerns are nearly equivalent due to the proximity of the contamination concerns to the existing roadway (all of the sites are directly adjacent to the existing roadway).

Potential contamination of soil and groundwater by petroleum hydrocarbon compounds has been documented at several locations near the Krome Avenue study corridor. Based on the information provided in the Environmental Data Resources, Inc. report and the regulatory files at the FDEP and DRER EMRD, and their potential to impact the Krome Avenue study corridor, the contamination concerns have been rated High, Medium, or Low. After a review of all available data, such as agency file reviews (Miami-Dade County DRER EMRD and FDEP), the Environmental Data Resources, Inc. database report, aerial photography and city directories, 12 sites of potential contamination concern were identified for the Krome Avenue study corridor: four sites rated as High risk, seven sites rated as Medium risk, and one site rated as Low Risk. The 12 identified potential contamination concerns are summarized in ***Table 3-6*** and shown in ***Figures 3-12*** through ***3-12g*** in Chapter 3.

Since the project corridor is not located within a designated brownfield area and is up-gradient of the Redlands/Leisure City Brownfield srea, no adverse impacts to or from the brownfield are anticipated to occur.

However, the information available in the Environmental Data Resources, Inc. report and/or from the environmental regulatory agencies did not clearly define the presence, location and

extent of site contamination plume within the FDOT's right-of-way. Therefore, further investigation is warranted for some of these sites as discussed herein. The FDOT will utilize the information contained in this report to determine the extent of additional investigation. A Level II Contamination Assessment investigation will be conducted prior to any right-of-way acquisition and/or early in the design phase. Based on the Level II findings, proper measures will be taken through plans notes and/or provisions to be included in project/contract plans to avoid/minimize construction impacts.

An evaluation of construction dewatering activities should be undertaken during the final design and environmental permitting phase of the project. Specialized construction dewatering permits may be required from various state or local regulatory agencies, depending on the proximity to contaminated sites.

In addition, the contractor shall follow applicable FDOT specifications for areas of unforeseen contamination. These specifications require that in the event any hazardous material or suspected contamination is encountered during construction or if any spills caused by construction related materials should occur the contractor shall be instructed to stop work immediately and notify the FDOT Construction Project Manager. The Project Manager will notify the District Contamination Impact Coordinator (District Six Intermodal Systems Management Office) who will in turn coordinate with appropriate environmental regulatory agencies for assistance and resolution of the contaminated areas.

4.3.9 Wild and Scenic Rivers

There are no designated wild and scenic rivers in the study area, as defined by the Wild and Scenic Rivers Act (16 USC 1271-1287); therefore, there are no impacts to wild and scenic rivers.

4.3.10 Floodplains

Pursuant to Presidential Executive Order 11988, entitled "Floodplain Management," USDOT Order 5650.2, and Chapter 23, CFR 650A, and in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 24 – Floodplains (dated January 7, 2008), the project alternatives were analyzed for potential floodplain impacts. Floodplain impacts were incorporated into the WER prepared for this project, which is available on file at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

The FEMA 100-year Base Flood Elevation varies throughout the length of the project from Elevation 8.00 NGVD to Elevation 10.00 NGVD. At the same time, the Design High Water that is to be used for Base Clearance purposes will vary from Elevation 4.00 NGVD to Elevation 6.00 NGVD. During the design phase, however, it will be coordinated with FDOT, SFWMD, and Miami-Dade County DRER EMRD personnel as to what the actual Design High Water should be for Base Clearance purposes used to establish the minimum roadway edge of pavement elevation. Future changes to the watershed within the project vicinity as it relates to the Everglades Restoration Project, climate change, and/or urbanization of the surrounding areas may require the use of a higher Design High Water Elevation than would normally be used. Such was the case for the adjacent sections of Krome Avenue located to the north of the subject

project, where a higher Design High Water elevation was used in order to account for future changes to the surrounding watershed area. This higher Design High Water elevation, which was used to establish the minimum roadway edge of pavement elevation, resulted in this section of Krome Avenue being higher than the FEMA 100-year Base Flood Elevation. These considerations and discussions are factors that will be taken into consideration during the design phase of the project. At any rate, the FDOT requirement for base clearance of Krome Avenue is a minimum of three feet from the Design High Water Elevation to the minimum bottom of roadway base elevation. In addition, the preliminary estimated roadway base thickness is approximately one foot. As a result, the minimum roadway edge of pavement elevation for this section of Krome Avenue will vary from Elevation 8.00 NGVD to Elevation 10.00 NGVD. This means that the minimum edge of pavement elevation is anticipated to vary from one foot below the FEMA 100-year Base Flood Elevation to one foot above the FEMA 100-year Base Flood Elevation. While it may not be possible to be able to maintain the roadway at or above the FEMA 100-year Base Flood Elevation for the entire length of the project corridor, it is a substantial improvement over the existing conditions because the proposed roadway profile will elevate Krome Avenue over the existing footprint. The proposed improvements will result in a substantially improved evacuation route.

The FEMA, in implementing the National Flood Insurance Program, established a system of building guidelines. All local and state building ordinances are based upon these guidelines. This project will comply with all applicable federal, state, and local ordinances relating to floodplains. In accordance with the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*, all BMPs will be utilized during the construction phase of the project for erosion control and water quality considerations. The project alternatives are not expected to cause changes in flood stage and flood limits. Any minor changes, if any, resulting from this project will not result in any adverse impacts on the natural and beneficial floodplain values or any changes in flood risk or damage.

It has been determined, through consultation with federal, state, and local water resource and floodplain management agencies that there is no regulatory floodway involvement on the proposed project and that the project will not support base floodplain development that is incompatible with existing floodplain management programs.

4.3.11 Coastal Zone Consistency

The FDEP has determined that this project is consistent with the Florida Coastal Management Program. A copy of the FDEP's letter (dated May 4, 2004) written in response to the AN has been enclosed as part of the Florida State Clearinghouse response to the AN in ***Appendix P***.

4.3.12 Wildlife and Habitat

This project has been evaluated for potential impacts to threatened and endangered species in accordance with Section 7(c) of the Endangered Species Act of 1973, as amended, and Chapter 68A-27, FAC, "Rules Pertaining to Endangered and Threatened Species." In accordance with the FDOT *PD&E Manual*, Part 2, Chapter 27 – Wildlife and Habitat Impacts (dated October 1, 1991), an ESBA and an *ESBA Supplemental Memorandum* were prepared for this project, which are available for review at the FDOT District Six offices in Miami, Florida and are incorporated by reference.

The proposed right-of-way has been evaluated and habitat/listed species concerns have been identified and assessed for the proposed build alternatives for the Krome South project. Vegetative communities within the project study area were evaluated in order to assess the Krome Avenue study area for the potential occurrence of federal and state-listed protected species (flora and fauna). Four upland vegetative community types were identified along the Krome Avenue study corridor: landscaped, ruderal, and agricultural; non-indigenous vegetation; pine rocklands (only at Owaissa Bauer Pineland Preserve Addition No. 1); and mixed hardwoods (only at the Florida Audubon Society property).

The protected federal animal and plant species identified as having the potential to occur within the project area and evaluated as part of the ESBA, *ESBA Supplemental Memorandum*, and *ESBA Second Supplemental Memorandum* are shown in ***Table 4-10***. The results of the ESBA, *ESBA Supplemental Memorandum*, and *ESBA Second Supplemental Memorandum* indicate that only negligible adverse impacts to federally-protected species are anticipated as a result of the proposed project. For each of the build alternatives (Alternatives 1 through 5), the potential listed species impacts have been determined to be nearly equivalent due to the similar configuration of the estimated limits of construction for each alternative along the study corridor, with the exception of the Owaissa Bauer Pineland Preserve Addition No. 1 and Carter's small-flowered flax habitat, where impacts have been substantially reduced through the design of a minimized roadway typical section, and the Florida Audubon Society property.

Table 4-10 – Federally-Listed Species with the Potential to Occur within the Project Area

Common Name	Scientific name	Federal Status	State Status	Occurrence Potential
Mammals				
Florida bonneted bat	*Eumops floridanus*	E	FE	Moderate
Florida panther	*Puma concolor coryi*	E	FE	Low
West Indian manatee	*Trichechus manatus*	E	FE	Moderate
Birds				
Bald eagle[1]	*Haliaetus leucocephalus*	NL	NL	Low
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E	FE	Low
wood stork	*Mycteria americana*	TE	FTE	Low
Reptiles				
American alligator	*Alligator mississippiensis*	T (S/A)	FT (S/A)	High
eastern indigo snake	*Drymarchon corais couperi*	T	FT	Moderate
gopher tortoise	*Gopherus polyphemus*	C	ST	Low

Table 4-10 – Federally-Listed Species with the Potential to Occur within the Project Area

Common Name	Scientific name	Federal Status	State Status	Occurrence Potential
Insects				
Bartram's scrub-hairstreak butterfly	*Strymon acis bartrami*	E	NL[2]	Low to None
Florida leafwing butterfly	*Anaea troglodyta floridalis*	E	NL[2]	Low to None
Plants				
Blodgett's wild-mercury	*Argythamnia blodgettii*	C	E	High
Mosier's brickell-bush; Mosier's false boneset	*Brickellia mosieri*	E	E	Low to None
deltoid spurge	*Chamaesyce deltoidea* spp. *deltoidea*	E	E	High
Garber's spurge	*Chamaesyce garberi*	T	E	Moderate
semaphore cactus	*Consolea* (=Opuntia) *corallicola*	E	E	Low
Small's milkpea	*Galactia smallii*	E	E	Moderate
sand flax	*Linum arenicola*	C	E	Moderate
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E	E	High
Tiny polygala; Small's milkwort	*Polygala smallii*	E	E	Moderate

Source: USFWS, FWC
E = Endangered; T = Threatened; FE = Federally Endangered; FT = Federally Threatened; (S/A) = Similarity of Appearance; C = Federal Candidate for listing; NL = Not Listed
[1] The bald eagle is not listed by the USFWS or FWC as a protected species, but this species is protected by the *Bald Eagle and Golden Eagle Protection Act* and the *Migratory Bird Treaty Act*.
[2] Bartram's scrub-hairstreak and Florida leafwing butterflies are not listed in the most current *Florida's Endangered and Threatened Species* list. However, since these two species were listed as endangered effective September 11, 2014, it is anticipated that the state listing of these species will be revised to federally endangered during the next revision of the list.

Federally-Listed Species

The project is located within the designated Focal Area for the Florida bonneted bat. Three types of features, royal palms and two man-made structures (a bridge and a water control structure) exist along the project corridor that have the potential to be used as Florida bonneted bat roosting habitat. The two man-made structures (only one of which will be impacted by construction) were examined and appeared to contain no appropriate crevices that could be used by the bat. For the royal palms along the project corridor, based on the preliminary design plans for the preferred alternative (Alternative 5), a total of 196 royal palms (≥20 feet to crown shaft) were identified within the proposed construction footprint to be impacted/removed (note that this number will be refined during final design). Only two of the 196 palms to be impacted were observed to have cavities. One royal palm, designated RP-1, had an opening to a cavity of unknown size approximately 18 feet above ground level. Due to the height from ground level, a close visual observation of the cavity of RP-1 was not possible, so the cavity was observed from ground level with binoculars; no obvious evidence of the bat was observed (e.g., no bats or guano). A second royal palm, designated RP-2, had a cavity opening approximately six feet above ground level. The opening to the cavity of RP-2 was observed to be approximately 2.5 feet in height and 1.5 feet in width within the trunk of the palm; the inside of the cavity also extended upward from the opening into the trunk of the palm by approximately six to nine inches. An examination of the interior of the cavity of RP-2 with a flashlight revealed no apparent evidence of use by bats (e.g., no bats or guano), and the cavity was colonized by a fig (*Ficus* sp.), a whisk-fern (*Psilotum nudum*), and two palm seedlings. Based on the large size of the cavity of RP-2 and its location in

relation to ground level, it is unlikely that it would be used by the bat. The FDOT is committed to coordinating with the USFWS regarding the most current survey protocols for the Florida bonneted bat and re-surveying all of the royal palms along the corridor within the footprint of Alternative 5 (preferred alternative) prior to construction activities for any signs of the Florida bonneted bat. If any signs of the Florida bonneted bat are observed, the FDOT is committed to reinitiating coordination with the USFWS and consultation, if necessary. Therefore, the FDOT and the FHWA have made a determination of "*may affect, but not likely to adversely affect*" for the Florida bonneted bat (only for the preferred alternative, Alternative 5).

Although transient panthers may traverse the project corridor occasionally, the habitat impacted by construction of the proposed project for any of the build alternatives provides minimal panther habitat, and the agricultural lands west of the project are likely acting as a barrier to panther movements into the project corridor. Because of the lack of panther activity and the poor quality of habitat in relation to panther habitat requirements (i.e., intensive agricultural use) proposed to be impacted, the FDOT and the FHWA have made a determination of "*may affect, but not likely to adversely affect*" for the Florida panther.

No manatees were observed during the field surveys, but the probability of occurrence is moderate due to the accessibility of available habitat through the local canal systems (C-102/Princeton and C-103/Mowry canals) bisecting the study corridor. As a portion of these canals may be disturbed by one or more of the project alternatives, BMPs will be implemented in accordance with the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*, and FWC's *Standard Manatee Conditions for In-Water Work* will be employed during all in-water construction activities associated with this project. Therefore, the FDOT and FHWA have made a determination of "*may affect, but not likely to adversely affect*" for the West Indian manatee.

The bald eagle was delisted by the USFWS in August 2007 and the FWC in April 2008. Although the bald eagle is no longer federally or state-listed, this species is still protected under federal regulation by the *Bald Eagle and Golden Eagle Protection Act* and the *Migratory Bird Treaty Act.* There have been no visual occurrences of bald eagles within the project area (fly-overs), and no known nests or observed foraging habitat is located within close proximity to the study corridor. Construction will not substantially reduce available foraging, roosting, or nesting habitat for this species. Therefore, no adverse impacts to the bald eagle are anticipated as a result of the proposed project.

No snail kites were observed during the field surveys and no designated critical habitat for this species exists within the project area. Since no foraging habitat for this species exists in the vicinity of the project corridor (the canal banks along the project corridor are typically very steep and do not provide any foraging habitat), no adverse impacts are anticipated as a result of the build alternatives. Therefore, the FDOT and FHWA have made a determination of "*no effect*" for the Everglade snail kite as a result of the proposed project.

Although the project lies within the Core Foraging Area of three active wood stork colonies located approximately 8.5 miles, 9.3 miles and 17.1 miles northwest of the project corridor, no suitable foraging habitat occurs along the project corridor (the canal banks along the project

corridor are typically very steep and do not provide any foraging habitat). In addition, no wood storks were observed during the field surveys. The only potential impact to wood storks from the proposed project would be temporary disruption of local flight paths from the nesting areas (all greater than eight miles from the project corridor, as noted above) to any nearby CFA due to the construction activities (noise, etc.). However, due to the distance of the nearest colonies from the project corridor and the lack of any suitable foraging habitat in the project area, impacts are very unlikely. Therefore, FDOT and FHWA have made a determination of "*no effect*" for the wood stork as a result of the construction of any of the build alternatives associated with the proposed project.

Due to the presence of habitat (canals) in and adjacent to the study area, the probability of occurrence of the American alligator is high. However, much of the habitat (i.e., the canals) within the limits of the project experiences continual disturbance from adjacent roadway and commercial/residential land use activities minimizing its use by this species. Additionally, it is important to note that no habitat for the American crocodile exists within or adjacent to the project area; therefore, the crocodile was not evaluated as part of this study and no impacts would occur to the crocodile. Typically, alligators will vacate the immediate vicinity of an area undergoing disturbance as a result of construction activities. The FDOT's contractor will be advised of state and local laws regarding the harassment of alligators prior to any construction activities to further reduce the potential for any adverse impact to the American alligator. Therefore, the FDOT and FHWA have made a determination of "*may affect, not likely to adversely affect*" for the American alligator.

The federally-listed threatened eastern indigo snake has been reported as occurring in the nearby Camp Owaissa Bauer property located approximately 500 feet east of the corridor. Therefore, as a precaution, staked silt fence will be erected in the vicinity of the Owaissa Bauer Pineland Preserve Addition No. 1 and the Florida Audubon Society property prior to construction to minimize the probability of individuals wandering into the construction corridor. To protect the eastern indigo snake during construction, the FDOT will incorporate the most current protection guidelines, entitled *Standard Protection Protocols for the Eastern Indigo Snake,* into the final project design and will require that the construction contractor abide strictly to the guidelines during construction. Therefore, the FDOT and FHWA have made a determination of "*may affect, not likely to adversely affect*" for the eastern indigo snake.

The Bartram's scrub-hairstreak and Florida leafwing butterflies occur only within pine rocklands, specifically those that retain their mutual and sole host plant, pineland croton. Critical Habitat for this species is designated at the Owaissa Bauer Pineland Preserve Addition No. 1 site along the project corridor. However, no pineland croton, the larval host plant for both the Florida leafwing and Bartram's scrub-hairstreak butterflies was detected during a survey of the site. Additionally, no Florida leafwing or Bartram's scrub-hairstreak butterflies or evidence of their occurrence were observed. If any signs of these species are observed, the FDOT is committed to re-surveying during design and reinitiating coordination with the USFWS and consultation, if necessary. Therefore, the FDOT and the FHWA have made a determination of "*may affect, but not likely to adversely affect*" for the Florida leafwing and the Bartram's scrub-hairstreak butterflies and their Critical Habitat.

No federally-listed plant species were observed within the study limits. However, the federally-listed endangered Carter's small-flowered flax and deltoid spurge have been recorded by Miami-Dade County within the Owaissa Bauer Pineland Preserve Addition No. 1 property and the plants were observed outside the limits of construction. The Carter's small-flowered flax was observed just beyond the proposed limits of construction for the preferred alternative (Alternative 5 with "Minimization Treatment," and the deltoid spurge was observed approximately 150 feet from the construction limits of the widest build alternative (Alternative 3). No direct adverse impacts to these federally-listed plant species are anticipated as a result of this project. Therefore, the FDOT and the FHWA have made a determination of "*may affect, not likely to adversely affect*" for the Carter's small-flowered flax and a determination of "*no effect*" for the deltoid spurge.

The investigation also indicated that five additional federally-listed plant species were identified as having the potential to exist within the project area, as noted in ***Table 4-10***, above. However, none of these plant species were observed within or immediately adjacent to areas proposed to be impacted from any of the build alternatives. Therefore, the FDOT and FHWA have made a determination of "*no effect*" for these federally-listed plants.

State-Listed Species

Foraging habitat for three state-listed bird species, including the Southeastern American kestrel, tricolored heron and white ibis, is present within the project study area. This was evidenced by direct observations of foraging during the field investigations. Potential impacts to these species, if any, will be limited to temporary disruption of foraging along the fringe vegetation directly adjacent to the construction area. No roosting or nesting habitat for these species was observed for any of these bird species; thus, no adverse impacts to these state-protected avian species are expected to occur as a result of project construction.

The state-protected species of special concern, Florida tree snail, was observed within the Owaissa Bauer Pineland Preserve Addition No. 1 and the Florida Audubon Society property. Prior to vegetation removal or construction activities, FDOT will conduct a biological survey within the limits of the proposed project. Individual snails observed on the trees to be impacted will be collected and relocated a safe distance outside of the areas of proposed impact per FWC guidelines (Shaw, 2006, Tree Snail Relocation Protocol). Therefore, no adverse impacts to this species are anticipated.

Field investigations within the proposed limits of the five build alternatives at the Owaissa Bauer Pineland Preserve Addition No. 1 site revealed the presence of one plant species with federal Candidate status: Blodgett's wild-mercury. Please note that according to the USFWS, plant species with federal candidate status do not receive federal statutory protection, although the USFWS recommends that candidate species are voluntarily protected as if they were federally-listed, if possible. In addition, 27 state-listed protected plant species were observed within or directly adjacent to the proposed study corridor. All of these plants were observed to be present either at the Owaissa Bauer Pineland Preserve Addition No. 1 or at the Florida Audubon Society property. No state and federally-protected plant species were observed to exist at any other location along the study corridor.

Per Section 581.185(8)(c) Florida Statute, statutory protection of state-listed plants is not applicable if the clearing of land is performed by a public agency when acting in the performance of its obligation to provide service to the public excerpted below:

> *(8) EXEMPTIONS.—No provision of this section shall apply to:*
> *(c) The clearing of land by a public agency or a publicly or privately owned public utility when acting in the performance of its obligation to provide service to the public.*

However, individual state-listed plant species will be avoided wherever possible during construction using BMPs and the FDOT's standard protection measures outlined in the latest version of the *FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property)*, which will include the use of temporary fencing to avoid trampling, tire rutting, etc. to any protected plants located near the perimeter of proposed construction activities. In addition, to minimize the potential for adverse impacts to listed plant species, prior to construction, the FDOT will reassess the viability of relocating listed plant species to a suitable area outside of the planned limits of construction, such as other graminoid-dominated areas of the site where these species are known to currently occur. The relocations, if determined to be viable, will be conducted just prior to commencement of roadway construction activities. Prior to proposing any plant relocations, coordination will be conducted with Miami-Dade County EEL Program representatives for approval and to discuss potential recipient sites.

Effect Determination

Based on the results of the ESBA prepared for this project, the FDOT and FHWA have made the following effect determinations for individual species: "*may affect, but not likely to adversely affect*" for the West Indian manatee, American alligator, and eastern indigo snake and a determination of "*no effect*" for the wood stork, Everglade snail kite, deltoid spurge, Garber's spurge, and tiny polygala plants. A copy of the ESBA was submitted by the FDOT to the USFWS for review and concurrence on April 29, 2013. The USFWS issued a letter dated May 21, 2013, in which they concurred with the determination made by the FDOT and the FHWA of "*may affect, but not likely to adversely affect*" for the West Indian manatee and eastern indigo snake. The USFWS also acknowledged the determination made by the FDOT and the FHWA of "*no effect*" for the wood stork, Everglade snail kite, deltoid spurge, Garber's spurge, and tiny polygala plants. Per telephone coordination with Mr. John Wrublik (USFWS), the USFWS no longer comments on a "*no effect*" finding for the American alligator, which is federally listed as threatened due to similarity of appearance to the American crocodile, unless the project also contains habitat for the American crocodile; the Krome South project does not contain any appropriate habitat for the American crocodile. Copies of all correspondence between the FDOT and the USFWS are included in ***Appendix Q***.

Since the original preparation of the ESBA conducted as part of the Krome South project, new information became available in relation to two species with the potential to occur within the Krome South study corridor – the Florida bonneted bat and Carter's small-flowered flax. Additionally, comments were received in reference to the Florida panther during the *Draft Environmental Impact Statement* public comment period for the project. Therefore, a supplemental existing conditions and impact analysis were conducted for these three species,

which were incorporated into an *ESBA Supplemental Memorandum*. Based on the results of the *ESBA Supplemental Memorandum* prepared for this project, the FDOT and FHWA made a determination of "*may affect, but not likely to adversely affect*" for the Florida bonneted bat, Florida panther, and Carter's small-flowered flax for the selected alternative (Alternative 5 with minimization treatment). A copy of the *ESBA Supplemental Memorandum* was submitted by the FDOT to the USFWS for review and concurrence on March 4, 2014. The USFWS issued a letter dated April 3, 2014, in which they concurred with the determination made by the FDOT and the FHWA of "*may affect, but not likely to adversely affect*" for the Florida bonneted bat, Florida panther, and Carter's small-flowered flax. Copies of all correspondence between the FDOT and the USFWS are included in ***Appendix Q***.

Since the preparation of the *ESBA First Supplemental Memorandum* conducted as part of the Krome South project in March 2014, new information became available in relation to two butterfly species and one plant species with the potential to occur within the Krome South study corridor, the Florida leafwing and Bartram's scrub-hairstreak butterflies and Florida brickell-bush. Therefore, a supplemental existing conditions and impact analysis were conducted for these three species, which were incorporated into an *ESBA Second Supplemental Memorandum*. Based on the results of the *ESBA Second Supplemental Memorandum* prepared for this project, the FDOT and FHWA made a determination of "*may affect, but not likely to adversely affect*" for the Florida leafwing and the Bartram's scrub-hairstreak butterflies and their Critical Habitat and a determination of "*no effect*" for the Florida brickell-bush and its proposed Critical Habitat. A copy of the *ESBA Second Supplemental Memorandum* was submitted by the FDOT to the USFWS for review and concurrence on October 24, 2014. The USFWS issued a letter dated December 3, 2014, in which they concurred with the determination made by the FDOT and the FHWA of "*may affect, but not likely to adversely affect*" for the Florida leafwing and the Bartram's scrub-hairstreak butterflies and their Critical Habitat and "*no effect*" for the Florida brickell-bush and its proposed Critical Habitat. Copies of all correspondence between the FDOT and the USFWS are included in ***Appendix Q***.

4.3.12.1 Owaissa Bauer Pineland Preserve Addition No. 1

It is the determination of the FDOT that complete avoidance of the 9.39-acre Owaissa Bauer Pineland Preserve Addition No. 1 is not feasible while providing for the necessary safety and traffic-related improvements. ***Figure 4-2*** depicts the limits of each of the five build alternatives in the vicinity of the Owaissa Bauer Pineland Preserve Addition No. 1 and a summary of the proposed impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 site per each build alternative is shown in ***Table 4-11.***

Table 4-11 – Encroachment into Owaissa Bauer Pineland Preserve Addition No. 1 per Build Alternative

Alternative ID	Impacts (feet^2)	Impacts (acres)
Alternative 1	36,673	0.84
Alternative 2	36,673	0.84
Alternative 3	55,146	1.27
Alternative 4	44,326	1.02
Alternative 5	42,409	0.97

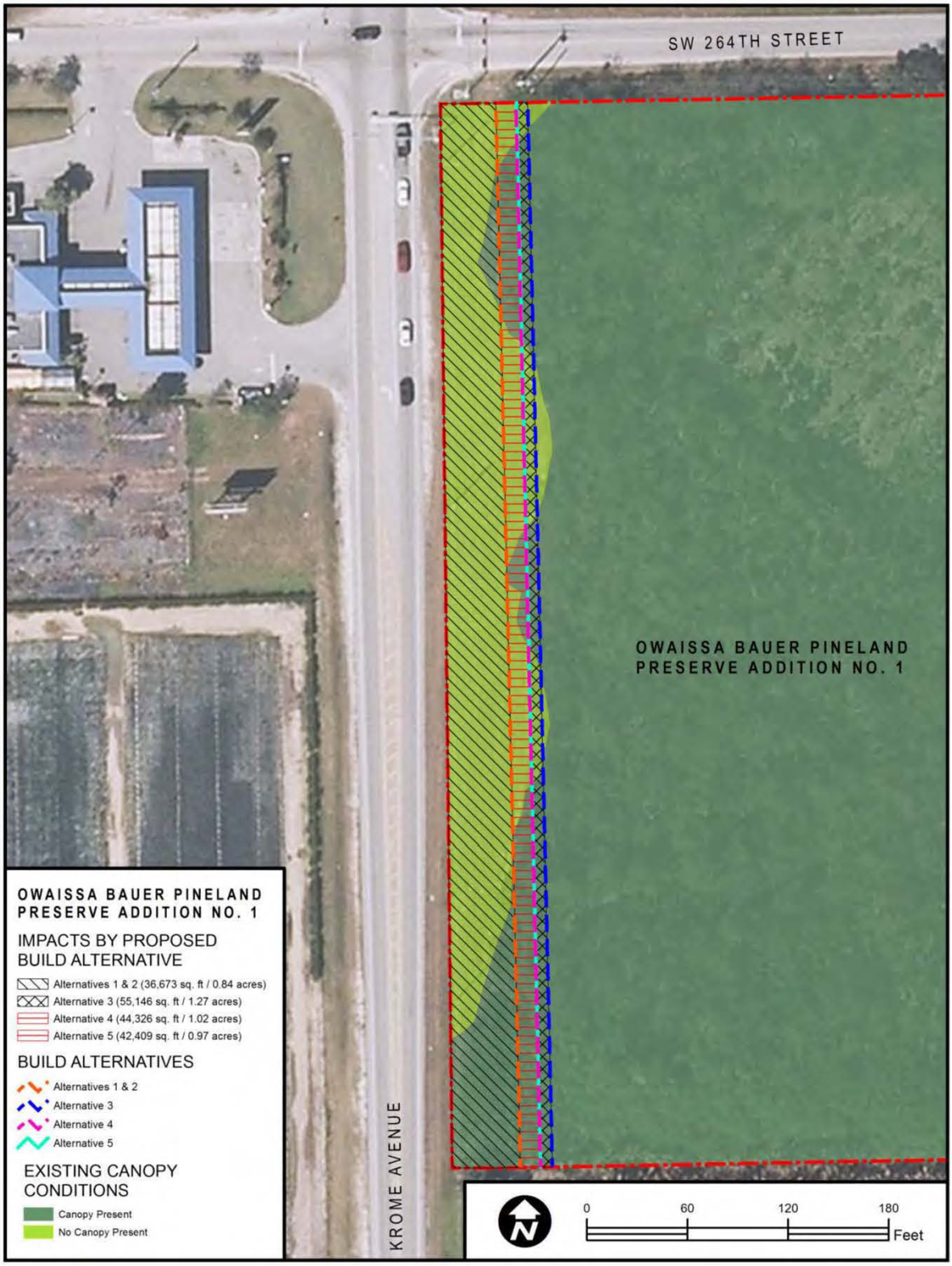
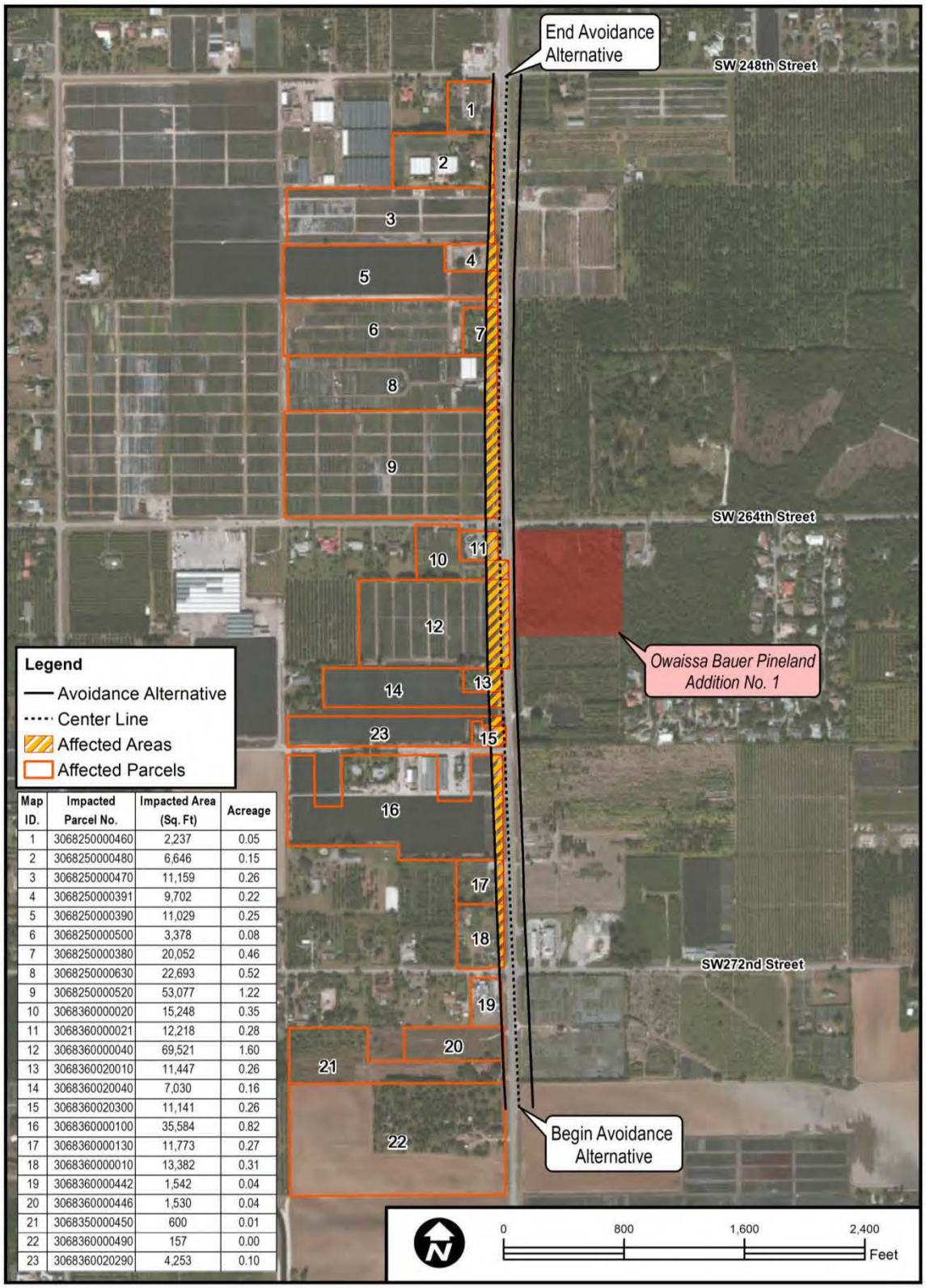


Figure 4-2 – Owaissa Bauer Pineland Preserve Addition No. 1
Impacts by Proposed Build Alternative

Note that as depicted on ***Figure 4-2***, Alternative 3, the widest alternative footprint analyzed, is the most impacting alternative and Alternatives 1 and 2 are the least impacting alternatives that encroach beyond the existing FDOT right-of-way into the EEL site. The total area of potential impact from Alternative 3 is approximately 1.27 acres and the total area of potential impact from Alternatives 1 and 2 (impacts are equal for both alternatives) is approximately 0.84 acres.

Coordination has been conducted with the Miami-Dade County EEL Program representatives. To date, three meetings were held with EEL Program representatives to discuss the Krome Avenue PD&E project. Copies of meeting minutes from each of these meetings have been enclosed in ***Appendix R***. The purpose of the first meeting, which was held on July 20, 2005, was to introduce the project to the EEL Program representatives and its potential to impact the Owaissa Bauer Pineland Preserve Addition No. 1 parcel and receive preliminary feedback from those representatives. Following the meeting, the FDOT requested specific information regarding the parcel from DERM. As a response, DERM issued a "Statement of Significance" letter on April 11, 2006 (see ***Appendix S***) which included a general description of the EEL parcel and copies of the Miami-Dade County EEL Ordinance (Chapter 24-50), Natural Forest Community regulations (Chapter 24-49), Owaissa Bauer Pineland Preserve Addition No.1 Biological Evaluation, Owaissa Bauer Pineland Preserve Addition No. 1 FY 2004-2005 Work Plan and Budget, and the Owaissa Bauer Pineland Preserve Addition No. 1 Plant List (compiled by the Institute for Regional Conservation).

The second meeting held on April 27, 2006, was conducted to further explain the project and discuss the alternatives and potential for on-site mitigation, if needed. In response to the second meeting, the EEL representatives requested specific information regarding each alternative including an aerial overlay showing the limits of construction per alternative, which was submitted to EEL in early June 2006 by FDOT. EEL representatives requested that further evaluation be conducted with the development of an "Avoidance Alternative" to completely eliminate impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 parcel (note that comments received from the USFWS and the FWC through the ETDM Screening of the project also recommended an alternative design to completely avoid impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 parcel). However, upon further analysis by the FDOT, this "Avoidance Alternative" was considered not feasible due to the additional right-of-way impacts and costs (approximately $8.9 Million) associated with the relocations of businesses and residences located on the opposite side of Krome Avenue (see ***Figure 4-3***).



Map ID.	Impacted Parcel No.	Impacted Area (Sq. Ft)	Acreage
1	3068250000460	2,237	0.05
2	3068250000480	6,646	0.15
3	3068250000470	11,159	0.26
4	3068250000391	9,702	0.22
5	3068250000390	11,029	0.25
6	3068250000500	3,378	0.08
7	3068250000380	20,052	0.46
8	3068250000630	22,693	0.52
9	3068250000520	53,077	1.22
10	3068360000020	15,248	0.35
11	3068360000021	12,218	0.28
12	3068360000040	69,521	1.60
13	3068360020010	11,447	0.26
14	3068360020040	7,030	0.16
15	3068360020300	11,141	0.26
16	3068360000100	35,584	0.82
17	3068360000130	11,773	0.27
18	3068360000010	13,382	0.31
19	3068360000442	1,542	0.04
20	3068360000446	1,530	0.04
21	3068350000450	600	0.01
22	3068360000490	157	0.00
23	3068360020290	4,253	0.10

Figure 4-3 – Owaissa Bauer Pineland Preserve Addition No. 1 Avoidance Alternative

Since complete avoidance of the EEL parcel was not possible, additional engineering analysis was conducted resulting in a "Minimization Treatment" that would reduce the potential impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 site to the greatest extent practicable while maintaining safe engineering practices (i.e., roadway geometry, etc.). A third meeting was held at the Owaissa Bauer Pineland Preserve Addition No. 1 site on June 14, 2007 with EEL and MDPROS NAM to discuss the coordination that occurred with the FDOT District VI Internal Design Unit regarding the potential minimization treatment. The proposed minimization treatment included a reduced typical section with a guardrail in the immediate area of the Owaissa Bauer Pineland Preserve Addition No.1 parcel (from the southeast corner of the intersection of Krome Avenue at SW 264th Street south for approximately 750.85 linear feet – Station 212+08.67 to Station 219+59.52) (see Appendix H of the PER for the Concept Plans, which reference the project station numbers). The minimization treatment consists of a reduced outside shoulder/border width in the northbound direction due to the elimination of drainage features (swale) and placement of a guardrail (***Figure 4-4***). This minimization treatment can be applied to all five build alternatives and consists of the following elements, which will be applied to the outside edge of the northbound travel lane:

- Eight-foot (8') paved outside shoulder on the northbound direction
- Five and a half-foot (5.5') border width including guardrail on the northbound direction
- Design Speed is 65 MPH

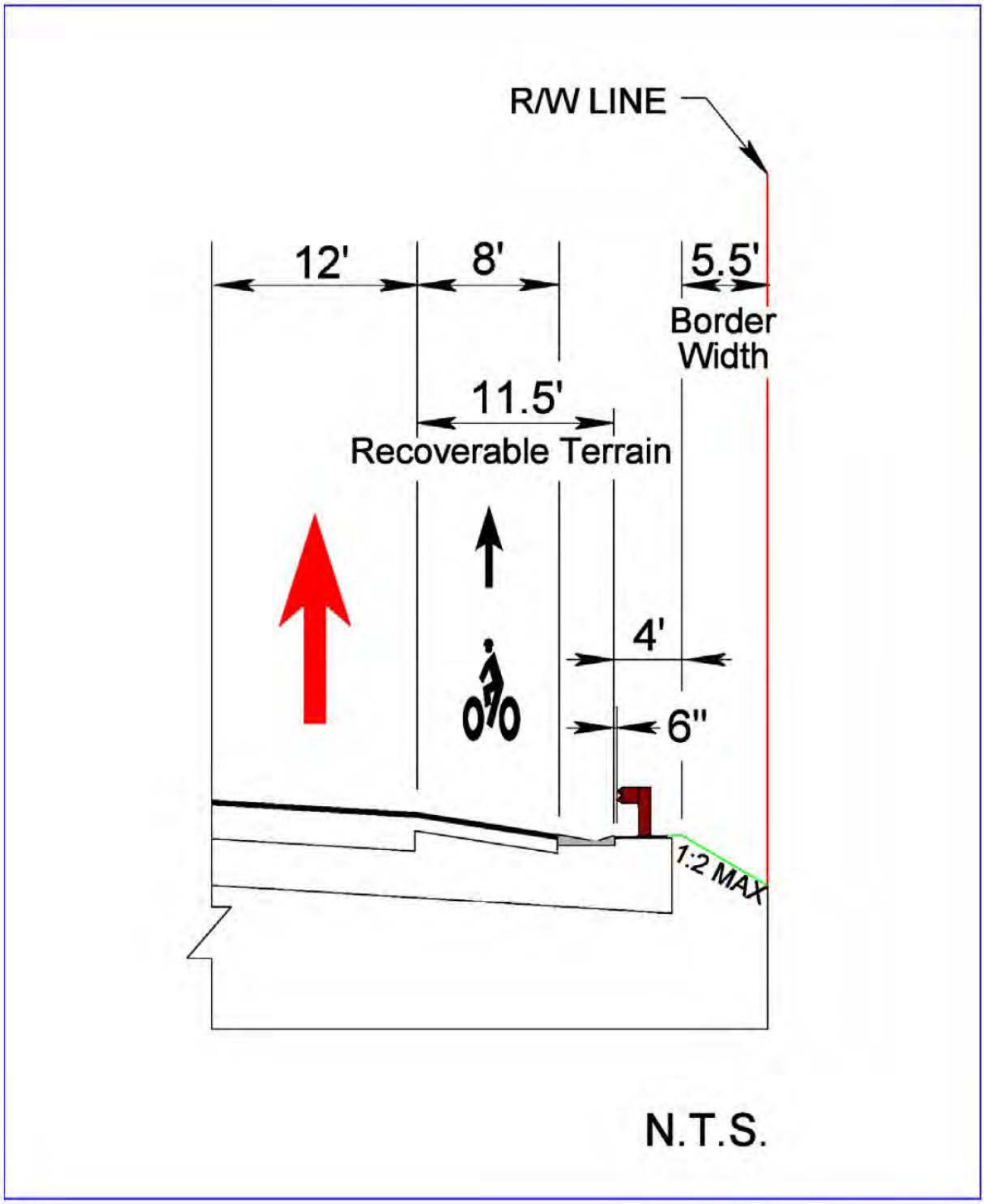


Figure 4-4 – Proposed Owaissa Bauer Minimization Treatment (Typical)

The minimization treatment reduces the overall proposed improvements to Krome Avenue at the Owaissa Bauer Pineland Preserve Addition No. 1 site by a linear distance range of 18 to 31 feet in width and reduces the impact area from a range of approximately 0.84 acres (Alternatives 1 and 2) to 1.27 acres (Alternative 3) to a minimum impact range of approximately 0.53 acres (Alternatives 1 and 2) to 0.82 acres (Alternative 3) depending on which build alternative the treatment is applied to (see ***Table 4-12***, below, and see ***Figure 4-5a*** and ***Figure 4-5b*** for a depiction of the minimization treatment with respect to the build alternatives).

Table 4-12 – Impacts with Minimization Treatment per Alternative

Alternative	Linear Foot Reduction of Impact	Minimized Impacts (acres)	Minimized Impacts (square feet)	Area Preserved (acres)	Area Preserved (square feet)
Alternative 1	21	0.53	23,225	0.31	13,366
Alternative 2	21	0.53	23,225	0.31	13,366
Alternative 3	31	0.82	35,991	0.45	19,730
Alternative 4	21	0.71	31,066	0.31	13,366
Alternative 5	18	0.71	30,797	0.26	11,456

The net difference or additional area preserved per each build alternative is also depicted in ***Table 4-12***, above. With the minimization treatment applied to alternatives 1 and 2, an additional 0.31 acres of the Owaissa Bauer Pineland Preserve Addition No. 1 site will be preserved. With the minimization treatment applied to Alternative 3, an additional 0.45 acres of the site will be preserved. With the minimization treatment applied to Alternative 4, an additional 0.31 acres of the site will be preserved. With the minimization treatment applied to Alternative 5, an additional 0.26 acres of the site will be preserved.

Note that with the minimization treatment applied to the typical sections, the majority of remaining impacts will occur within the westernmost edge of the site, which appears to be regularly disturbed by mowing, vehicle off-road parking and pedestrian traffic. In addition, as part of the minimization treatment, several protection measures will be provided for the remainder of the Owaissa Bauer Pineland Preserve Addition No. 1 site through the addition of guardrail and possibly fencing along the Krome Avenue side of the site (pending approval from the Miami-Dade County EEL Program representatives). These elements of the design will help to keep vehicles from driving or parking on the parcel and subsequently impacting the adjacent EEL parcel; particularly local fruit and vegetable venders, which are known to set up make-shift produce stands along the roadway at this location. These added design elements will act as permanent structural barriers that will function to reduce the potential for indirect impacts from human-induced disturbance (e.g., minimize debris and refuse, pedestrian access, vehicular access, etc.) to occur to the remainder of the EEL parcel. The minimization treatment typical section would be employed at the Owaissa Bauer Pineland Preserve Addition No. 1 site regardless of which alternative moves forward into final design/construction.

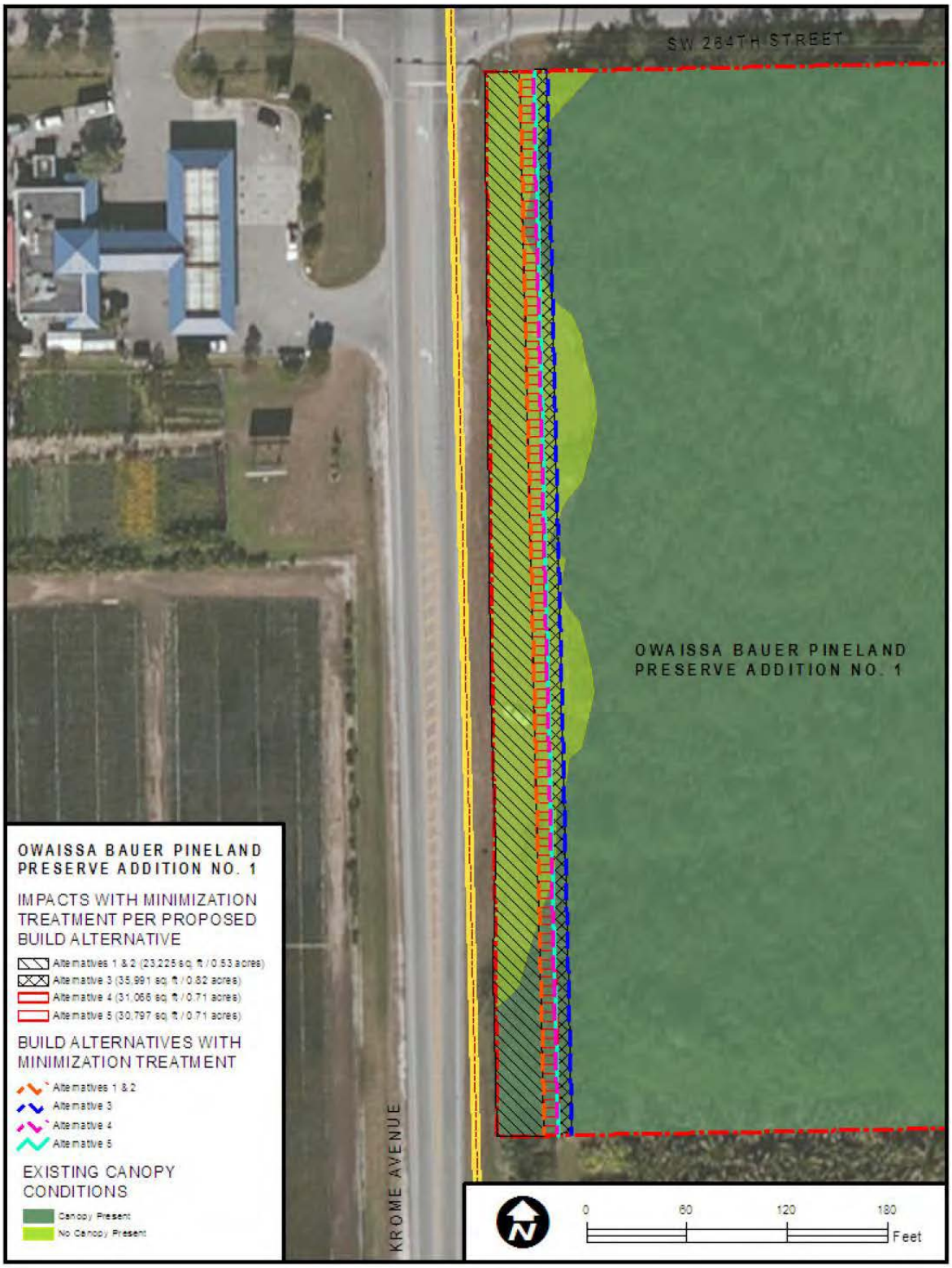


Figure 4-5 – Owaissa Bauer Pineland Preserve Addition No. 1
Impacts by Proposed Build Alternative (with Minimization Treatment)

The 9.39-acre Owaissa Bauer Pineland Preserve Addition No. 1 parcel consists of a 6.61-acre pine rockland community with the remaining 2.78 acres consisting primarily of a weedy herbaceous disturbed area, a paved roadway that runs north-south through the center of the site, and the grassy road shoulder along Krome Avenue (see ***Figure 4-6***). A detailed habitat and plant survey was conducted in 2006 and again in 2010 on the Owaissa Bauer Pineland Preserve Addition No. 1 parcel within the limits of the proposed build alternatives for this project. A summary of the proposed impacts per vegetation community type of each of the five proposed build alternatives with and without the minimization treatment at this location follows in ***Table 4-13.***

Figure 4-6 – View of Weedy Herbaceous Disturbed Area (at Owaissa Bauer Pineland Preserve Addition No. 1)

Table 4-13 – Vegetation Community Impacts within Owaissa Bauer Pineland Preserve Addition No. 1

Alternative	Without Minimization Treatment		With Minimization Treatment	
	Canopy Impacts [acres(feet^2)]	Herbaceous Impacts [acres(feet^2)]	Canopy Impacts [acres(feet^2)]	Herbaceous Impacts [acres(feet^2)]
Alternative 1	0.31 (13,522)	0.53 (23,151)	0.12 (5,054)	0.42 (18,170)
Alternative 2	0.31 (13,522)	0.53 (23,151)	0.12 (5,054)	0.42 (18,170)
Alternative 3	0.72 (31,529)	0.54 (23,618)	0.29 (12,521)	0.53 (23,070)
Alternative 4	0.47 (20,686)	0.54 (23,618)	0.22 (9,412)	0.50 (21,653)
Alternative 5	0.43 (18,809)	0.54 (23,618)	0.22 (9,412)	0.50 (21,653)

The minimization treatment reduces the overall proposed impacts to the existing canopy vegetation by approximately 51 to 61% when comparing it to the areas without the treatment applied, and reduces the overall proposed impacts to the existing herbaceous vegetation by approximately 2 to 21% when compared to the areas without the treatment applied (see ***Figure 4-5*** for a depiction of the minimization treatment with respect to the build alternatives). The minimization treatment reduces the canopy impact from approximately 0.31 acres with alternatives 1 and 2 to a minimum impact of approximately 0.12 acres, a reduction of approximately 61%; from approximately 0.72 acres with Alternative 3 to a minimum impact of approximately 0.29 acres, a reduction of approximately 60%; from approximately 0.47 acres with Alternative 4 to a minimum impact of approximately 0.22 acres, a reduction of approximately 55%; and from approximately 0.43 acres with Alternative 5 to a minimum impact of approximately 0.22 acres, a reduction of approximately 51%. The minimization treatment also reduces the herbaceous impact from approximately 0.53 acres with Alternatives 1 and 2 to a minimum impact of approximately 0.42 acres, a reduction of approximately 21%; from approximately 0.54 acres with Alternative 3 to a minimum impact of approximately 0.53 acres, a reduction of approximately 2%; and from approximately 0.54 acres with Alternatives 4 and 5 to a minimum impact of approximately 0.50 acres, a reduction of approximately 7%. Impact acreages will be further refined as detailed construction plans are developed during the final design phase of the project.

The results of the 2006 survey indicated that the following listed plants were observed within the limits of construction of each of the build alternatives, within the mowed areas along Krome Avenue and along the edge of the forested habitat: pineland golden trumpet, Blodgett's wild mercury, Long Key locustberry, Florida silver palm, christmasberry, Florida shrub thoroughwort, Carter's small-flowered flax, pineland lantana, Simpson's stopper, Bahama ladder brake, Small-leaf snoutbean, Chapman's wild sensitive plant, Everglades greenbrier, tetrazygia, cardinal airplant, rocklands noseburn, and coontie. No federally-listed plants were observed to exist within the limits of construction of any of the build alternatives. The deltoid spurge was observed approximately 150 feet from the limits of construction of the widest build alternative (Alternative 3). Please reference the 2006 survey results map (aerial photographs) depicting the approximate locations of the observed plant species with respect to the limits of each of the five proposed build alternatives and the minimization treatment at this location in ***Figure 3-14*.**

The results of the 2010 survey indicated that the following state-listed plants were observed within the limits of construction of each of the build alternatives, within the mowed areas along Krome Avenue and along the edge of the forested habitat: pineland golden trumpet, Blodgett's wild mercury, white sunbonnet, Florida silver palm, christmasberry, Florida shrub thoroughwort, pineland lantana, Chapman's wild sensitive plant, Everglades greenbrier, tetrazygia, and coontie. No federally-listed plants were observed during the survey. Please reference the 2010 survey results map (aerial photographs) depicting the approximate locations of the observed plant species with respect to the limits of each of the five proposed build alternatives (***Figures 3-15a*** and ***3-15b***, respectively) and the minimization treatment at this location (***Figure 4-5***).

Note that some of the individual plant species were not observed during both surveys since these plants consist of a mixture of perennial and annual species, which means that they germinate, flower, seed and die-off on different schedules. Therefore, some of these plants may appear at a location one year and may be absent at the same location in the subsequent year.

The minimization treatment reduces the impacts to the number of individual protected plants observed to exist within the Owaissa Bauer Pineland Preserve Addition No. 1 parcel to the greatest extent practicable. Although the limits of the minimization treatment are depicted on ***Figure 4-5***, impacts to the existing substrate or any individual plants beyond the proposed back of guardrail will also be minimized to the maximum extent practicable. Based on the observed locations of Carter's small-flowered flax in the 2006 and 2010 surveys, beyond the proposed back of guardrail, this species will likely remain unimpacted with implementation of Alternatives 1, 2, or 5 with the minimization treatment applied.

According to FDACS (Dan Phelps, telephone conversation, June 2006 and reconfirmed in 2011 via statutory review), statutory protection of state-listed plants is not applicable if the clearing of land is performed by a public agency when acting in the performance of its obligation to provide service to the public [Section 581.185(8)(c) Florida Statute], excerpted below:

> *"(8) EXEMPTIONS.—No provision of this section shall apply to:*
> *(c) The clearing of land by a public agency or a publicly or privately owned public utility when acting in the performance of its obligation to provide service to the public."*

However, individual state-listed plant species will be avoided wherever possible during construction using BMPs and the FDOT's standard protection measures outlined in the latest version of the *FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property)*, which will include the use of temporary fencing to avoid trampling, tire rutting, etc. to any protected plants located near the perimeter of proposed construction activities. In addition, to minimize the potential for adverse impacts to listed plant species, prior to construction, the FDOT will reassess the viability of relocating listed plant species to a suitable area outside of the planned limits of construction, such as other graminoid-dominated areas of the site where these species are known to currently occur. The relocations, if determined to be viable, will be conducted just prior to commencement of roadway construction activities. Prior to proposing any plant relocations, coordination will be conducted with Miami-Dade County EEL Program representatives for approval and to discuss potential recipient sites. If required, a relocation plan depicting the source and recipient site(s) as well as details of the method(s) of relocation will be provided to the county for review and approval prior to conducting the relocation activities. In addition and at the discretion of Miami-Dade County EEL Program representatives, the county may opt to relocate any protected plants proposed to be impacted prior to construction.

The FDOT's contractor will install temporary construction fencing at the limits of construction along the Owaissa Bauer Pineland Preserve Addition No. 1 for plant protection purposes and maintain the temporary construction fencing until completion of construction at this location; no impacts will occur to vegetated areas outside of the limits of construction in accordance with the

FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property). Additionally, sod will not be planted in the FDOT right-of-way along the Owaissa Bauer Pineland Preserve Addition No. 1 to avoid future encroachment of any landscaping grass into the adjacent natural areas. Therefore, impacts to state-listed vegetation within the limits of the Owaissa Bauer Pineland Addition No. 1 site will be minimized to the greatest extent practicable.

The FDOT had verbally approached the Miami-Dade County EEL Program representatives with mitigation options to include an option for fencing the remaining habitat, an option for exotic/nuisance treatment within the remaining habitat and an option to remove the existing paved road that exists within the parcel limits. However, per coordination with the Miami-Dade County EEL Program representatives, EEL staff advised that they would not provide any further comments on the project until the FDOT's *Draft Environmental Impact Statement* was released to agencies and the public. The Miami-Dade County EEL Program Director, Cynthia Guerra, provided comments (dated December 30, 2013) on the *Draft Environmental Impact Statement* during the comment period requesting "that FDOT continue to seek out solutions to avoid impacts along the approximately 650 feet of frontage of the Preserve." A copy of this letter has been included in ***Appendix R***. Further coordination with the Miami-Dade County EEL Program is expected to occur during the final design phase of this project.

Since the original preparation of the ESBA conducted as part of the Krome South project, the USFWS proposed to list Carter's small-flowered flax (a plant previously observed at the Owaissa Bauer Pineland Preserve Addition No. 1 site) as an endangered species under the Endangered Species Act as published in the October 3, 2013, Federal Register ["Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the *Brickellia mosieri* (Florida Brickell-Bush) and *Linum carteri* var. *carteri* (Carter's Small-flowered Flax); Proposed Rule," 78 Federal Register 192, 03 October 2013, pp. 61273-61293]. If this rule is finalized as proposed, it would extend the protection of the Endangered Species Act to this plant. Therefore, a supplemental existing conditions and impact analysis were conducted, and an *ESBA Supplemental Memorandum* was prepared. A copy of the *ESBA Supplemental Memorandum*, with a finding of "*may affect, not likely to adversely affect*" for the Carter's small-flowered flax, was submitted by the FDOT to the USFWS for review and concurrence on March 4, 2014. In an email correspondence dated March 18, 2014, from the USFWS, Mr. John Wrublik requested additional information from the FDOT regarding the current location of the plant at the Owaissa Bauer Pineland Preserve Addition No. 1 site and the location of the proposed alternative (Alternative 5 with minimization treatment) and guardrail.

On March 29, 2014, biologists from the FDOT's consultant (URS Corporation) conducted a follow-up detailed survey at the Owaissa Bauer Pineland Preserve Addition No. 1 site for Carter's small-flowered flax. Biologists familiar with Carter's small-flowered flax surveyed the area along the western edge of the site along Krome Avenue for the presence of the plant. A small cluster of the plants (27 individual plants) was observed in the same approximate location of the plants observed in the 2006 survey conducted by FDOT/URS (results previously provided in the ESBA and supplemental memorandum). The location of each individual plant was

recorded with a Trimble sub-foot accuracy global positioning system unit. ***Figure 4-7*** depicts the results of the survey, as well as the existing right-of-way, the proposed right-of-way for Alternative 5 (with and without the minimization treatment applied), and the location of a proposed guardrail along the Owaissa Bauer Pineland Preserve Addition No. 1 site. Based on the results of this survey, Alternative 5 with the minimization treatment applied will not impact the current location of the plants. The FDOT's consultant discussed the results of this survey with Mr. Wrublik (USFWS) by phone on April 3, 2014, and the FDOT submitted the results of this survey to the USFWS via email on April 9, 2014.

Based on all of the information analyzed (ESBA, *ESBA Supplemental Memorandum*, and USFWS correspondence), the FDOT and FHWA made a determinations of "*may affect, but not likely to adversely affect*" for Carter's small-flowered flax for Alternative 5 (with the minimization treatment applied). The USFWS issued a letter dated April 3, 2014, in which they concurred with the determination made by the FDOT and the FHWA of "*may affect, but not likely to adversely affect*" for Carter's small-flowered flax. Copies of all correspondence between the FDOT and the USFWS are included in ***Appendix Q***.

On September 4, 2014, the USFWS published a final rule in the *Federal Register* announcing "endangered" species status for Carter's small-flowered flax ["Endangered and Threatened Wildlife and Plants: *Brickellia mosieri* (Florida Brickell-bush) and *Linum carteri* var. *carteri* (Carter's Small-flowered Flax); Status," 79 Federal Register 171, 04 September 2014, pp. 52567-52575]. This rule will become final effective October 6, 2014.

During the final design phase of the project, in order to approve a proposed easement within the Owaissa Bauer Pineland Preserve Addition No. 1 parcel, the FDEP requires submittal of the "Upland Easement Application" to the State of Florida Board of Trustees of the Internal Improvement Trust Fund for review to apply for easement interest in the land. The application requires a resolution from the Miami-Dade County Board of County Commissioners and written approval from the managing agency (Miami-Dade County EEL and MDPROS). The Acquisition and Restoration Council will need to approve the project (easement) and advise if the project is consistent with the Board of Trustees' Linear Facilities Policy (policy emphasizes avoidance and minimization of impacts to protected uplands). The Acquisition and Restoration Council is a ten-member group with representatives from four state agencies, four appointees of the Governor, one appointee by the FWC, and one appointee by the Commissioner of FDACS. After the Acquisition and Restoration Council approval, the Board of Trustees will have delegated authority to approve the easement. Although the Acquisition and Restoration Council makes the ultimate decision, they normally defer to the recommendations of the managing agency. Justification for the request should accompany the application to include right-of-way impacts based on the different alternatives analyzed, costs of impacts to private property vs. the EEL property, roadway safety and capacity issues, emergency/hurricane evacuation concerns, economic impacts to the area, etc. As mentioned above, the application will commence during the final design phase of the project following receipt of concurrence from Miami-Dade County EEL and MDPROS.

Figure 4-7 – Survey of Carter's Small-Flowered Flax (Linum carteri var. carteri) at Owaissa Bauer Pineland Preserve Addition No. 1 (2014)

4.3.12.2 Florida Audubon Society Property

As previously mentioned, this two-acre unmarked/undesignated site, owned by the Florida Audubon Society, site has no special land use designation (i.e., park, preserve, etc.). However, the land owner has designated the site as a bird watching preserve or sanctuary. In addition, the site does not appear to be actively managed and has both native and exotic hammock species growing throughout, which appear to have been planted in order to attract birds and butterflies for viewing purposes. Since the site is locally notable in regards to bird and butterfly viewing, an assessment was conducted to determine the extent of encroachment to this site as a result of the proposed build alternatives. An aerial photograph depicting the limits of each of the five proposed build alternatives at this location are depicted in ***Figure 4-8***. A summary of the proposed impacts to the site per each build alternative follows in ***Table 4-14.***

Table 4-14 – Encroachment into the Florida Audubon Society Property per Build Alternative

Alternative ID	Impacts (feet^2)	Impacts (acres)
Alternative 1	0	0
Alternative 2	0	0
Alternative 3	4,881	0.11
Alternative 4	0	0
Alternative 5	0	0

Note that as depicted on the figure in ***Figure 4-8***, Alternative 3, the widest alternative footprint analyzed, is the only build alternative that encroaches beyond the existing FDOT right-of-way into the Florida Audubon Society property. The total area of potential impact to the Florida Audubon Society property from Alternative 3 is approximately 0.11 acres (4,881 square feet). Since this parcel is privately-owned by the Florida Audubon Society, the FDOT's normal right-of-way acquisition guidelines would apply if impacts were to occur as a result of this project.

A field assessment and a detailed tree survey were conducted in January 2012, within the limits of the proposed build alternatives in the vicinity of this site (note that the survey included the plants located in FDOT roadway right-of-way and the Florida Audubon Society property). The site does not appear to be actively managed; however, several state-listed plant species exist within its limits. Note that no federally-protected plant species were observed to exist within the limits of this site. In addition, no protected wildlife species were observed within the limits of this site during the time of the field assessments. An aerial photograph depicting the approximate locations of the observed state-protected plant species with respect to the limits of each of the five proposed build alternatives at this location are depicted in ***Figure 3-16.*** A summary of the proposed tree canopy impacts per each build alternative are shown in ***Table 4-15*** and depicted on ***Figure 4-8***, below.

Table 4-15 – Vegetative Canopy[12] Impacts within and Directly Adjacent to the Florida Audubon Society Property

Alternative ID	Canopy Impacts (feet^2)	Canopy Impacts (acres)	State-Listed Plants Affected
Alternative 1	4,464	0.10	*Swietenia mahagoni, Myrcianthes fragrans, Calyptranthes zuzygium, Roystonea sp., Prunus myrtifolia*
Alternative 2	7,356	0.17	*Swietenia mahagoni, Myrcianthes fragrans, Calyptranthes zuzygium, Roystonea sp., Prunus myrtifolia*
Alternative 3	11,677*	0.27*	*Swietenia mahagoni, Myrcianthes fragrans, Calyptranthes zuzygium, Roystonea sp., Prunus myrtifolia, Calyptranthes pallens*
Alternative 4	7,356	0.17	*Swietenia mahagoni, Myrcianthes fragrans, Calyptranthes zuzygium, Roystonea sp., Prunus myrtifolia*
Alternative 5	6,609	0.15	*Swietenia mahagoni, Myrcianthes fragrans, Calyptranthes zuzygium, Roystonea sp., Prunus myrtifolia*

*Note that of the 0.27 acres (11,677 square feet) assessed; only 0.09 acres (3,915 square feet) of canopy will be impacted within the limits of the Florida Audubon Society property. The remainder lies within FDOT right-of-way.

Estimates show that Alternative 1 would directly impact approximately 0.10 acres of vegetative canopy; Alternative 2 would directly impact approximately 0.17 acres of vegetative canopy; Alternative 3 would directly impact approximately 0.27 acres of vegetative canopy; Alternative 4 would directly impact approximately 0.17 acres of vegetative canopy; and Alternative 5 would directly impact approximately 0.15 acres of vegetative canopy. Note that impacts to subcanopy and herbaceous species are included in the canopy impact calculations shown above due to the presence of canopy cover throughout the entire area assessed. Impact acreages will be further refined as detailed construction plans are developed during the final design phase of the project.

As listed in ***Table 4-15***, above, the results of the survey indicated that the following state-listed plants were observed within the limits of construction of each of the build alternatives (see ***Table 4-10*** for a list of state-protected species proposed to be impacted per each alternative): West Indian mahogany, Simpson's stopper, Myrtle-of-the-River, Florida royal palm, West Indian cherry, and spicewood. Within the limits of the Florida Audubon Society property, only West Indian cherry and spicewood exist within the footprint of Alternative 3, the widest alternative analyzed.

[12] Canopy refers to aerial extent of tree canopy cover including state-listed and non-listed plant species.

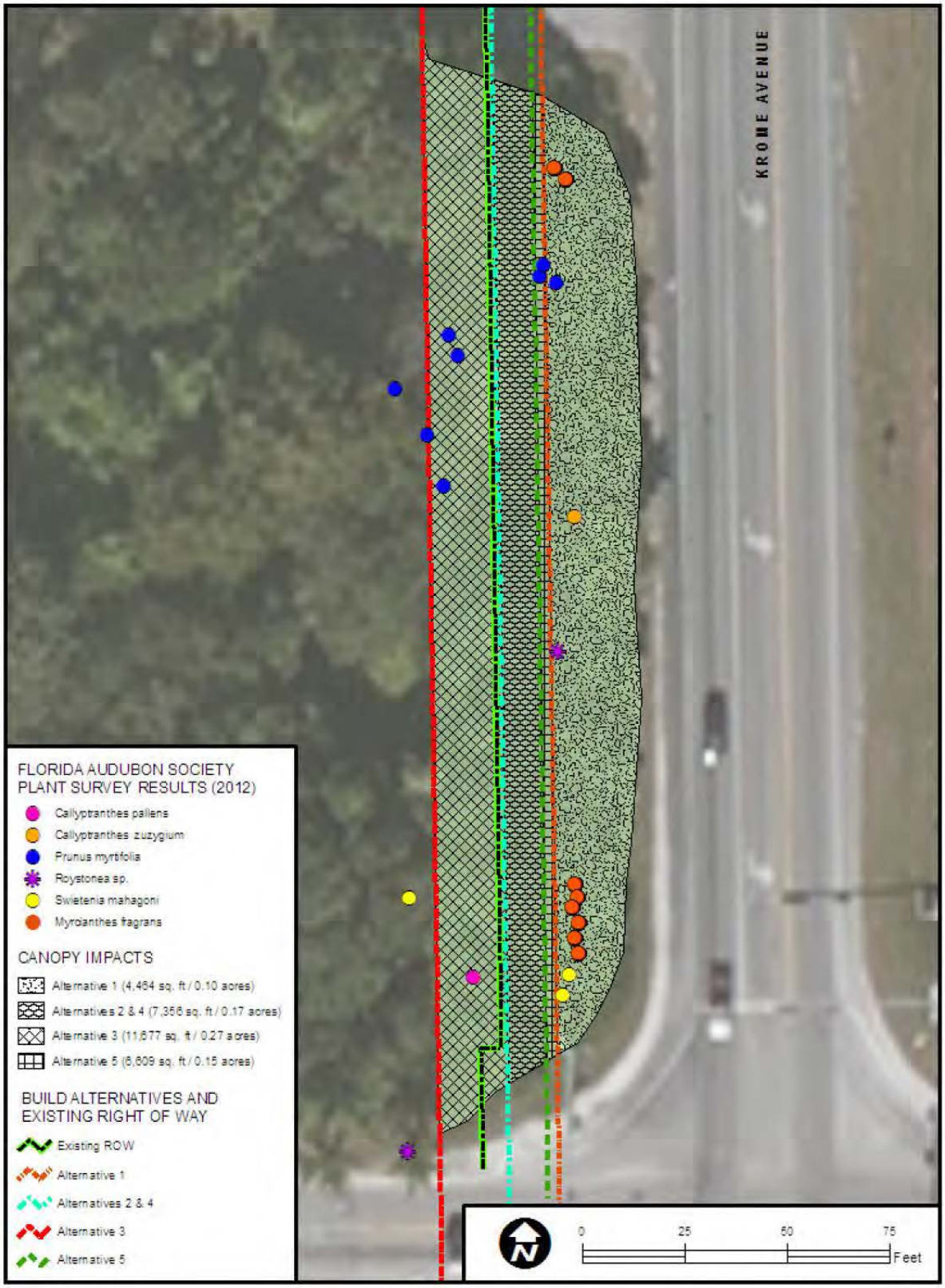


Figure 4-8 – Florida Audubon Society Property Tree Survey (2012)

According to FDACS (Dan Phelps, telephone conversation, June 2006 and reconfirmed in 2011 via statutory review), statutory protection of state-listed plants is not applicable if the clearing of land is performed by a public agency when acting in the performance of its obligation to provide service to the public [Section 581.185(8)(c) Florida Statute], excerpted below:

> *"(8) EXEMPTIONS.—No provision of this section shall apply to:*
> *(c) The clearing of land by a public agency or a publicly or privately owned public utility when acting in the performance of its obligation to provide service to the public."*

However, individual state-listed plant species will be avoided wherever possible during construction using BMPs and the FDOT's standard protection measures outlined in the latest version of the *FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property)*, which will include the use of temporary fencing to avoid trampling, tire rutting, etc. to any protected plants located near the perimeter of proposed construction activities. In addition, to minimize the potential for adverse impacts to listed plant species, prior to construction, the FDOT will reassess the viability of relocating listed plant species to a suitable area outside of the planned limits of construction. The relocations, if determined to be viable, will be conducted prior to roadway construction. The FDOT will coordinate with the Florida Audubon Society to coordinate any relocation's on Society property (outside of FDOT right-of-way). Prior to proposing any plant relocations within the limits of the Florida Audubon Society's property, coordination will be conducted to discuss potential recipient sites. If required, a relocation plan depicting the source and recipient site(s) as well as details of the method(s) of relocation will be provided to the Florida Audubon Society for review and approval prior to conducting the relocation activities. In addition and at the discretion of the Florida Audubon Society, the Society may themselves opt to relocate any protected plants proposed to be impacted prior to construction. Coordination with the Florida Audubon Society will continue during the final design phase of the project.

The FDOT's contractor will install temporary construction fencing at the limits of construction along the Florida Audubon Society property for plant protection purposes and maintain the temporary construction fencing until completion of construction at this location; no impacts will occur to vegetated areas outside of the limits of construction in accordance with the *FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property)*. Additionally, sod will not be planted in the FDOT right-of-way along the Florida Audubon Society property to avoid future encroachment of any landscaping grass into the adjacent natural areas. Therefore, impacts to state-listed vegetation along the study corridor as well as within the limits of the Florida Audubon Society property will be minimized to the greatest extent practicable.

Preliminary coordination efforts have been conducted with the Florida Audubon Society through the CAC meetings held for this project as part of the public involvement process. A representative of the Florida Audubon Society, Ms. Cynthia Guerra, was a designated member of the CAC meetings. Please refer to ***Section 5.3.1*** for additional information relating to the CAC meetings.

4.3.13 Essential Fish Habitat

Coordination with National Marine Fisheries Service has occurred through the ETDM Screening Tool and direct conversations with National Marine Fisheries Service staff. The ETDM comment stated that the proposed project would not impact areas that support National Marine Fisheries Service trust resources (see ***Appendix M*** for ETDM comments). The proposed project does not involve any areas designated as Essential Fish Habitat; therefore, coordination per the Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq.) does not apply to this project.

4.3.14 Farmlands

In accordance with the FDOT *PD&E Manual*, Part 2, Chapter 28 – Farmlands (dated May 11, 2010), the FDOT has coordinated the evaluation of farmland conversion impacts for the project with the U.S. Department of Agriculture NRCS. The acreage of farmland impacted by each of the five proposed alternatives was calculated using GIS. The process included clipping the NRCS soils layer using each alternative's footprint and estimating the acreage of the soil units designated as "Farmlands of Unique Importance" by the NRCS. The GIS results were forwarded to the NRCS to complete the *Farmland Conversion Impact Rating for Corridor Type Projects* (Form NRCS-CPA-106). The form was completed on January 9, 2012 (see ***Appendix T***). All five alternatives intersect the same map units and the relative values of the Farmland (Part V) are very similar (see ***Appendix T***). The only difference was the acreage distribution of Unique Farmland soils for each alternative (***Table 4-16***). For each build alternative, the potentially converted farmland was assigned a Land Evaluation Information Criterion Relative Value ranging from 19.7 points (Alternatives 1, 2, 4, and 5) to 19.9 points (Alternative 3) out of 100 (Part V). The FDOT determined a maximum Corridor Assessment Criteria score of 60 (out of 160) (Part VI), and thus, the Total Points score ranged from 79.7 points (Alternative 1, 2, 4, and 5) to 79.9 points (Alternative 3) out of 260. In accordance with Chapter 28-2.4.4 of the *PD&E Manual*, a total score of less than 160 is considered as minimal impacts to farmlands and no additional evaluation is necessary.

Table 4-16 – Acreage of Unique Farmland Impact Associated with Right-of-Way Acquisition for Road Widening

Proposed Design Alternatives	Biscayne gravelly marl, drained	Krome very gravelly loam	Chekika very gravelly loam	TOTAL
Alternative 1	0.99	24.58	0.85	26.42
Alternative 2	1.35	26.82	0.85	29.02
Alternative 3	1.71	56.24	2.46	60.41
Alternative 4	1.58	36.72	1.20	39.50
Alternative 5	0.99	26.01	0.89	27.89

4.3.15 Construction

Construction activities for the proposed reconstruction of Krome Avenue will have short-term air, noise, vibration, water quality, traffic flow, and visual effects for those residents and travelers within the immediate vicinity of the project.

Construction activities for the proposed action may potentially have short-term air quality impacts within the immediate vicinity of the project. Construction activities may generate temporary increases in air pollutant emissions in the form of dust from earthwork and unpaved roads and smoke from open burning. Such emissions and potential impacts will be minimized by adherence to all applicable state and local regulations and to the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*.

Noise and vibration effects will be from the heavy equipment movement and construction activities, such as pile driving and vibratory compaction of embankments. Noise control measures will include those contained in the *FDOT Standard Specifications for Road and Bridge Construction* in addition to those recommended in ***Section 4.3.4.1*** of this document. Adherence to local construction noise and/or construction vibration ordinances by the contractor will also be required where applicable.

Water quality effects resulting from erosion and sedimentation will be controlled in accordance with the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction* and through the use of BMPs.

Maintenance of traffic and sequence of construction will be planned and scheduled to minimize traffic delays throughout the project. Signs will be used to provide notice of access to local businesses and other pertinent information to the traveling public. All provisions of the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction* will be followed.

Construction of the roadway and bridges requires excavation of unsuitable material (muck), placement of embankments, and use of materials, such as limerock, asphaltic concrete, and portland cement concrete. Unsuitable excavated material will be disposed of in accordance with the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*. Temporary erosion control features, as specified in the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*, Section 104, would consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, turbidity barriers and berms.

4.3.16 Global Climate Change

Greenhouse gasses cause a global phenomenon in which heat is trapped in the earth's atmosphere. Because atmospheric concentration of greenhouse gasses continues to climb, our planet will continue to experience climate-related phenomena. For example, warmer global temperatures can cause changes in precipitation and sea levels. The burning of fossil fuels and other human activities are adding to the concentration of greenhouse gasses in the atmosphere.

Many greenhouse gasses remain in the atmosphere for time periods ranging from decades to centuries.

To date, no national standards have been established regarding greenhouse gasses, nor has the USEPA established criteria or thresholds for ambient greenhouse gas emissions pursuant to its authority to establish motor vehicle emission standards for CO2 under the Clean Air Act. greenhouse gasses are different from other air pollutants evaluated in the Federal environmental reviews because their impacts are not localized or regional due to their rapid dispersion into the global atmosphere, which is characteristic of these gases. The affected environment for CO2 and other greenhouse gas emissions is the entire planet. In addition, from a quantitative perspective, global climate change is the cumulative result of numerous and varied emissions sources (in terms of both absolute numbers and types), each of which makes a relatively small addition to global atmospheric greenhouse gas concentrations. In contrast to broad scale actions such as actions involving an entire industry sector or very large geographic areas, it is difficult to isolate and understand the greenhouse gas emissions impacts for a particular transportation project. Furthermore, presently there is no scientific methodology for attributing specific climatological changes to a particular transportation project's emissions.

Under NEPA, detailed environmental analysis should be focused on issues that are significant and meaningful to decision-making (40 CFR 1500.1(b), 1500.2(b), 1500.4(g), and 1501.7). FHWA has concluded, based on the nature of greenhouse gas emissions and the exceedingly small potential greenhouse gas impacts of the proposed action that the greenhouse gas emissions from the proposed action will not result in "reasonably foreseeable significant adverse impacts on the human environment" (40 CFR 1502.22(b)). The greenhouse gas emission from the project build alternatives will be insignificant, and will not play a meaningful role in a determination of the environmentally preferable alternative or the selection of the preferred alternative. More detailed information on greenhouse gas emissions "is not essential to a reasoned choice among reasonable alternatives" (40 CFR 1502.22(a)) or to making a decision in the best overall public interest based on a balanced consideration of transportation, economic, social, and environmental needs and impacts (23 CFR 771.105(b)).

This document does not incorporate an analysis of the greenhouse gas emissions or climate change effects of each of the alternatives because the potential change in greenhouse gas emissions is very small in the context of the affected environment. Because of the insignificance of the greenhouse gas impacts, those local impacts will not be meaningful to a decision on the environmentally preferable alternative or to a choice among alternatives. For these reasons, no alternatives-level greenhouse gas analysis has been performed for this project.

However, climate adaptation is an important consideration in the design of projects, particularly when the project is located on an evacuation route. Specifically, the adequacy of the roadway elevation to address the potential for increased flooding should be considered. This project will comply with the current FDOT *Plans Preparation Manual* and design standards, which were recently updated to incorporate more stringent requirements in many areas of roadway design including windloading resistance and improved materials strength of permanent and frangible

features such as signage, poles, and traffic signals, and measures to address adequate pavement design to accommodate potential storm event flooding.

4.3.17 Indirect Impacts

Please note that indirect impacts with respect to the "Affected Environment" are previously discussed within the respective sections of this document if applicable.

CEQ regulations define indirect effects as effects which:

> *… are also caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems including ecosystems. 40 C.F.R. §1508.8.*

As discussed herein, growth in the project area and the pattern of land use, population density and growth rate are primarily a function of the Miami-Dade CDMP. The CDMP contains a broad suite of policies directing development within the UDB, discouraging sprawl and protecting agricultural lands. Miami-Dade County has recently conducted a review of the CDMP through the EAR process and has confirmed the efficacy of the CDMP to manage and direct growth to areas within the UDB.

Summary of Growth Management Changes

The Florida Local Government Comprehensive Planning and Land Development Act has been revised since the Notice of Intent to prepare an Environmental Impact Statement was published in the Federal Register on November 1, 2005 for this project. The revised act is denominated the Community Planning Act. The changes are numerous, devolve more decision-making authority to local governments, streamline the comprehensive plan amendment process and limit state review of proposed comprehensive plan amendments to enumerated agencies with jurisdiction over important state resources and facilities. Local governments are still required to maintain comprehensive plans and conform development decisions to those plans and may maintain concurrency systems for transportation facilities. FDOT is a state review agency with jurisdiction to comment on transportation resources and facilities of state importance.

In the event a state agency provides comments on a proposed comprehensive plan amendment, that agency must specify how the amendment will make the alleged adverse impact and identify how it can be eliminated, reduced, or mitigated. If not resolved, those comments can form the basis of the agency to challenge to the amendment. The comments from state agencies are limited to specific subject matter areas within the purview of the state agency. The FDOT may comment only on issues within its jurisdiction as related to transportation resources and facilities of state importance. The SIS system is a facility of state importance.

Concurrency

Miami-Dade County conducted a required periodic review of its CDMP through the EAR process and adopted its 2010 EAR in March 2011. The EAR did not identify any major issues with the adopted concurrency management process and did not propose changes to it. The County is currently working on its EAR-based CDMP amendments, which do not include changes to the concurrency system. No changes to the roadway classification of Krome Avenue were proposed in the EAR.

The CDMP continues to show Krome as 4 lanes for its entire length on the 'Planned Year 2025 Roadway Network' map. Krome continues to be identified as a State Principal Arterial on the 'Roadway Functional Classification' map for 2025. Krome remains designated as a Major Route on the 'Designated Evacuation Routes – 2025' map in the CDMP. On the 'Planned Roadway Network LOS – 2025' map Krome is shown operating variously at LOS D, E or F in the project area.

Krome Classification – A Significant Roadway

Krome Avenue is Miami-Dade County's westernmost roadway of statewide significance. The CDMP recognizes this status and classifies this roadway as a state principal arterial roadway. The state likewise recognizes Krome Avenue's significance. The FDOT has designated Krome Avenue a corridor in the Florida SIS that was developed to address requirements for a National Highway System implemented by Congress under the Intermodal Surface Transportation and Efficiency Act of 1991. Krome Avenue has been designated an emergency evacuation route for residents and the transient population of southern and western Miami-Dade County and provides an alternative evacuation route for Monroe County and the Florida Keys. Krome Avenue is a regional connector and the main route to transport agricultural products from southern Miami-Dade to northern Florida and other states.

The Miami-Dade MPO LRTP has been updated since the Notice of Intent to prepare an Environmental Impact Statement was published in the Federal Register on November 1, 2005 for this project. In the 2035 LRTP Krome Avenue is shown as a 2035 Cost Feasible Segment Improvement and the various Krome segments are shown as part of the 52 projects that satisfy the criteria for Regional Projects. Krome is identified as a Regional Arterial Facility.

Limited Potential for Growth Inducing Effects due to Adopted Comprehensive Development Master Plan Policies

For the most part, the Krome Avenue South study corridor lies just west and outside of the UDB (the southern-most portion of the project limits lies within the UDB). The Miami-Dade County CDMP currently contains substantive policies to discourage urban sprawl and urban development outside of the UDB, particularly in areas of the county that are designated under Agriculture, Open Land, or Environmental Protection. The Krome South project corridor is surrounded by lands designated "Agriculture" (outside of the UDB) or "Estate density" (within the UDB). A copy of the current CDMP Adopted 2015 and 2025 Land Use Plan is shown in

Figure 4-9. The analysis of the potential for growth inducing effects resulting from the four-laning of Krome Avenue is based on reliance upon the CDMP growth management policies, which redirect future development within UDB and discourage urban sprawl in lands designated under Agriculture, Open Land, or Environmental Protection. These policies recognize limited exceptions for the provision of public services and facilities in such areas when necessary to protect the public health, safety, and welfare plus serve the localized needs of the non-urban areas; the county and the Florida Department of Community Affairs (now known as the FDEO) have determined that the widening of Krome Avenue to four lanes is consistent with these policies.

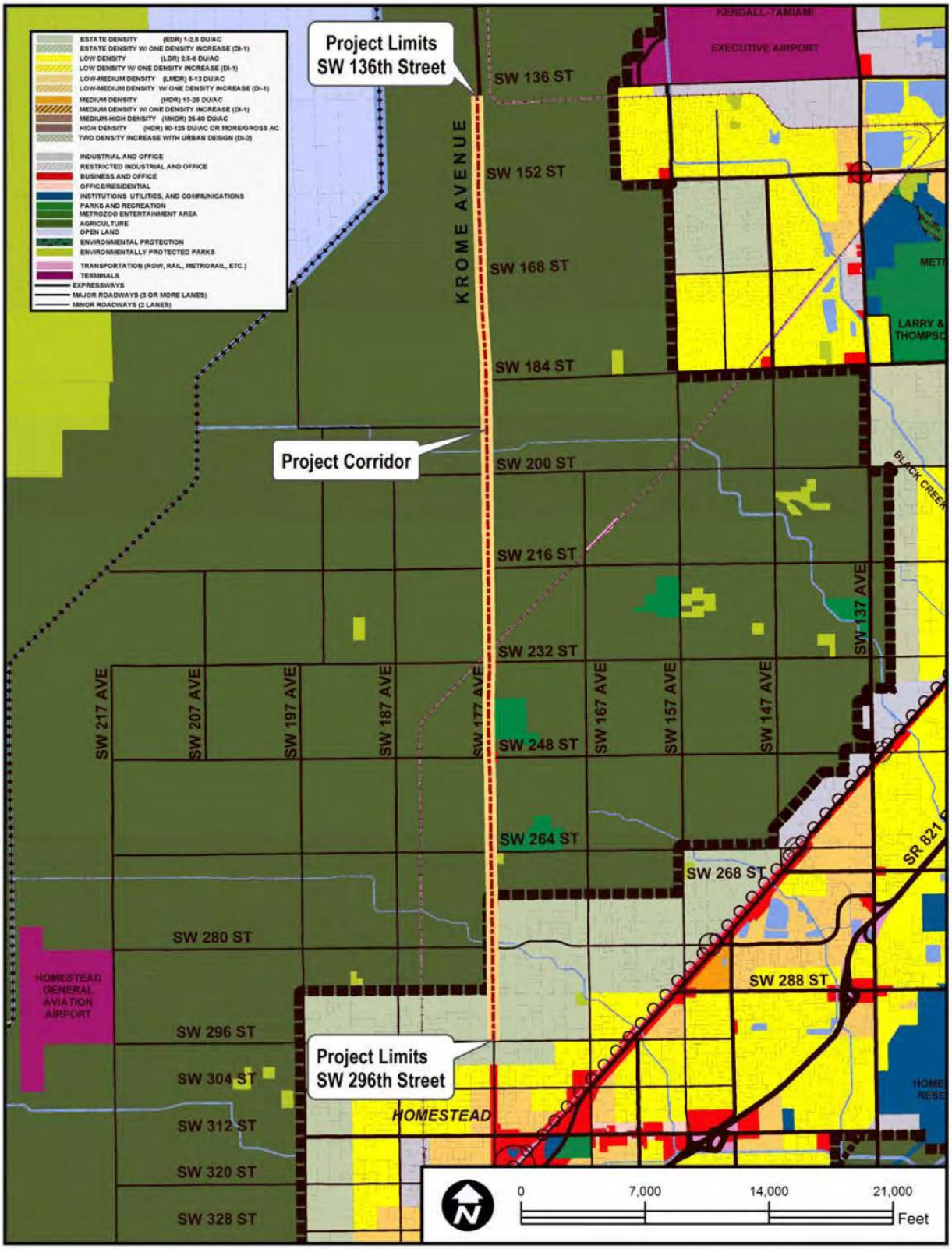


Figure 4-9 – CDMP Adopted 2015 and 2025 Land Use Plan Map

Within the CDMP there are numerous policies which reinforce that urban development should be confined within the UDB and which discourage urban sprawl. For example, Land Use Objective LU-1 provides:

> *The location and configuration of Miami-Dade County's urban growth through the year 2025 shall emphasize concentration and intensification of development around centers of activity, development of well designated communities containing a variety of uses, housing types and public services, renewal and rehabilitation of blighted areas, and contiguous urban expansion when warranted, rather than sprawl.*

Land Use Element Policy LU-1O also provides:

> *Miami-Dade County shall seek to prevent discontinuous, scattered development at the urban fringe particularly in the Agriculture Areas, through its CDMP amendment process, regulatory and capital improvements programs and intergovernmental coordination activities.*

Land Use Element Policy LU-1P provides:

> *While continuing to protect and promote agriculture as a viable economic activity in the County, Miami-Dade County shall explore and may authorize alternative land uses in the South Dade agricultural area which would be compatible with agricultural activities and associated rural residential uses, and which would promote ecotourism related to the area's agricultural and natural resource base including Everglades and Biscayne Bay National Parks.*

Land Use Element Policy LU-2B provides:

> *Priority in the provision of services and facilities and the allocation of financial resources for services and facilities in Miami-Dade County shall be given first to serve the area within the UDB of the Land Use Plan (LUP) map. Second priority shall support the staged development of the Urban Expansion Areas (UEA). Urban services and facilities which support or encourage urban development in Agriculture and Open Land areas shall be avoided, except for those improvements necessary to protect public health and safety and which service the localized needs of these non-urban areas.*

Land Use Element Policy LU-8C provides:

> *Through its planning, capital improvements, cooperative extension, economic development, regulatory and intergovernmental coordination activities, Miami-Dade County shall continue to promote agriculture as a viable economic use of land in Miami-Dade County.*

Land Use Element Policy LU-8E provides:

> *Applications requesting amendments to the CDMP Land Use Plan map shall be evaluated to consider consistency with the Goals, Objectives, and Policies of all Elements, other timely issues, and in particular the extent to which the proposal, if approved, would:*
>
> *a. Satisfy a deficiency in the Plan map to accommodate projected population or economic growth of the County;*
> *b. Enhance or impede provision of services at or above adopted LOS Standards;*
> *c. Be compatible with abutting and nearby land uses and protect the character of established neighborhoods;*
> *d. Enhance or degrade environmental or historical resources, features or systems of County significance, …*

Land Use Element Policy U-8F provides:

> *The UDB should contain developable land having capacity to sustain projected countywide residential demand for a period of 10 years after adoption of the most recent [EAR] plus a 5-year surplus (a total 15-year Countywide supply beyond the date of the EAR adoption). The estimation of this capacity shall include the capacity to develop and redevelop around transit stations at the densities recommended in policy LU-7F. The adequacy of non-residential land supplies shall be determined on the basis of land supplies in subareas of the County appropriate to the type of use, as well as the Countywide supply within the UDB. The adequacy of land supplies for neighborhood- and community-oriented business and office uses shall be determined on the basis of localized subarea geography such as Census Tracts, Minor Statistical Areas (MSAs) and combinations thereof. Tiers, Half-Tiers and combinations thereof shall be considered along with the Countywide supply when evaluating the adequacy of land supplies for regional commercial and industrial activities.*

Land Use Element Policy LU-8G provides:

> *When considering land areas to add to the UDB, after demonstrating that a countywide need exists,*
>
> *i. The following areas shall not be considered:*
>
> *a. The Northwest Wellfield Protection Area located west of the Turnpike Extension between Okeechobee Road and NW 25 Street, and the West Wellfield Protection Area west of SW 157 Avenue between SW 8 Street and SW 42 Street;*
> *b. Water Conservation Areas, Biscayne Aquifer Recharge Areas, and Everglades Buffer Areas designated by the [SFWMD];*
> *c. The Redland area south of Eureka Drive; and*

ii. The following areas shall be avoided:

a. Future Wetlands delineated in the Conservation and Land Use Element;
b. Land designated Agriculture on the Land Use Plan map;
c. Category 1 hurricane evacuation areas east of the Atlantic Coastal Ridge; and

iii. The following areas shall be given priority for inclusion, subject to conformance with Policy 8G and the foregoing provision of this policy:

a. Land within Planning Analysis Tiers having the earliest projected supply depletion year;
b. Land contiguous to the UDB;
c. Locations within one mile of a planned urban center or extraordinary transit service; and
d. Locations having projected surplus service capacity where necessary facilities and services can be readily extended."

. . .

The 2010 EAR contains an extensive discussion of population and land use consumption trends in the County. It identifies and maps all land use map amendments since the 2003 EAR. It maps projected population changes in the County. It contains a thorough discussion of the efficacy of the UDB and the related growth management policies intended to direct and contain growth within the UDB. Assessing the history of proposed amendments to the UDB since the last EAR, the County concludes that "it is evident that the County has been successful in directing development inside the UDB consistent with its participation through its comprehensive land use planning." The 2010 EAR does not recommend any revisions to weaken the land use policies enumerated above or to weaken the UDB. The 2010 EAR, which was adopted by the Miami-Dade County Board of County Commission on March 23, 2011, is incorporated by reference. A copy of the 2010 EAR is available on file at the FDOT District Six offices in Miami, Florida, and is also made available by Miami-Dade County at http://www.miamidade.gov/planning/cdmp-ear.asp.

Urban Development Boundary

Miami-Dade County is one of the only counties in the state of Florida to have an "urban development boundary." The purpose and function of the UDB is described in the CDMP Future Land Use Element:

> *The [UDB] is included on the LUP map to distinguish the area where urban development may occur through the year 2015 from areas where it should not occur. Development orders permitting urban development will generally be approved within the UDB at some time through the year 2015 provided that level-of-service standards for necessary public facilities will be met.*

. . .

> *The CDMP seeks to facilitate the necessary service improvements within the UDB to accommodate the land uses indicated on the LUP map within the year 2015 time frame. Accordingly, public expenditures for urban service and infrastructure improvements shall be focused on the area within the UDB, and urban infrastructure is discouraged outside the UDB. In particular, the construction of new roads, or the extension, widening and paving of existing arterial or collector roadways to serve areas outside the UDB at public expense will be permitted only if such roadways are shown on the LUP map and in the Transportation Element. CDMP, Land Use Element, p. I-57.*

For the most part, the Krome Avenue South study corridor lies just west and outside of the UDB (the southern-most end of the project limits lies within the UDB). See ***Figure 4-10*** showing the location of the study corridor with respect to the UDB. See ***Figure 4-9,*** showing the location of the study corridor on the adopted 2015 and 2025 Land Use Plan.

In order to discourage urban sprawl and protect lands designated under the Agriculture, Open, or Environmental categories from urbanized development, Miami-Dade County implemented the UDB before the Florida legislature adopted laws requiring comprehensive growth management plans in 1985. Therefore, the UDB predates the CDMP, which was adopted in 1988. Neither Chapter 163 Florida Statutes nor former Rule 9J-5 requires an UDB; therefore, Miami-Dade County is making use of a technique to discourage urban sprawl which exceeds the mandates of the state planning statute. The introduction to the CDMP Land Use Element notes:

> *The Land Use Element of the CDMP for the years 2015 and 2025 constitutes the fifth major update of the CDMP Land Use Element. However, the pattern of land use and urban growth promoted in the original 1975 edition of the CDMP remains essentially unchanged.*

The role of the UDB in urban services delivery is also recognized:

> *Critical in achieving the desired pattern of development is the adherence to the 2015 UDB and 2025 Urban Expansion Area (UEA) Boundary. Given the fundamental influences of infrastructure and service availability on land markets and development activities, the CDMP has since its inception provided that the UDB serve as an envelope within which the public expenditures for urban infrastructure will be confined. In this regard the UDB serves as an urban services boundary in addition to a land use boundary.*

Miami-Dade County has rarely expanded the UDB in areas not designated as Urban Expansion Areas. In the last ten years, the UDB has only been expanded once outside of the Urban Expansion Areas. That amendment to the Land Use Plan for the Beacon Lakes Project approved an industrial use within a USEPA designated Brownfield where rock mining and cement manufacturing had already taken place. The USEPA Brownfield designation was created to promote the redevelopment of previously contaminated lands.

As discussed above, the 2010 EAR, after discussing the dynamics of growth, land use consumption and population in the County, identifies no major deficiencies with and proposes no major changes to the UDB. The EAR directs growth management strategies to more effective, efficient and focused efforts within the UDB, rather than suggesting ways to expand it. The only actual expansion of the UDB suggested in the EAR is for an area remote from the project in an area already surrounded by urban development.

Of note to the analysis of potential growth inducing effects from the four laning of Krome Avenue is Policy 4C of the Traffic Circulation Subelement which requires avoidance of improvements which encourage development in certain areas. With regard to development in Agriculture and Open Land areas, transportation improvements which encourage development are to be avoided but avoidance is subject to an exception for public safety and localized needs of non-urbanized areas. Policy TC-4C of the Traffic Circulation Subelement provides:

> *Dade County's priority in the construction maintenance, and reconstruction of roadways, and the allocation of financial resources, shall be given first to serve the area within the UDB of the Land Use Plan map. Second priority in transportation allocation shall support the staged development of the urbanizing portions of the County within the Urban Expansion Areas. Transportation improvements which encourage development in Agriculture and Open Land areas shall be avoided, except for those improvements which are necessary for public safety and which serve the localized needs of these non-urban areas. Areas designated Environmental Protection shall be particularly avoided.*

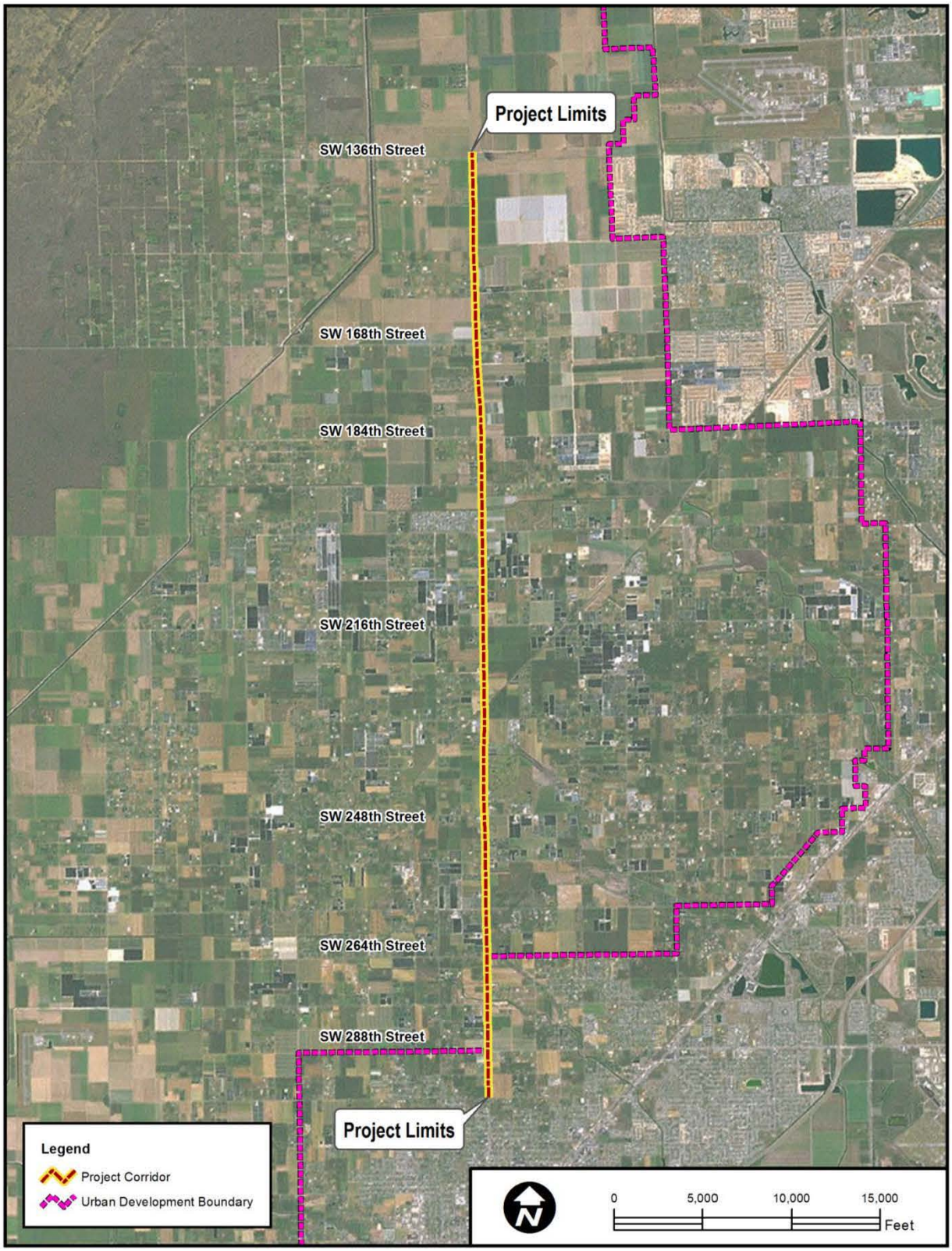


Figure 4-10 – Urban Development Boundary Map

Limitations on Development within the Comprehensive Development Master Plan

The CDMP contains policies specifically adopted to discourage urban sprawl around Krome Avenue. Land Use Element Policy LU-3F provides:

> *Any zoning action or amendment to the CDMP that would approve any use other than direct agricultural production and permitted residential uses of property, in an area designated as Agriculture, whether as a primary use or as an accessory or subordinated use to an agricultural use, or action that would liberalize standards or allowances governing such other uses on land that is a) outside the [UDB], and b) within one mile of the right-of-way line of any portions of Krome Avenue designated in this Plan for improvement to 4-lanes, shall require an affirmative vote of not less than five members of the affected Community Zoning Appeals Board and two-thirds of the total membership of the Board of County Commissioners then in office, where such Community Zoning Appeals Board or Board of County Commissioners issues a decision. The term "direct agricultural production" includes crops, livestock, nurseries, groves, packing houses, and barns but not uses such as houses of worship, schools, sale of produce and other items, and outdoor storage of vehicles. This policy is not intended to permit any use not otherwise permitted by the CDMP. Any modification to this section to allow additional uses within the one mile distance from Krome Avenue shall require an affirmative vote of not less than two-thirds of the Board of County Commissioners then in office.*

Land Use Element Policy LU-3G provides:

> *Any zoning action, or amendment to the Land Use plan map that would approve a use of property other than limestone quarrying, seasonal agriculture or permitted residential use in an area designated as Open Land on land that is, a) outside the [UDB], and b) within one mile of the right-of-way line of any portions of Krome Avenue designated in this Plan for improvement to 4-lanes, shall require an affirmative vote of not less than five members of the affected Community Zoning Appeals Board and two-thirds of the total membership of the Board of County Commissioners then in office, where such Community Zoning Appeals Board or Board of County Commissioners issues a decision. This policy is not intended to permit any use not otherwise permitted by the CDMP. Any modification to this section to allow additional uses within the one mile distance from Krome Avenue shall require an affirmative vote of not less than two-thirds of the Board of County Commissioners then in office.*

Land Use Element Policy LU-3H provides:

> *Any zoning action, or amendment to the Land Use plan map that would approve a use of property other than seasonal agricultural use in the Dade-Broward Levee Basin or permitted residential use in an area designated as Environmental*

> *Protection, on land that is, a) outside the [UDB], and b) within one mile of the right-of-way line of any portions of Krome Avenue designated in this Plan for improvement to 4-lanes, shall require an affirmative vote of not less than five members of the affected Community Zoning Appeals Board and two-thirds of the total membership of the Board of County Commissioners then in office, where such Community Zoning Appeals Board or Board of County Commissioners issues a decision. This policy is not intended to permit any use not otherwise permitted by the CDMP. Any modification to this section to allow additional uses within the one mile distance from Krome Avenue shall require an affirmative vote of not less than two-thirds of the Board of County Commissioners then in office.*

Under the analysis of the potential for growth-inducing effects from four laning Krome Avenue, it is important to emphasize that any future attempts to change land use in the vicinity of Krome Avenue will, if anything, be more difficult because of the supermajority land use policies contained in Land Use Polices 3F, 3G, and 3H. These supermajority policies work in tandem with the other established policies to discourage urban sprawl and urban development outside of the UDB and to provide standards for land use changes within one mile of Krome Avenue. The supermajority policies add an additional procedural requirement, making it more difficult to change the planning and zoning designations on a property within one mile of Krome Avenue.

CDMP Traffic Circulation Subelement Policy TC-4E provides:

> *Notwithstanding the designation of Krome Avenue as a Major Roadway on the CDMP Land Use Plan Map or as a four-lane roadway in the Traffic Circulation Subelement, no construction associated with the four-laning, or other capacity improvement, of Krome Avenue outside the UDB shall occur until FDOT has prepared, and the Board of County Commissioners has adopted, a detailed binding access control plan for the Krome Avenue corridor. This plan should emphasize access to properties fronting Krome Avenue primarily through alternative street locations.*

In addition, Traffic Circulation Policy 4E, which requires an access control plan, will have a deterrent effect on urban development along whatever part of Krome Avenue is widened to four lanes. This policy requires an access control plan that "emphasize[s] access to properties fronting Krome Avenue primarily through alternative street locations." FDOT prepared and submitted the referenced access control plan to Miami-Dade County in September 2012. The access control plan recognizes the existing, and projected continuation of, agricultural land use along the corridor. The plan contemplates that the County will include as part of any future site development approvals means to accomplish frontage road construction, as appropriate. The Krome corridor is an Access Management Class 2 roadway. The access control plan does not propose to change that designation. As an element of the SIS, access to abutting land along the corridor is subordinate to the function of high speed, high volume traffic movement, and such access must be regulated. This policy will help retain the agricultural character of Krome Avenue.

Therefore, under established CDMP policies, adding two additional lanes to Krome Avenue does not encourage urban sprawl. Furthermore, there are adequate provisions under Florida law to properly enforce the CDMP policies. Any development order (i.e., any decision of the County to grant or deny permission to develop land, per Section 163.3164, Florida Statute) that materially alters the use or density or intensity of development of that land must be consistent with the CDMP, or it is subject to challenge. If a proposed development might create the potential for urban sprawl that might threaten agriculture or pose a danger to environmentally protected lands, amendments would have to be made to change the CDMP as it exists today before the County could legally approve such a development. If the County were to approve any such amendments, the approval would be subject to further review by the FDEO and potential challenge. As demonstrated by the 2010 EAR, however, the land use policies have been applied rigorously to contain development within the UDB, and the EAR proposes to continue those policies.

In November 2012, voters in Miami-Dade County adopted by more than 2 to 1 (68%) a charter amendment requiring an extraordinary vote ($^2/_3$) of the entire County Commission to enlarge the UDB. This requirement will make it more difficult for the UDB to be enlarged into the Krome Avenue corridor area.

Induced Traffic

The primary project purpose is safety, not the relief of congestion. ***Section 1.2.2.2*** recognizes that with the project future projected volumes will not be accommodated at all locations and several signalized intersections and links are expected to operate below acceptable LOS. The potential for area traffic to relocate to Krome Avenue when it is improved has been accounted for in the traffic analyses in the long range transportation model future volumes. The South East Regional Planning Model (version.6.5.2, released in 2012) was used to prepare updated Annual Average Daily Traffic and Directional Design Hourly Volumes for opening year and design year for the project study area. This analysis is presented in a Technical Memorandum in Appendix A of the PER. The post-project projected volumes assigned by the model take into account distributional changes occasioned by the improvement of Krome Avenue, and by the future condition of the area roadway network. The future projected volumes, discussed in ***Section 1.2.2.2***, include the induced traffic which relocates as a result of the laneage improvements. Because the project is a safety project and because there are significant constraints on land use changes, no additional capacity, beyond what is represented by existing land use, is being designed into the project.

4.3.18 Cumulative Impacts

Cumulative impacts are defined in the CEQ implementing regulations of NEPA (40 CFR 1508.7) as:

> *… the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

Based on the impact analyses in Chapter 4 of this document, no adverse direct or indirect impacts will occur to wetlands, water quality, floodplains, air quality, visual/aesthetic resources, or bicycle and pedestrian features; therefore, cumulative impacts for these resource topics were not analyzed.

In determining the area of influence within which other projects may have a cumulative effect when combined with the Krome South project, the FDOT referenced the FHWA's position paper titled *Secondary and Cumulative Impact Assessment in the Highway Project Development Process* (1992), which states: "… an acceptable general guideline for determining the area of influence is the geographic extent to which a project will affect traffic levels." This area of influence is appropriate for the Krome South project for all of the social and economic impact topics (i.e., population and community growth characteristics, economic conditions, community services, community cohesion, land use, and utilities and railroads). However, this area of influence is not appropriate for use in analyzing the cumulative effects of all impact topics.

For wildlife and habitat, natural communities within and adjacent to the project were considered to determine the types of protected species with the potential to occur within those habitats present. The known geographic range of the species identified (see ***Sections 3.3.12.4*** and ***4.3.12***) was considered when determining the area of influence.

Other impact topics such as cultural and historical resources (archeological and historic resources, Section 4(f) resources, and recreational and parklands) and some natural and physical resources (noise, contamination, and farmlands) have a narrower area of influence for cumulative impacts, which is restricted to the study corridor and directly adjacent/adjoining lands. ***Table 4-17*** below shows the impact topics which have the potential to be affected from the Krome South project and the corresponding area of influence for each impact topic.

Table 4-17 – Krome Avenue (South) Impact Topics and Associated Areas of Influence

Impact Topic	Area of Influence
Social and Economic	
Population and Community Growth Characteristics	Entire Krome Avenue Corridor from US-1 to Okeechobee Road and Immediate Connecting Roadway Corridors
Economic Conditions	
Community Services	
Community Cohesion	
Land Use	Krome Avenue (South)* Study Corridor and Directly Adjacent/Adjoining Lands
Utilities and Railroads	Krome Avenue (South)* Study Corridor and Directly Adjacent/Adjoining Lands
Cultural and Historical Resources	
Archeological and Historic Resources	Krome Avenue (South)* Study Corridor and Directly Adjacent/Adjoining Lands
Section 4(f) Resources	
Recreational and Parklands	
Natural and Physical Resources	
Noise	Krome Avenue (South)* Study Corridor and Directly Adjacent/Adjoining Lands
Contamination	Krome Avenue (South)* Study Corridor and Directly Adjacent/Adjoining Lands
Wildlife and Habitat	Geographic Range of Endangered Species Act Federally-Listed Species with the Potential to Occur within the Krome Avenue (South)* Study Corridor
Farmlands	Krome Avenue (South)* Study Corridor and Directly Adjacent/Adjoining Lands

* Krome Avenue (South) is defined as the existing Krome Avenue roadway corridor from SW 296th Street to SW 136th Street in Miami-Dade County, Florida.

Figure 4-11 shows a selection of the past, present, and reasonably foreseeable future actions which may have cumulative impacts on the areas of influence of the Krome Avenue (South) project. These projects are also discussed in ***Table 4-18***.

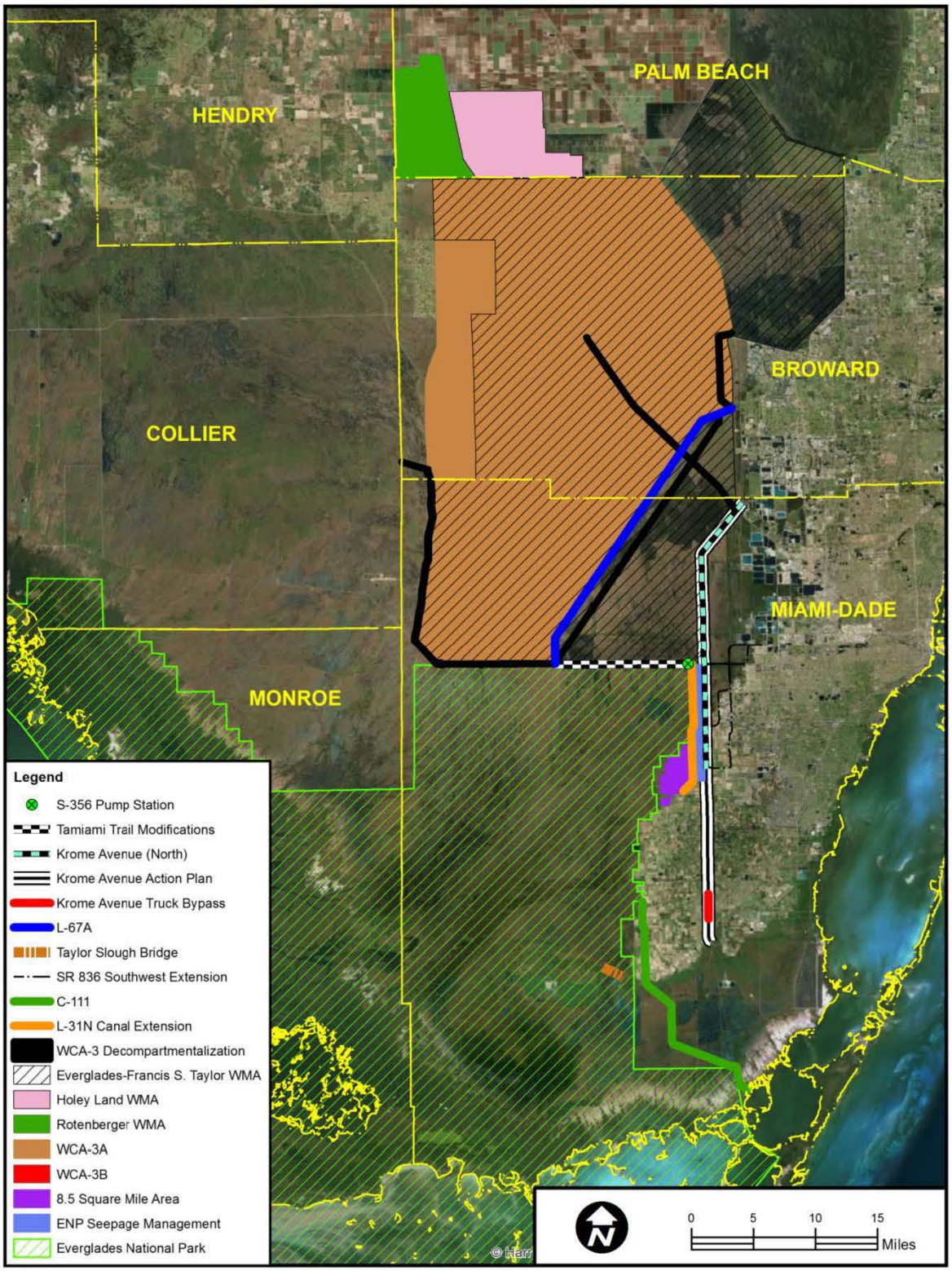


Figure 4-11 – Past, Present, and Reasonably Foreseeable Future Actions with Cumulative Impacts on the Areas of Influence of the Krome South project

Table 4-18 – Past, Present, and Reasonably Foreseeable Future Actions with Cumulative Impacts on the Areas of Influence of the Krome South project

Plan/Project	Description
Krome Avenue Plans/Projects	
Krome Avenue Action Plan	The Krome Avenue Action Plan was completed in 1999 with the goal of developing interim improvements to maintain safety and improve conditions and existing levels of service along the Krome Avenue corridor between SR 25/US 27/Okeechobee Road and SR 5/US 1/South Dixie Highway. The Krome Avenue Action Plan was developed in an attempt to integrate land use and transportation decisions to provide safety and operational benefits to the Krome Avenue corridor while balancing the need to sustain agriculture, preserve the rural character of the corridor, and protect environmental resources. The main focus of the Krome Avenue Action Plan was to develop a plan of ultimate improvements required to address future mobility needs. Improvement alternatives considered as part of the Krome Avenue Action Plan included safety enhancements, intersection and signal modifications, access management, shoulder enhancements, pavement markings, passing zones, frontage roads, emergency phones, signage, a truck bypass or alternate route for the segment of Krome Avenue between Lucy Street and Avocado Drive, parking modifications, pedestrian/bicycle facilities, and landscape aesthetic enhancements.
Krome Avenue (North)	Reconstruction of 22.8 miles of Krome Avenue, from SW 136th Street/Howard Drive to SR 25/US 27/Okeechobee Road, from a two-lane roadway to a four–lane roadway, with four 12-foot travel lanes, 12-foot outside shoulders (5-foot paved), a 40-foot depressed sod median, and an overall typical section width of 176 feet to 181 feet, with the exception of the northern 0.75-mile, where it is 197 feet (to incorporate a bike trail)
Krome Avenue Truck Bypass	The purpose of the project is to provide a truck by-pass facility to redirect truck traffic along Krome Avenue away from the Homestead Historic Downtown District, to enhance safety, truck traffic movement and address existing problems related to traffic congestion.
Adjacent Roadway Plans/Projects	
SR 836 Southwest Extension	A PD&E study has begun for a new 15-mile south/north and west/east transportation corridor from the terminus of SR 836 to Southwest Kendall to improve connectivity and enhance mobility needs. The Class of Action for this project has been determined to be an Environmental Impact Statement.
Restoration and Water Management Projects	
Krome Avenue Canal	A new Krome Avenue canal is planned as part of the SFWMD Bird Drive component of the Comprehensive Everglades Restoration Plan. This project could consist of construction of a new waterway from the L-29 Canal to a new pump station near S-338 and relocation of S-338 to the east side of Krome Avenue. Additionally, improvements would be made from C-1W to the L-31N intercept.
Comprehensive Everglades Restoration Plan	This plan is a framework and guide to restore, protect, and preserve the water resources of central and southern Florida. The plan was approved in the Water Resources Development Act (2000), and it is a component of the world's largest ecosystem restoration effort, encompassing 16 counties and an 18,000-square-mile area. The comprehensive plan includes more than 60 elements designed to capture, store, and redistribute fresh water. Implementation of the comprehensive plan is expected take more than 30 years to complete and would improve the quality, quantity, timing, and distribution of water flows. Some of the major elements of the Comprehensive Everglades Restoration Plan include: • WCA-3 Decompartmentalization and Hydropattern Restoration feature • ENP Seepage Management • C-111 Spreader Canal • River of Grass Initiative • Central Everglades Planning Project

Table 4-18 – Past, Present, and Reasonably Foreseeable Future Actions with Cumulative Impacts on the Areas of Influence of the Krome South project

Plan/Project	Description
Modified Water Deliveries to Everglades National Park	Originally initiated by Congress as part of the 1989 Everglades Expansion and Protection Act, this project aims to improve water deliveries into Everglades National Park. Since the implementation of the Central & Southern Florida Project, artificial distributions of water have left some areas of the park unnaturally wet, while others remain too dry. This project endeavors to restore a more natural flow of water to Northeast Shark Slough, thereby alleviating western Shark Slough from unusually high water levels. Because the *Modified Water Deliveries* project is expected to increase water levels around some developed areas, full implementation likely remains years away. Project partners must carefully consider the full effects of their actions for endangered species, public roadways, and private residents. It is expected, however, that once such issues have been resolved, the plan will yield new life for the Everglades through enhanced water flows. There are five major components of the Modified Water Delivers to Everglades National Park Project: • Tamiami Trail Modifications • L-67A Conveyance Features • 8.5 Square Mile Area Protection Features • S-356 Pump Station • Taylor Slough Bridge
Experimental Program of Water Deliveries to Everglades National Park	Public Law 98-181, enacted in November 1983, authorized the USACE, with the concurrence of the SFWMD and the NPS to implement the Experimental Water Deliveries Program. Congress authorized the USACE, in concurrence with the SFWMD and the NPS, to experiment with the delivery of water to Everglades National Park in order to provide ecosystem benefits and reverse the ecological decline in the park. Furthermore, the law authorized the USACE to construct the necessary measures to provide flood protection for homes in order to meet the goals of the program. The law also authorized the USACE to acquire agricultural lands threatening the realization of these objectives. The program was re-authorized every two years until 1989 when permanent authority was issued pending the completion of permanent structural modifications approved under the Everglades Expansion Act of 1989. This legislation provided the USACE with the authority to use the Experimental Water Deliveries Program as an iterative field testing program for developing optimum water delivery plans for Everglades National Park.
Everglades Restoration Transition Plan	The purpose of this plan is to define water management operating criteria for Central and Southern Florida Project features and the constructed features of the Modified Water Deliveries and Canal-111 projects until a Combined Operational Plan is implemented. The plan objectives include improving conditions in Water Conservation Area 3A for the endangered Everglade snail kite, wood stork and wading bird species while maintaining protection for the endangered Cape Sable seaside sparrow and Congressionally authorized purposes of the Central and Southern Florida Project. This plan incorporates more flexible operating criteria to better manage Water Conservation Area 3A for the benefit of multiple species and represents a positive step towards balancing the competing needs of a complex system.
Conceptual Management Plan for the Everglades Complex of WMAs	The Everglades Complex is part of the Kissimmee-Okeechobee-Everglades basin and lies within three counties — southwestern Palm Beach, western Broward, and northwestern Miami-Dade. It includes three management areas — Holey Land, Rotenberger, and Everglades-Francis S. Taylor. Through a cooperative management agreement with the SFWMD, the FWC has management authority over Everglades Complex WMA lands (mainly lands in Water Conservation Areas 2 and 3) for game and fresh water fish preservation, protection, propagation, and recreational use. The plan lists 28 state and federally listed and endangered or threatened species and their habitat.

Table 4-18 – Past, Present, and Reasonably Foreseeable Future Actions with Cumulative Impacts on the Areas of Influence of the Krome South project

Plan/Project	Description
Combined Operational Plan (COP)	The Combined Operational Plan (COP) is an integrated operational plan for Water Conservation Area 3 (WCA-3), Everglades National Park (ENP) and the South Dade Conveyance System (SDCS), that includes the completed modifications of the Central and Southern Florida (C&SF) Project as described by the Modified Waters Deliveries to Everglades National Park and the Canal-111 South Dade (C-111SD) projects. The purpose of COP is to define water management operations for the completed MWD and C-111SD projects that are consistent with their respective project purposes as defined by their authorizing legislation and further refined by their respective general design memorandum (GDM) and general reevaluation report (GRR). This integrated operational plan will complete the MWD project.
L-31N Canal Expansion	Improvement/reconstruction of the L-31N Canal from G-211 south to the S-331 pump station and improvement/ reconstruction of the L-31N Canal north of G-211 to a new pump station/gated structure at the C-4 intercept.
Western Wellfield Expansion	Recommendations are outlined in the Comprehensive Everglades Restoration Plan (USACE and SFWMD, 1999) to further shift large wellfield withdrawals from the coastal areas to western facilities. The relocation of existing or construction of new municipal well fields in western urban areas, however, is tempered by concern that they may adversely affect Everglades and water-conservation area ecosystems.
Protected Species Plans/Projects	
South Florida Multi-Species Recovery Plan	This plan was written to recover multiple species by restoring ecological communities throughout the South Florida ecosystem (26,002 square miles). There are more than 600 species considered either rare or imperiled in South Florida, 68 of which are federally listed as threatened or endangered. A number of limiting factors for habitat-limited species are outlined, including habitat loss, fragmentation, and degradation as a result of urbanization, agriculture or other land-use conversions, wetland drainage and alteration of hydrological patterns, invasion of nonnative species, fire suppression, soil subsidence, degradation of water quality, and increased levels of contaminants. Recovery objectives are identified at the species level, while recovery criteria are identified at the species and community level. Recovery actions have been developed to provide consistency between each of the 68 species, and habitat level recovery actions have been developed to facilitate the integration of individual species needs at the community level. The plan does not replace existing approved species recovery plans, but rather outlines South Florida's contribution to range-wide recovery.
Recreation Plans/Projects	
Comprehensive Everglades Restoration Plan Master Recreation Plan	The *Comprehensive Everglades Restoration Plan Master Recreation Plan* takes "a system-wide approach to identify, evaluate, and address the impacts of Comprehensive Everglades Restoration Plan implementation on existing recreational use within the South Florida Ecosystem and identify and evaluate potential new recreation, public use and public educational opportunities. A particular focus will be on the identification of additional public use and recreational opportunities to compensate for public use facilities that may be lost."
State Comprehensive Outdoor Recreation Plan	This plan assesses recreational supply, demand, and needs for 11 regions in the state. The South Florida region (Region 11) is composed of Broward, Miami-Dade, and Monroe counties. The plan identifies goals for recreational opportunities and facilities, including hiking, bicycling, horseback riding, camping, fishing, and ORV use.

Table 4-18 – Past, Present, and Reasonably Foreseeable Future Actions with Cumulative Impacts on the Areas of Influence of the Krome South project

Plan/Project	Description
Development Plans/Projects	
Kendall Town Center DRI	The Kendall Town Center DRI has been approved. The Kendall Town Center is part of a 158 acre site located approximately 18 miles southwest of downtown Miami. A portion of the land was sold to Baptist Hospital for the development of a 282,000 square foot hospital and 62,600 square foot medical office building, which opened in April 2011. Other parcels were sold and are expected to include the development of a 120 room hotel with ancillary office and retail and a senior housing component. The remaining 70-acre parcel is entitled for 621,300 square feet of retail, 60,000 square feet of office and 50,000 square feet of community center. All current infrastructure requirements, including a pump station, transit center and private drive have been funded and are nearly complete.
Parkland DRI	The only DRI under review by the FDEO and Miami-Dade County is the Parkland DRI. In order for the Parkland DRI to be approved, the UDB would have to be moved to encompass the proposed development.
Proposed Borrow Pit	A rock mining company is proposing excavation of a new rock mine that would create a 172-acre lake excavation pit on a 400-acre property owned by a developer in the vicinity of Krome Avenue and SW 90th Street (north of the northern terminus of this project). Miami-Dade County approved the mine in October 2011. However, the permit is currently under legal review contending that the County violated the CDMP, which has set aside that land exclusively for agriculture or other compatible uses.

The potential cumulative impacts from the combined actions of this project and other past, present, and reasonably foreseeable future actions in the areas of influence defined above are discussed below. The direct impacts from this project are discussed in detail in the applicable sections of chapter 4 of this document.

Social and Economic

Social and economic impacts from this project are discussed in ***Section 4.1***. FDOT roadway projects would have all beneficial economic effects by bringing funding into the region for these projects and generating jobs from construction activities. Projects such as these also have the potential to have an adverse impact on characteristics such as community services (from right-of-way acquisition impacts) and community cohesion (by dividing communities). However, since the Krome Avenue projects occur along an existing roadway corridor, it is not anticipated that the adjacent communities will suffer any community cohesion impacts. Additionally, since the right-of-way acquisition needs for this project from community service facilities are limited to undeveloped areas, the impacts are expected to be very minor and the function of the associated services will not be impacted. These and future roadway projects could also require relocations of residences, business, and personal property. To minimize these potential impacts, the FDOT would carry out a right-of-way and relocation program for all of its projects. Ultimately, the roadway improvements associated with the Krome Avenue projects and other FDOT roadway projects in the area of influence would benefit the surrounding communities by creating safer roadways for motorists.

Regional restoration and water management projects would have a beneficial effect on both social and economic characteristics of the region by bringing funding into the region for these projects, generating jobs, and ultimately creating a more pleasing natural environment in the South Florida region. Plans and projects focused on outdoor recreation in the South Florida region will both provide enhanced opportunities for activities such as hiking, bicycling, horseback riding, camping, fishing, and recreational off-road vehicle use would have beneficial effects to the surrounding communities, including communities along the study corridor. Development projects could disrupt community cohesion along this fairly rural corridor. Community services could experience increased demand and pressure from the potential increase in population.

Collectively, the past, present, and reasonably foreseeable future actions when combined with the Krome South project would have a beneficial cumulative impact on the social and economic characteristics of the area of influence.

Land Use

Land use changes associated with this project are discussed in ***Sections 4.1.5*** and ***4.3.17***. All of the projects within the area have the potential to influence land use changes. However, such changes would have to be coordinated with the appropriate federal, state, and local agencies, including the FDEO, thus minimizing cumulative impacts. As discussed in the referenced sections, Miami-Dade County has an effective suite of land use control policies in its CDMP intended to limit land use changes in the project environs. Collectively, the past, present, and reasonably foreseeable future actions could have both beneficial and adverse effects on the area of influence; however, this project has been determined to be consistent with the Miami-Dade County Comprehensive Plan.

Utilities and Railroads

Impacts to utilities and railroads resulting from this project are discussed in ***Section 4.1.6***. Other projects in the vicinity of this project would have the potential to require relocation of existing utilities or railroad crossings along the corridors. The agencies responsible for these projects would likely conduct necessary coordination early in the project development process, which would minimize unacceptable adverse impacts. Collectively, the past, present, and reasonably foreseeable future actions could have an adverse cumulative impact on utilities and railroads in the area of influence, causing potential relocations of utilities and railroad crossings; however, the FDOT will continue to coordinate with utilities and railroad representatives during the design phase of the project to minimize impacts to the maximum extent practicable.

Archeological and Historic Resources

Historic resource impacts from this project are discussed in ***Section 4.2.1.2***. No archeological resource impacts are anticipated from this project. Due to the restricted area of influence for the NRHP-eligible resources evaluated for this project, none of the other projects listed above would be expected to have an effect on these resources. Therefore, there would be no cumulative

impacts to historic resources within the area of influence from the combination of the proposed improvements from this project and other past, present, and reasonably foreseeable future actions.

Section 4(f) Resources

Section 4(f) resource impacts from this project are discussed in ***Section 4.2.2***. Due to the restricted area of influence for these resources, none of the other projects listed above would be expected to have an effect on the Section 4(f) resources evaluated for this project. Therefore, there would be no cumulative impacts to Section 4(f) resources within the area of influence from the combination of the proposed improvements from this project and other past, present, and reasonably foreseeable future actions.

Recreational and Parklands

Impacts to recreational and parklands from this project are discussed in ***Section 4.2.3***. Other FDOT roadway projects could potentially have adverse impacts on recreational and parklands within the vicinity of the study area. However, impacts from these projects would be properly analyzed and minimized to the maximum extent practicable. Additionally, due to the restricted area of influence for the specific resources discussed above, none of the other projects listed above would be expected to have any impacts on these specific resources. The Comprehensive Everglades Restoration Plan Master Recreation Plan and State Comprehensive Outdoor Recreation Plan, focused on outdoor recreation in the South Florida region, would both contribute positive effects to recreational and parklands regionally, potentially including areas within the study corridor. Collectively, the past, present, and reasonably foreseeable future actions could have both beneficial and adverse effects on recreational and parklands within the area of influence. This project would contribute a minor to moderate negative increment to the cumulative effect, depending upon the alternative chosen. However, due to the restricted area of influence for the specific resources discussed above, none of the other projects listed above would be expected to have any impacts on these specific resources.

Noise

Noise impacts for this project are discussed in ***Section 4.3.4***. None of the noise barriers evaluated for this study are recommended for further consideration and there are no apparent solutions available to mitigate the noise impacts at the impacted locations. The traffic noise impacts to these noise sensitive sites are considered to be an unavoidable consequence of the project. Other FDOT roadway projects in the vicinity have the potential to both increase and decrease noise levels; impacts from these projects would all be properly evaluated in accordance with regulations and the FDOT *PD&E Manual*. Development projects within the vicinity of the Krome Avenue corridor could be expected to increase noise levels. Collectively, the past, present, and reasonably foreseeable future actions could have an impact from noise within the area of influence, and this project could contribute to the unavoidable adverse effects. However, roadway projects such as the Krome South project are often required for the safety of those traveling the roadway. Thus, the noise impacts, which have been minimized to the maximum

extent practicable while still providing the necessary safety improvements, are considered an unavoidable and acceptable consequence.

Contamination

Contamination impacts from this project are discussed in ***Section 4.3.8***. The extent of contamination identified along the Krome Avenue (South) corridor (the areas directly adjacent and the lands adjoining) appears to be localized to the study area. Taking this into consideration, it is anticipated that the collective impact of the past, present, and reasonably foreseeable future FDOT projects will likely not contribute to unacceptable cumulative impacts from the localized contamination.

Wildlife and Habitat

Wildlife and habitat impacts are discussed in ***Section 4.3.12***. Other roadway and development projects within the vicinity of Krome Avenue could be expected to have a direct negative impact on wildlife and habitat as a result of increasing impervious surface areas and removal of natural habitat. However, impacts would have to the properly permitted and mitigated (within the same basin as the impacts), thus reducing the cumulative impact to wildlife and habitat in the region. Regional restoration, water management, and protected species plans and projects would have the effect of contributing to the preservation of high quality wildlife habitat within the same watersheds as the Krome South project, while working to restore lower quality habitat back to a more natural historic state. Sheet flow within the region could also be expected to improve as a result of the proposed regional restoration and water management projects, which would likely improve the quality of wildlife habitats. Collectively, the past, present, and reasonably foreseeable future actions could have both beneficial and adverse effects on wildlife and habitat within the area of influence. This project is only anticipated to contribute a negligible to minor increment to the cumulative effect.

Farmlands

A *Farmland Conversion Impact Rating for Corridor Type Projects* (Form NRCS-CPA-106) was completed for this project in coordination with the U.S. Department of Agriculture NRCS and farmlands impacts are considered minimal and below the acceptable threshold of impacts by the FDOT (see ***Section 4.3.14***). All impacts to prime or unique farmlands from federal government projects (and state or local government projects with federal funding) are regulated by the U.S. Department of Agriculture NRCS under the Farmland Protection Policy Act, requiring prime or unique farmlands conversion to be considered in the project impact analysis. Therefore, collectively, the past, present, and reasonably foreseeable future actions would be anticipated to only have negligible to minor adverse cumulative impacts to farmlands within the area of influence. This project is only anticipated to contribute a negligible to minor increment to the cumulative effect.

5.0 COMMENTS AND COORDINATION

5.1 PUBLIC INVOLVEMENT PROGRAM

FDOT developed and carried out a Public Involvement Program as an integral part of this project. The purpose of this program was to establish and maintain communication with the public at large and the individuals and agencies concerned with the project and its potential impacts. To facilitate open communication and agency and public input, the FDOT provided early in the project process an AN package to state and federal agencies and other interested parties defining the project and, in cursory terms, describing anticipated issues and impacts. In addition, in order to expedite the project development processes, eliminate unnecessary work, and provide a substantial issue identification/problem solving effort, the FDOT has carried out the scoping process as required by the Council of Environmental Quality (CEQ) Guidelines.

Finally, in an effort to resolve all issues identified, the FDOT has conducted an extensive interagency coordination and consultation effort and public participation process. This document details the FDOT's program to fully identify, address, and resolve project related issues identified through the Public Involvement Program. Materials associated with public participation are referenced in this document and located in the Public Involvement Program ***Appendix U***.

5.2 AGENCY COORDINATION

5.2.1 Notice of Intent

The Notice of Intent for the preparation of the *Draft Environmental Impact Statement* was published in the Federal Register on November 1, 2005 and can be found in ***Appendix V***.

5.2.2 Advance Notification Package

An AN Package describing the proposed project was distributed to federal, state and local agencies on February 27, 2004, and can be found in ***Appendix W***. The AN was also furnished to the appropriate U.S. and state senators and representatives. The following agencies received individual AN packages. An asterisk (*) indicates those agencies that responded to the package either directly to the FDOT or through the Florida State Clearinghouse.

5.2.2.1 Advance Notification Agency Mailing List

Federal Agencies

- Federal Aviation Administration, Airport District Office*
- Federal Emergency Management Agency – Natural Hazards Branch, Chief
- Federal Emergency Management Agency – Region IV, Mitigation Division, Chief
- Federal Highway Administration, Division Administrator
- Federal Railroad Administration – Office of Economic Analysis, Director

- U.S. Army Corps of Engineers – Regulatory Branch, District Engineer, Jacksonville
- U.S. Army Corps of Engineers – Regulatory Branch, District Engineer, Miami
- U.S. Department of Commerce – National Marine Fisheries Service – Habitat Conservation Division, Area Supervisor, Panama City
- U.S. Department of Commerce – National Marine Fisheries Service – Habitat Conservation Division, Miami Field Office
- U.S. Department of Commerce – National Oceanic and Atmospheric Administration, Ecology and Conservation Office, Director
- U.S. Department of Health and Human Services – Center for Disease Control and Prevention*
- U.S. Department of Housing and Urban Development, Regional Environmental Officer
- U.S. Department of Interior – Bureau of Indian Affairs, Office of Trust Responsibilities, Chief
- U.S. Department of Interior – Bureau of Land Management – Eastern States Office, Director
- U.S. Department of Interior – Fish and Wildlife Services, Field Supervisor*
- U.S. Department of Interior – National Park Service – South Regional Office
- U.S. Department of Interior – U.S. Geological Survey, Chief
- U.S. Environmental Protection Agency – Region IV, Regional Administrator*
- U.S. Environmental Protection Agency– Region IV, Groundwater Technology and Management Section

State Agencies

- Florida Department of Community Affairs – Division of Growth Management*
- Florida Department of Environmental Protection, Florida State Clearinghouse
- Florida Department of Environmental Protection, Southeast District, Director
- Florida Department of Environmental Protection – Office of Intergovernmental Programs*
- Florida Fish and Wildlife Conservation Commission – Office of Environmental Services, Director
- Florida Fish and Wildlife Conservation Commission – South Region Director, West Palm Beach*
- Florida State Historic Preservation Officer*
- Florida Department of Transportation – Central Environmental Management Office, Manager
- Florida Department of Transportation – Federal-Aid Programs, Manager
- South Florida Regional Planning Council, Executive Director*
- South Florida Water Management District, Executive Director*

Tribal Governments

- Miccosukee Tribe of Indians of Florida – Land Resources Manager

Local Agencies

- Miami-Dade County Aviation Department, Director*
- Miami-Dade County Community and Economic Development Department, Director
- Miami-Dade County Department of Environmental Resources Management, Director*
- Miami-Dade County Department of Planning and Zoning, Director*
- Miami-Dade County Division of Public Works, Director
- Miami-Dade County Expressway Authority, Director
- Miami-Dade County Fire and Rescue, Director
- Miami-Dade County Manager
- Miami-Dade County Metropolitan Planning Organization, Director*
- Miami-Dade County Parks and Recreation Department (now MDPROS), Director
- Miami-Dade County Office of Emergency Management, Director
- Miami-Dade County Office of Public Transportation Management, Director
- Miami-Dade County Police Department, Director
- Miami-Dade County Transit Agency, Director*
- Miami-Dade County Water Sewer Department, Director
- Miami-Dade County Department of Environmental Resources Management Environmentally Endangered Lands Program, Manager

5.2.2.2 Advance Notification Summary of Agency Comments

The comments received on the 2004 AN package are summarized in the following paragraphs. The AN Package and comments can be found in ***Appendix W***.

Federal Agencies

U.S. Department of Health and Human Services

The U.S. Department of Health and Human Services had no project-specific comments. However, they recommend addressing in the NEPA documents areas of potential public health concern posed by the project.

U.S. Department of Interior, U.S. Fish and Wildlife Service

U.S. Department of Interior, USFWS, indicated that the project area is within a Core Foraging Area for the wood stork. The nearest nest is approximately ten miles northwest of the project site. The [USFWS] believes that the loss of wetland within a Core Foraging Area due to an action could result in the loss of foraging habitat for the wood stork. In order to minimize adverse effects to the wood stork, it is recommended that any lost foraging habitat resulting from the project be replaced within the Core Foraging Area of the affected nesting colony.

U.S. Environmental Protection Agency

The USEPA noted that the project overlies the Biscayne Aquifer, a Sole Source Aquifer. However, if BMPs are followed, no adverse impacts to the Sole Source Aquifer are anticipated. Also, coordination should be conducted regarding potential sources of groundwater contamination in addition to documenting the presence or absence of Wellhead Protection Plans.

State Agencies

Florida Department of Environmental Protection

The FDEP indicated that the project needs to be evaluated for potential impacts to wetland, and consistency with the Comprehensive Everglades Restoration Plan. Also, it was noted that precautions need to be implemented for managing potentially contaminated areas. In addition, the Office of Intergovernmental Programs included the following comments:

- Environmental documentation should consider impacts to wetlands and agricultural for "the total project area at logical termini rather than by segmented analysis."
- The Contamination Screening Evaluations should outline specific procedures in the event of contaminated materials are encountered during construction

South Florida Regional Planning Council

The South Florida Regional Planning Council noted that the proposed project is consistent with the goals and policies of the Strategic Regional Policy Plan for South Florida. Project must be consistent with Miami-Dade County CDMP and should minimize impact to natural systems.

South Florida Water Management District

The SFWMD noted that relative to their permitting criteria, the following should be considered in the design, construction, and permitting of the project:

- The proposed roadway improvements will require an Environmental Resource Permit, pursuant to Rules 40E-1, 40E-4, 40E-40, 40E-41, and 40E-400, FAC.
- The proposed roadway improvements must meet the SFWMD's water quality and water quantity criteria, as specified in the Basis of Review for Applications.
- To the extent possible, any wetland impacts due to location, design, and construction techniques should be minimized. Please note that information documenting that any proposed wetland impacts are unavoidable will be required at the time of permit application, as well as information on the alternatives considered to reduce the proposed impacts. Mitigation will be required for any unavoidable wetland impacts.
- A Water Use Permit may be required for any dewatering activities associated with the proposed roadway improvements, pursuant to Rule 40E-2, FAC. Please contact the Water Use Division prior to the initiation of any dewatering activities and subsequent to the

completion of the CSER, to schedule a pre-application conference to discuss the details of the proposed dewatering activities.

- If the proposed roadway improvements include dewatering activities within contamination areas or if the dewatering activities have the potential to result in the induced movement of the contamination plume, a pre-application meeting involving SFWMD Water Use staff and the appropriate staff from the FDEP should be scheduled to discuss management of dewatering effluent, including the design of appropriate containment/treatment methods.
- Any proposed work within the SFWMD's C-102 or C-103 Canal right-of-way will require a Right-of-way Occupancy Permit.
- Any proposed roadway improvements involving modifications to the existing bridge structures, will require a modification to Right-of-way Occupancy Permits no. 9120 (C-102) and 3179 (C-103). Also, any proposed bridge work must meet the SFWMD's bridge crossing criteria, as contained in the Criteria Manual for Use of Works of the District, Permit Information Manual Volume V.
- Evaluate project for consistency with the Comprehensive Everglades Restoration Plan improvements, specifically the C-111 and L-31W Projects (Krome South is within boundaries of C-111 project area).

Local Agencies

Miami-Dade County Aviation Department

The Miami-Dade County Aviation Department indicated that the project is compatible with operations from Kendall-Tamiami Executive and Homestead General Aviation Airports.

Miami-Dade County Department of Environmental Resources Management

Miami-Dade County DERM noted the following comments concerning the proposed project:

- Coordinate with Miami-Dade Water and Sewer Department and City of Homestead Public Utilities regarding any water or sewer work required during the construction phase or any proposed water and sewer line installation in the project area.
- Provide 100-foot horizontal setback between stormwater treatment facilities and potable water supply (PWO) wells. A list of PWO facilities is provided along the project limits.
- Follow their recommendations for stormwater treatment and obtain necessary permits for stormwater and wetland impacts.
- DERM also provides list of DERM-permitted hazardous waste sites and grease operating permits (GDO).

Miami-Dade County Department of Planning and Zoning

The Miami-Dade County Department of Planning and Zoning noted that Application 16 (to amend CDMP to designate Krome a Major Roadway) was approved but has not been enacted pending ongoing legal challenge. This challenge has now been concluded and the project has

been determined consistent with the CDMP. Also, coordination with Department of Planning and Zoning should include the binding access control plan, plan for expediting funding and construction, provision of a median and a plan for increased safety. The *Binding Access Control Plan* was submitted to Miami-Dade County in September 2012.

Miami-Dade County Metropolitan Planning Organization

The Miami-Dade County MPO, Bicycle Pedestrian Coordinator, noted that they have reviewed the commitments under the Krome Avenue Action Plan (as adopted by the MPO in 1999), which include an eight-foot shared-use path and an eight-foot unimproved equestrian trail.

Miami-Dade County Parks and Recreation Department (now known as Miami-Dade County Parks, Recreation, and Open Spaces Department)

The MDPROS noted that there are not impacts to County parks or recreation lands.

Other Agencies

The following agencies replied with no comments: Federal Aviation Administration - Airport District Office, Florida DCA (now known as the FDEO) Division of Growth Management, Florida SHPO, Florida Office of Environmental Policy, Florida Fish & Wildlife Conservation Commission South Region in West Palm Beach, and Miami-Dade County Transit Agency.

5.2.3 Efficient Transportation Decision Making Screening

Agency coordination for this project was conducted through the FDOT ETDM process (ETDM #7800). Through this process, the FDOT informed a number of federal, state, and local agencies of the existence of this project and its scope. The ETDM process was designed to provide resource agencies and the public access to transportation project plans and information about potential effects on resources through an online interactive Environmental Screening Tool (EST), facilitating interaction among planners, regulatory and resource agencies, and affected communities to review and provide input on transportation projects. The ETDM process consists of three stages – Planning, Programming, and Project Development. Because the Krome South project began before the full implementation of the ETDM process, the project was not screened in the Planning Phase, but rather was entered into the EST directly in the Programming Phase of the ETDM process. During the Programming Phase screening of the project that occurred between May 22, 2006 and July 6, 2006, each reviewing agency had the opportunity to comment on and assign a "Degree of Effect" to each project issue. A summary of the agency Degree of Effect ratings are provided in ***Table 5-1***. Please refer to ***Appendix M*** for ETDM Summary Report (originally published on October 4, 2007 and re-published on October 9, 2007, and September 20, 2010).

Table 5-1 – Efficient Transportation Decision Making Agency Degree of Effect Ratings

Issue	Agency	Degree of Effect
Air Quality	USEPA	Minimal
Coastal and Marine	No review	
Contamination	USEPA	Moderate
	FDEP	Moderate
Farmlands	No review	
Floodplains	No review	
Infrastructure	No review	
Navigation	No review	
Special Designations	No review	
Water Quality and Quantity	USEPA	Moderate
	FDEP	Moderate
Wetlands	USEPA	Moderate
	USACE	Minimal
	USFWS	Minimal
	National Marine Fisheries Service	None
	FDEP	Moderate
Wildlife and Habitat	USFWS	Minimal
	FWC	Moderate
Historic and Archeological Sites	FDOS	Moderate
Recreation Areas	FDEP	Moderate
Section 4(f) Potential	No review	
Aesthetics	FDOT Six	Moderate
Economic	FDOT Six	Enhanced
Land Use	FHWA	Moderate
	FDOT Six	Moderate
	FDCA	None
Mobility	FDOT Six	Enhanced
Relocation	FDOT Six	Moderate
Social	FDOT Six	Minimal
Secondary and Cumulative Effects	FWC	Moderate

At the conclusion of the Programming Phase of the ETDM process, the ETDM Coordinator for the project reviews all of the information received through the EST to make a determination about the potential level of impacts for each resource topic and assigns a Summary Degree of Effect rating. The Summary Degree of Effect ratings for this project are shown in ***Table 5-2***.

Table 5-2 – Efficient Transportation Decision Making Summary Degree of Effect Ratings

Issue	Summary Degree of Effect
Air Quality	None
Coastal and Marine	N/A / No Involvement
Contaminated Sites	Moderate
Farmlands	Minimal
Floodplains	None
Infrastructure	Minimal
Navigation	N/A / No Involvement
Special Designations	Moderate
Water Quality and Quantity	Minimal
Wetlands	Minimal
Wildlife and Habitat	Minimal
Historic and Archeological Sites	Minimal
Recreation Areas	Moderate
Section 4(f) Potential	Minimal
Aesthetics	Minimal
Economic	None
Land Use	Minimal
Mobility	Enhanced
Relocation	Minimal
Social	Minimal
Secondary and Cumulative Effects	Minimal

The substantive comments from the agencies, as well as the responses provided by FDOT through the EST, are provided in the section below. Eight agencies provided comments during the 2006 review period. The responses to the 2006 comments were documented in the ETDM Summary Report published in 2007. As the project continued to develop, the project was re-screened through the EST in 2010. Three additional comments were received from the 2010 review period, as noted below. Based on discussions with these three agencies, it was agreed that responses to the 2010 comments would be provided in the environmental document (the *Draft Environmental Impact Statement* provided for public and agency review).The ETDM Programming Summary Report with all of the agencies' comments is provided in ***Appendix M***.

Additional agency coordination and the resulting analyses and updates which were generated outside of ETDM and the EST can be found under each impact topic in ***Chapter 3*** and ***Chapter 4*** of this document. The *Draft Environmental Impact Statement* was uploaded to the EST again for review during the public hearing phase of the project and responses are documented in this *Final Environmental Impact Statement*.

5.2.4 Summary of Agency Comments and Florida Department of Transportation Responses

5.2.4.1 Federal Agencies

Federal Highway Administration

COMMENT #1: "The project is located in a relatively undeveloped area that is primarily agricultural, and includes protected plant communities (pine rockland) that may be globally imperiled. The environmental document should assess secondary impacts to these areas, as well as cumulative impacts to agricultural lands, protected plant communities, and other natural resources."

RESPONSE: The study corridor traverses farming and low-density residential communities. The FDOT has coordinated the evaluation of farmland conversion impacts for the project with the U.S. Department of Agriculture NRCS. A Corridor Assessment is currently being prepared by the FDOT to complete the Farmland Conversion Impact Rating for Corridor Type Projects form for resubmittal to the NRCS for final concurrence/approval.

Coordination has been and will continue to be conducted with the Miami-Dade EEL Program regarding potential impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 parcel (protected pineland).

Also see Summary Degree of Effect for "Secondary and Cumulative Effects."

Land Use was addressed in the *Draft Environmental Impact Statement* released for public and agency review and is addressed in this *Final Environmental Impact Statement*.

U.S. Environmental Protection Agency

COMMENT #1: "The project is in an area designated as [a] non-Attainment area. An air quality study is needed to demonstrate that the project will not cause an exceedance of the [National Ambient Air Quality Standards]."

RESPONSE: In accordance with applicable FHWA guidelines and guidelines contained in the FDOT *PD&E Manual*, Part 2, Chapter 16 – Air Quality Analysis (dated September 13, 2006), potential air quality impacts in the area surrounding the project corridor were assessed for all viable project alternatives, including the No-Build Alternative. An *Air Quality Technical Memorandum* was prepared, which is on file at the FDOT District Six offices in Miami, Florida and is incorporated by reference.

The results of the CO screening analysis indicate that the proposed project is not expected to cause an exceedance of the one-hour or eight-hour NAAQS for CO (35 PPM and 9 PPM, respectively). The project passes the CO screening analysis, and air quality impacts resulting from the proposed project are not expected.

As of June 2005, Miami-Dade County has been designated as in attainment for all of the NAAQS under the criteria provided in the Clean Air Act. This project is also included in the area's TIP that has been approved by the Miami-Dade MPO. Therefore, the project is located in an area which is designated as in attainment under the criteria provided in the Clean Air Act; the Clean Air Act conformity requirements do not apply to the project.

COMMENT #2: "Based on the ETDM data 134 acres of the Brownfield site (Redlands/Leasure City area) is within the 500' buffer zone for this site. Additionally there are more than 10 petroleum tanks and gasoline station sites within the same buffer. There is a potential of encountering contamination on this site. A site specific survey and study must be conducted to assess contaminant releases within the buffer zone. Based on the results of such assessment, appropriate measures must be taken during planning and construction to appropriately handle contaminated materials and to meet other site management requirements. DERM and FDEP must be consulted in interpreting contamination assessment data."

RESPONSE: A CSER has been prepared for the project. Potentially contaminated sites, including those referenced above, were identified and assessed. The project corridor is located approximately 3,000 northwest of the closest brownfield area. If necessary, additional contamination assessments will be conducted during the final design phase of the project.

COMMENT #3: "Impact to surface water must be minimized by careful and thorough treatment of the surface water runoff. A complete hydrology study should be perform[ed] to define the qualitative and quantitative impact on the groundwater – surface water interaction."

RESPONSE: Miami-Dade County is underlain by the Biscayne Aquifer system, the sole source of potable water for most of southeastern Florida. All necessary precautions and BMPs pertaining to construction will be followed to prevent adverse impacts to the underlying sole source aquifer (Biscayne Aquifer). The AN response from the USEPA (dated June 30, 2004) concluded that the project should have no negative impacts to the sole source aquifer, if BMPs are employed. Both agencies recommended a study to evaluate the existing and future stormwater runoff conditions and effects. The FDEP also stressed the importance of treating stormwater runoff. Three areas identified as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit plus the SFWMD's C-102/Princeton and C-103/Mowry canals. Water quality impacts to these surface water areas resulting from potential upland erosion and sedimentation during construction activities will be controlled in accordance with the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction* and through the use of BMPs, including temporary erosion control measures to fully comply with federal and state water quality standards. Furthermore, stormwater runoff will be treated prior to discharge per state and local stormwater management criteria and every effort will be made to maximize storage and treatment of stormwater. The project's stormwater facility design will include, at a minimum, the water quantity and quality requirements as required by Chapter 24, Section 24-58 of the Miami-Dade County Code. The Miami-Dade County requirements meet or exceed the state of Florida water quality and water quantity requirements. The proposed stormwater management system will be permitted through the SFWMD and will meet all required criteria for storage and treatment. Therefore, it is

anticipated that water quality within the proposed project area may improve due to the proposed stormwater treatment features.

COMMENT #4: "Based on the ETDM analysis, wetlands may be impacted with the proposed project. Impacts to wetlands must be minimized. Unavoidable impact must be fully mitigated."

RESPONSE: No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the U.S., as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area; therefore, no impacts to jurisdictional vegetated wetlands are anticipated as a result of this project. Three areas identified as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street. Nationwide authorization from the USACE will be applied for during the final design phase of the project for impacts to surface waters. These issues have been addressed in the WER for the project.

National Marine Fisheries Service

COMMENT #1: "Based on the project location, information provided in the ETDM website, discussions with other agencies, and GIS-analysis on wetlands, and a site visit on June 18, 2006, [National Oceanic and Atmospheric Administration's] National Marine Fisheries Service concludes the proposed work would not directly impact areas that support [National Oceanic and Atmospheric Administration] trust resources. We have no comments or recommendations to provide pursuant to the [Essential Fish Habitat] requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) P.L. 104-297. Further consultation on this matter is not necessary unless future modifications are proposed and you believe that the proposed action may result in adverse impacts to [Essential Fish Habitat]."

RESPONSE: No response required.

U.S. Army Corps of Engineers

COMMENT #1: "Impacts to tributaries (canals) probable but should be minimal and qualify for a NW 14."

RESPONSE: No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the U.S., as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area; therefore, no impacts to jurisdictional vegetated wetlands are anticipated as a result of this project. Three areas identified as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMD's C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMD's C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street.

Nationwide authorization from the USACE will be applied for during the final design phase of the project for impacts to surface waters. These issues have been addressed in the WER for the project.

U.S. Fish and Wildlife Service

COMMENT #1: "Wetlands provide important habitat for fish and wildlife. If wetlands are found within the project area, we recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of wetland resources."

RESPONSE: No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the U.S., as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area; therefore, no impacts to jurisdictional vegetated wetlands are anticipated as a result of this project. Three areas identified as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMD's C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMD's C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street. Nationwide authorization from the USACE will be applied for during the final design phase of the project for impacts to surface waters. These issues have been addressed in the WER for the project.

COMMENT #2: "…The [USFWS] has reviewed our GIS database for recorded locations of federally-listed Threatened and Endangered species on or adjacent to the project study area… The study corridor is located in the Core Foraging Areas (within 18.6 miles) of two active nesting colonies of the Endangered wood stork…"

RESPONSE: The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected pine rockland community known as Owaissa Bauer Pineland Preserve Addition No. 1 is located adjacent to the roadway corridor, and a privately-owned parcel, owned by the Florida Audubon Society, consists of planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit, the SFWMD's C-102/Princeton canal, and the SFWMD's C-103/Mowry canal.

Federally and state-listed wildlife species that may potentially occur along the study corridor have been evaluated in the ESBA and the *ESBA Supplemental Memorandum*, including the wood stork.

Issues raised by the USFWS and FWC have been addressed in the ESBA and the *ESBA Supplemental Memorandum* for the project. Impacts to protected species are expected to be

minimal. Coordination is being conducted with USFWS, FWC, FDACS, Miami-Dade County DERM EEL Program, and the MDPROS NAM to discuss avoidance/minimization efforts and potential mitigation.

COMMENT #3 (06/12/2011): "The [USFWS] concurs with the comments of the [FWC]. We further recommend that project can be designed to completely avoid impacts to the 9.39-acre Owaissa Bauer Pineland Preserve Addition 1, southeast of the SW 264th Street intersection."

RESPONSE: Since complete avoidance of the EEL parcel was not possible, additional engineering analysis was conducted resulting in a "Minimization Treatment" that would reduce the potential impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 site to the greatest extent practicable while maintaining safe engineering practices (i.e., roadway geometry, etc.). The minimization treatment reduces the overall proposed improvements to Krome Avenue at the Owaissa Bauer Pineland Preserve Addition No. 1 site by a linear distance range of 18 to 31 feet in width and reduces the impact area from a range of approximately 0.84 acres (Alternatives 1 and 2) to 1.27 acres (Alternative 3) to a minimum impact range of approximately 0.53 acres (Alternatives 1 and 2) to 0.82 acres (Alternative 3) depending on which build alternative the treatment is applied. With the minimization treatment applied to Alternatives 1 and 2, an additional 0.31 acres of the Owaissa Bauer Pineland Preserve Addition No. 1 site will be preserved. With the minimization treatment applied to Alternative 3, an additional 0.45 acres of the site will be preserved. With the minimization treatment applied to Alternative 4, an additional 0.31 acres of the site will be preserved. With the minimization treatment applied to Alternative 5, an additional 0.26 acres of the site will be preserved. With the minimization treatment applied to the typical sections, the majority of remaining impacts will occur within the westernmost edge of the site, which appears to be regularly disturbed by mowing, vehicle off-road parking and pedestrian traffic. In addition, as part of the minimization treatment, several protection measures will be provided for the remainder of the Owaissa Bauer Pineland Preserve Addition No. 1 site through the addition of guardrail and possibly fencing along the Krome Avenue side of the site (pending approval from the Miami-Dade County EEL Program representatives). Impacts per each alternative to the EEL parcel have been assessed in the ESBA.

5.2.4.2 State Agencies

Florida Department of Environmental Protection

COMMENT #1: "Stormwater runoff from the road surface may alter adjacent wetlands and surface waters through increased pollutant loading. Natural resource impacts within and adjacent to the proposed road right-of-way will likely include alteration of the existing surface water hydrology and natural drainage patterns, and reduction in flood attenuation capacity of area creeks, ditches, and sloughs as a result of increased impervious surface within the watershed. Every effort should be made to maximize the treatment of stormwater runoff from the proposed road project to prevent ground and surface water contamination. Stormwater treatment should be designed to maintain the natural pre-development hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands."

RESPONSE: Miami-Dade County is underlain by the Biscayne Aquifer system, the sole source of potable water for most of southeastern Florida. All necessary precautions and BMPs pertaining to construction will be followed to prevent adverse impacts to the underlying sole source aquifer (Biscayne Aquifer). The AN response from the USEPA (dated June 30, 2004) concluded that the project should have no negative impacts to the sole source aquifer, if BMPs are employed. Both agencies recommended a study to evaluate the existing and future stormwater runoff conditions and effects. The FDEP also stressed the importance of treating stormwater runoff. Three areas identified as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit plus the SFWMD C-102/Princeton and C-103/Mowry canals. Water quality impacts to these surface water areas resulting from potential upland erosion and sedimentation during construction activities will be controlled in accordance with the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction* and through the use of BMPs, including temporary erosion control measures to fully comply with federal and state water quality standards. Furthermore, stormwater runoff will be treated prior to discharge per state and local stormwater management criteria and every effort will be made to maximize storage and treatment of stormwater. The project's stormwater facility design will include, at a minimum, the water quantity and quality requirements as required by Chapter 24, Section 24-58 of the Miami-Dade County Code. The Miami-Dade County requirements meet or exceed the state of Florida water quality and water quantity requirements. The proposed stormwater management system will be permitted through the SFWMD and will meet all required criteria for storage and treatment. Therefore, it is anticipated that water quality within the proposed project area may improve due to the proposed stormwater treatment features.

COMMENT #2: "The National Wetlands Inventory GIS report indicates that there are 81.07 acres of palustrine wetlands within 500 feet of the project area. The project will require an [Environmental Resource Permit] from the SFWMD. The [Environmental Resource Permit] applicant will be required to eliminate or reduce the proposed wetland resource impacts of the roadway widening project to the greatest extent practicable:

- Minimization should emphasize avoidance-oriented corridor alignments, wetland fill reductions via pile bridging and steep/vertically retained side slopes, and median width reductions within safety limits.
- Wetlands should not be displaced by the installation of stormwater conveyance and treatment swales; compensatory treatment in adjacent uplands is the leading alternative.
- After avoidance and minimization have been exhausted, mitigation must be proposed to offset the adverse impacts of the project to existing wetland functions and values. Significant attention is given to forested wetland systems, which are difficult to mitigate.
- The cumulative impacts of concurrent and future road improvement projects in the vicinity of the subject project should also be addressed."

RESPONSE: Note that the 81.07 acres of palustrine wetlands identified through the GIS report are located entirely outside of the project limits and will not be impacted as a result of this project. Three areas identified as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which

crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street. An Environmental Resources Permit will be applied for and obtained, prior to construction, for impacts to the three surface water areas and for the new stormwater management system. Alternatives will consider minimization of impacts to surface waters, while enhancing the safety and drainage needs of the facility. Because no jurisdictional wetland resources will be impacted as a result of this project, no mitigation is proposed. Also, any loss in functional values from unavoidable impacts to the existing rock mining pit and canal features (all with an almost non-existent littoral zone and sparsely vegetated side slopes) will be compensated with the construction of the new stormwater system which will include swale/dry retention areas conducive to the growth of hydrophytic vegetation. The proposed drainage system will have a net positive effect on the quality of water entering receiving waters and wetlands.

COMMENT #3: "The following public conservation lands are located in the vicinity of this project: the Mowery and Princeton Trails, Dade County Archipelago Florida Forever Project, Ingram Pineland, Camp Owaissa Bauer/Pineland, and the Mary Krome Bird Refuge. These lands contain significant natural communities and numerous element occurrences of listed species. Therefore, future environmental documentation should include an evaluation of the primary, secondary, and cumulative impacts of the proposed roadway widening on construction on the above public lands and any proposed acquisition sites."

RESPONSE: While there are no Miami-Dade County public parks located directly on Krome Avenue, there are several Miami-Dade County neighborhood and local parks located in the vicinity of the study corridor in addition to the resources mentioned by the ETDM Environmental Technical Advisory Team, including Oak Creek Park, Kings Grant Park, and Redland Fruit and Spice Park. The Everglades Archery Range and the Redland Golf and Country Club are also located in the vicinity of the study corridor.

Two unimproved SFWMD canal maintenance access roads bisect Krome Avenue within the study limits. One runs parallel to the C-103/Mowry Canal, just north of SW 280th Street. The second runs parallel to the C-102/Princeton Canal, at approximately SW 196th Street. Both of these are noted as potential future "greenways" on the 2009 Miami-Dade Open Space Master Plan Vision Map. These dirt roads are currently owned/maintained by the SFWMD for maintenance access to the adjacent canals. The SFWMD, the owner of these canal maintenance access roads, has no plans at this time for development of these canal maintenance access roads for trail use.

The Dade County Archipelago Florida Forever Project helps to conserve the subtropical pinelands and hardwood hammocks in Miami-Dade County. These sites, including the Miami Rockridge Pinelands (including Ingram Pineland) and the Owaissa Bauer Pinelands (including the Owaissa Bauer Pineland Preserve Addition No. 1) are administered through the Miami-Dade County DERM EEL Program.

Potential impacts to these areas were fully evaluated and details were included in ***Chapter 4*** of the *Draft Environmental Impact Statement* released for public and agency review and are included in this *Final Environmental Impact Statement*.

COMMENT #4: "- Based on a review of National Priority List (NPL) / Superfund Sites, Solid Waste / Dump Site, Brownfield, and UST GIS data layers publicly available from the Florida Geographic Data Library, there are many potential contamination sites and hazardous materials sites present throughout the project area.

- Groundwater monitoring wells are likely present along and near the entire length of the project.
- Arrangements need to be made to properly abandon (in accordance with Chapter 62-532, FAC) and or replace any wells that may be destroyed or damaged during construction.
- There are numerous public supply wellfields in the project boundaries, with probably hundreds of water production wells (irrigation, potable, industrial). BMPs need to be used during all construction activities.
- In the event contamination is detected during construction, the FDEP and Miami-Dade County DERM should be notified and the FDOT may need to address the problem through additional assessment and/or remediation activities. Dewatering projects would require permits / approval from the SFWMD, Water Use Section and coordination with the Miami-Dade County DERM.
- Any land clearing or construction debris must be characterized for proper disposal. Potentially hazardous materials must be properly managed in accordance with Chapter 62-730, FAC. In addition, any solid wastes or other non-hazardous debris must be managed in accordance with Chapter 62-701, FAC.
- Please be advised that a new rule, 62-780, FAC, became effective on April 17, 2005. In addition, Chapters 62-770, 62-777, 62-782 and 62-785, FAC, were amended on April 17, 2005 to incorporate recent statutory changes. Depending on the findings of the environmental assessments, there are "off-property" notification responsibilities potentially associated with this project. These rules may be found at the following website: http://www.dep.state.fl.us/waste/
- Early planning to address these issues is essential to meet construction and cleanup (if required) timeframes. Innovative technologies, such as special storm water management systems, engineering controls and institutional controls, such as conditions on water production wells and dewatering restrictions, may be required, depending on the results of environmental assessments.
- Staging areas, with controlled access, should be planned in order to safely store raw material paints, adhesives, fuels, solvents, lubricating oils, etc. that will be used during construction. All containers need to be properly labeled. The project managers should consider developing written construction Contingency Plans in the event of a natural disaster, spill, fire or environmental release of hazardous materials stored / handled for the project construction."

RESPONSE: All of these issues are being addressed in the CSER for the project. If necessary, additional contamination assessments will be conducted during the final design phase of the project. The FDOT will adhere to all current federal, state and local government ordinances, permits, BMPs, planning, design, construction, operation, maintenance, monitoring requirements and engineering recommendations to protect the above and below ground environmental integrity of the roadway corridor and its general vicinity. Potential impacts during construction

(including waste handling and disposal) will be minimized through adherence to all state and local regulations and to the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*.

Florida Fish and Wildlife Conservation Commission

COMMENT #1: "Depending on which project Alternative is chosen and implemented, direct impacts on listed species and habitat resources could be moderate, while secondary and cumulative impacts would also be moderate."

RESPONSE: The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected pine rockland community known as Owaissa Bauer Pineland Preserve Addition No. 1 is located adjacent to the roadway corridor, and a privately-owned parcel, owned by the Florida Audubon Society, consists of planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit, the SFWMD's C-102/Princeton canal, and the SFWMD's C-103/Mowry canal.

Federal and state-listed wildlife species and protected habitats that may potentially occur along the study corridor have been evaluated in the ESBA and the *ESBA Supplemental Memorandum* per each alternative, where appropriate.

Issues raised by the USFWS and FWC have been addressed in the ESBA and the *ESBA Supplemental Memorandum* for the project. Impacts to protected species are expected to be minimal. Coordination is being conducted with USFWS, FWC, FDACS, Miami-Dade County DERM EEL Program, and the MDPROS NAM to discuss avoidance/minimization efforts and potential mitigation.

COMMENT #2: "In lieu of a Build Alternative, we support a TSM Alternative …"

RESPONSE: This alternative involves selectively upgrading deficient roadway areas with improved signage, turn lanes, pavement markings, and traffic signals. TSM intersection improvements have already been constructed along portions of the study corridor. However, this alternative will not satisfy the safety, capacity, and traffic operations improvement needs along this section of roadway. Short-term safety improvement projects were implemented at ten intersections along Krome Avenue within the study limits between the years 2003 to 2007.

- SW 136th Street (2003-2004)
- SW 168th Street (2003-2004)
- SW 184th Street (2007)
- SW 192nd Street (2003-2004)
- SW 200th Street (2007)
- SW 216th Street (2007)
- SW 256th Street (2003-2004)
- SW 272nd Street (2003-2004)
- SW 288th Street (2007)
- SW 296th Street (2007)

These intersection improvements consisted of adding separate turn lanes or modifying pavement markings to delineate turn lanes. These improvements were anticipated to reduce crashes at the intersections with the exception of head-on and ran-off-the-road crashes. The TSM improvements did not substantially enhance the operation of the signalized intersections or safety issues associated with this corridor and did not include corridor drainage improvements. The congestion along Krome Avenue is caused by a lack of through lane capacity and high turning volumes. Long-term improvements are necessary to mitigate the existing safety deficiencies, increase capacity to accommodate future travel demand, improve access management, and provide stormwater management. Therefore, further consideration of this alternative was eliminated from the analysis.

Federal and state-listed wildlife species and protected habitats that may potentially occur along the study corridor have been evaluated in the ESBA and the *ESBA Supplemental Memorandum* per each build alternative, where appropriate.

COMMENT #3: "Wildlife surveys for listed species should be performed …"

RESPONSE: The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected pine rockland community known as Owaissa Bauer Pineland Preserve Addition No. 1 is located adjacent to the roadway corridor, and a privately-owned parcel, owned by the Florida Audubon Society, consists of planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit, the SFWMD's C-102/Princeton canal, and the SFWMD's C-103/Mowry canal.

Federal and state-listed wildlife species that may potentially occur along the study corridor have been surveyed for and evaluated in the ESBA and the *ESBA Supplemental Memorandum* .

Issues raised by the USFWS and FWC have been addressed in the ESBA and the *ESBA Supplemental Memorandum* for the project. Impacts to protected species are expected to be minimal. Coordination is being conducted with USFWS, FWC, FDACS, Miami-Dade County DERM EEL Program, and the MDPROS NAM to discuss avoidance/minimization efforts and potential mitigation.

COMMENT #4: "An in-depth preliminary assessment of incidental and cumulative impacts should be made on this project, and funds should be identified to address mitigation of secondary impacts and be included in the project budget."

RESPONSE: The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-

way). A protected pine rockland community known as Owaissa Bauer Pineland Preserve Addition No. 1 is located adjacent to the roadway corridor, and a privately-owned parcel, owned by the Florida Audubon Society, consists of planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit, the SFWMD's C-102/Princeton canal, and the SFWMD's C-103/Mowry canal. These areas do not contain viable wetland vegetation; therefore no mitigation is anticipated to be required for impacts to these areas. Coordination is being conducted with Miami-Dade County DERM EEL Program, and the MDPROS NAM to discuss avoidance/minimization efforts and potential mitigation in relation to unavoidable impacts to the EEL parcel. This coordination is expected to continue during the final design phase of the project.

Federal and state-listed wildlife species and protected habitats that may potentially occur along the study corridor have been evaluated in the ESBA and the *ESBA Supplemental Memorandum* per each build alternative, where appropriate.

COMMENT #5: "A plan should be formulated and implemented to avoid, minimize, or mitigate impacts to habitat and listed species based on the results of field surveys. An Incidental Take Permit may also be needed from our agency for the gopher tortoise and its commensal species."

RESPONSE: The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected pine rockland community known as Owaissa Bauer Pineland Preserve Addition No. 1 is located adjacent to the roadway corridor, and a privately-owned parcel, owned by the Florida Audubon Society consists of planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit, the SFWMD's C-102/Princeton canal, and the SFWMD's C-103/Mowry canal.

Federal and state-listed wildlife species and protected habitats that may potentially occur along the study corridor have been evaluated in the ESBA and the *ESBA Supplemental Memorandum* per each build alternative, where appropriate. Mitigation measures for impacts is discussed, where necessary.

Coordination has been and will continue to be conducted with the Miami-Dade County DERM EEL Program, and the MDPROS NAM to discuss avoidance/minimization efforts and potential mitigation in relation to unavoidable impacts to the EEL parcel.

COMMENT #6: "A complete accounting should be made of all upland and wetland plant communities within the project area, and compensatory mitigation should be required…"

RESPONSE: The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental

shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected pine rockland community known as Owaissa Bauer Pineland Preserve Addition No. 1 is located adjacent to the roadway corridor, and a privately-owned parcel, owned by the Florida Audubon Society, consists of planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit, the SFWMD's C-102/Princeton canal, and the SFWMD's C-103/Mowry canal.

Upland and wetland plant community inventories were conducted. Impact assessments and mitigation measures relating to the existing plants have been included in the ESBA and the *ESBA Supplemental Memorandum*, where appropriate.

Coordination has been and will continue to be conducted with the Miami-Dade County DERM EEL Program, and the MDPROS NAM to discuss avoidance/minimization efforts and potential mitigation in relation to unavoidable impacts to the EEL parcel.

COMMENT #7: "Stormwater runoff into area wetland during construction … should be contained to prevent water quality degradation and increased sedimentation."

RESPONSE: The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected pine rockland community known as Owaissa Bauer Pineland Preserve Addition No. 1 is located adjacent to the roadway corridor, and a privately-owned parcel, owned by the Florida Audubon Society, consists of planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit, the SFWMD's C-102/Princeton canal, and the SFWMD's C-103/Mowry canal. Water quality degradation will be avoided during construction through the adherence to the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*. All best management practices will be utilized during the construction phase of the project for erosion control and water quality considerations.

COMMENT #8 (6/12/2011): "Provided the project can be designed to completely avoid impacts to the 9.39-acre Owaissa Bauer Pineland Preserve Addition 1, southeast of the SW 264th Street intersection, we believe it will have minimal effects on fish and wildlife resources. We recommend that the PD&E Study address natural resources by including the following measures for conserving fish and wildlife and habitat resources that may occur within and adjacent to the project area. Plant community mapping and wildlife surveys for the occurrence of wildlife species listed by the Federal Endangered Species Act as Endangered or Threatened, or by the state of Florida as Threatened or Species of Special Concern should be performed, both along the Right-of way and within sites proposed for Drainage Retention Areas. Based on the survey results, a plan should be developed to address direct, indirect, and cumulative effects of the

project on wildlife and habitat resources, including listed species. Avoidance, minimization, and mitigation measures should also be formulated and implemented. Drainage Retention Areas and equipment staging areas should be located in previously disturbed sites to avoid habitat destruction or degradation. A compensatory mitigation plan should include the replacement of any wetland, upland, or aquatic habitat lost as a result of the project. This could be achieved by purchasing land, or securing conservation easements over lands adjacent to existing public lands, and by habitat restoration. Replacement habitat for mitigation should be type for type, as productive, and equal to or of higher functional value."

RESPONSE: Since complete avoidance of the EEL parcel was not possible, additional engineering analysis was conducted resulting in a "Minimization Treatment" that would reduce the potential impacts to the Owaissa Bauer Pineland Preserve Addition No. 1 site to the greatest extent practicable while maintaining safe engineering practices (i.e., roadway geometry, etc.). The minimization treatment reduces the overall proposed improvements to Krome Avenue at the Owaissa Bauer Pineland Preserve Addition No. 1 site by a linear distance range of 18 to 31 feet in width and reduces the impact area from a range of approximately 0.84 acres (Alternatives 1 and 2) to 1.27 acres (Alternative 3) to a minimum impact range of approximately 0.53 acres (Alternatives 1 and 2) to 0.82 acres (Alternative 3) depending on which build alternative the treatment is applied. With the minimization treatment applied to Alternatives 1 and 2, an additional 0.31 acres of the Owaissa Bauer Pineland Preserve Addition No. 1 site will be preserved. With the minimization treatment applied to Alternative 3, an additional 0.45 acres of the site will be preserved. With the minimization treatment applied to Alternative 4, an additional 0.31 acres of the site will be preserved. With the minimization treatment applied to Alternative 5, an additional 0.26 acres of the site will be preserved. With the minimization treatment applied to the typical sections, the majority of remaining impacts will occur within the westernmost edge of the site, which appears to be regularly disturbed by mowing, vehicle off-road parking and pedestrian traffic. In addition, as part of the minimization treatment, several protection measures will be provided for the remainder of the Owaissa Bauer Pineland Preserve Addition No. 1 site through the addition of guardrail and possibly fencing along the Krome Avenue side of the site (pending approval from the Miami-Dade County EEL Program representatives).

Federally and state-listed wildlife species that may potentially occur along the study corridor have been evaluated in the ESBA and the *ESBA Supplemental Memorandum* and the results have been summarized in this document.

No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the U.S., as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area; therefore, no impacts to jurisdictional vegetated wetlands are anticipated as a result of this project. Three areas identified as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street. Nationwide authorization from the USACE will be applied for during the final design phase of the project for impacts to surface waters. These issues have been addressed in the WER for the project.

Florida Department of State

COMMENT #1: "Although this roadway has not been subjected to a systematic CRAS, several surveys undertaken by Dade County and the City of Homestead have recorded numerous historic buildings including two NR-listed resources, within the one-mile buffer. Most of these have not been evaluated by SHPO. Five buildings are located within the 100-foot buffer. Only one has been previously evaluated … No archeological sites have been previously recorded within the one-mile buffer zone."

RESPONSE: A CRAS has been conducted for this project and has been submitted to the SHPO for review. The CRAS and substantive correspondence were included in the *Draft Environmental Impact Statement* released for public and agency review and are included in this *Final Environmental Impact Statement*.

South Florida Water Management District

COMMENT #1 (6/12/2011): "Wetlands and other surface waters, as defined by Chapter 62-340, [FAC], must be identified, quantified and characterized during the permit review process. A secondary wetland impact analysis should also be completed during the [Environmental Resource Permit] permit process. Additionally, surveys for wetland dependent species utilization of the corridor must be completed during project review."

RESPONSE: No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the U.S., as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area; therefore, no impacts to jurisdictional vegetated wetlands are anticipated as a result of this project. Three areas identified as surface waters were identified within the study corridor. These areas consist of an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street. A SFWMD [Environmental Resource Permit] will be applied for during the final design phase of the project for impacts to surface waters. These issues have been addressed in the WER for the project.

5.2.5 Environmental Agency Meetings

As a result of the scoping meeting and to better define and address the concerns of federal and state environmental permit and review agencies, numerous contacts were made in the form of written correspondence and telephone contacts.

The agency update meeting held on September 10, 2012, generated one comment regarding connection to the proposed shared-use path. The suggested connection is beyond the limits of this project; however, the FDOT is incorporating the connection into the adjacent Krome Avenue project (FM # 249614-7-52-01).

Please refer to ***Appendix X*** for correspondence.

5.3 COMMUNITY OUTREACH

A team consisting of staff from the FDOT Intermodal Systems Development Office plus consultant team members met with numerous stakeholders (see ***Table 5-3***) such as area residents, community associations, business owners, and various local and governmental agencies. The purpose of these meetings was to gain valuable insight about the potential impacts that this project might have on the community. Comments, concerns, and suggestions from these stakeholders are documented in the Public Involvement Program in ***Appendix U*** and incorporated into the Krome South project when possible.

Table 5-3 – Summary List of Meetings Held

Meeting Date	Organization Representative(s)	Organization	Represents
10/20/03	Jose 'Pepe' Diaz	Miami-Dade County Commissioner – District 12	County Government
10/23/03	Ken Sorensen	State Representative – District 120	State Government
10/30/03	David Rivera	State Representative – District 112	State Government
10/30/03	Marcelo Llorente	State Representative – District 116	State Government
11/05/03	Debbie Waserman-Shultz	State Senator – District 34	State Government
11/12/03	Joe Martinez	Miami-Dade County Commissioner – District 11	County Government
12/17/03	Mark Woerner, AICP	Miami-Dade County Planning Department	County Government
01/07/04	Bill Losner	1st National Bank of South Florida	Landowners/Farmers
01/07/04	Mary Finlan	Greater Homestead/Florida City Chamber of Commerce	Local Businesses
01/08/04	Katy Sorenson	Miami-Dade County Commissioner – District 8	County Government
01/08/04	Redland Citizens' Association	Redland Citizens' Association	Citizens Association
01/14/04	Dennis Moss	Miami-Dade County Commissioner – District 9	County Government
01/22/04	Rudy Garcia	State Senator – District 40	State Government
02/24/04	Richard Alger	Alger Farms, Inc.	Local Business/Farmers
02/24/04	Hector Hernandez	El Toro Taco	Business Owner
02/26/04	Paul Cardwell	Florida City State Farmers' Market	Farming Industry
02/26/04	Brian Kimball	Ed Kimball & Sons Transportation Services Inc.	Trucking Industry
02/26/04	Eugene Leon, Project Manager	Florida City	City Government
02/26/04	FDACS	FDACS	State Government
02/27/04	Juan Carlos Zapata	State Representative – District 119	State Government
03/10/04	Transportation Aesthetics Review Committee	Miami Dade County – MPO Subcommittee	Local Government
03/10/04	Dade County Farm Bureau	Dade County Farm Bureau	Agriculture/Farmers
03/10/04	Katie Edwards	Dade County Farm Bureau	Agriculture/Farmers
03/10/04	Mike Richardson	Vision Council	Economic Development
04/06/04	Jorge Tojeiros	Property Owner	Property Owner
04/07/04	Rick Stauts	City of Homestead Community Redevelopment Agency	City Government
04/07/04	Margarita Mojica	Land Owner/Property Owner	Landowner
04/07/04	Juan Carlos Santiago	Rock & Sod Connection, Inc.	Nursery/Renters
04/30/04	National Park Service	National Park Service, U.S. Department of the Interior	Federal Agency
04/30/04	Luis Silva	Property Owner	Property Owner
04/30/04	Bill Wright	Everglades National Park, National Park Service, U.S. Department of the Interior	Federal Agency
05/03/04	Paul Dimare	Dimare, Inc. (Nursery)	Business Owner

Table 5-3 – Summary List of Meetings Held

Meeting Date	Organization Representative(s)	Organization	Represents
05/13/04	Medora Krome Alleman, et. al.	Concerned Citizens and Nurseries Association	Citizens Association/.Landowner
05/19/04	Community Council #11	Local Community Council (Zoning Board)	Local Government
05/27/04	Homestead / Fl. City Chamber of Commerce	Local Chamber of Commerce	Economic Development
06/08/04	Steve Kirk	Migrant Workers	Migrant Workers
06/14/04	Miguel Uzquiano	Florida Nurseryman & Grower Association	Nursery/Farmers
06/14/04	Alicia Pena	8.5 square mile area	Property Owner
06/30/04	Citizens Transportation Advisory Committee	Citizens Transportation Advisory Committee	Local Government
07/15/04	David Robbins	Americana Village	Homeowners Association
07/21/04	Agencies Roundtable Scoping Meeting	Jurisdictional Agencies (Local, State, and Federal)	Local, State, and Federal Government
08/03/04	Dewey Steele	Tropical Fruit Growers Association	Farming Industry
08/03/04	April Gromnicki	Florida Audubon Society	Environmental Organization
08/03/04	Cynthia Guerra	Tropical Audubon Society	Environmental Organization
08/04/04	Mary & Martin Motes	Orchid Growers Association	Orchid Industry
08/09/04	Paul Mulherne	Grove Inn and Guesthouse	Business Owner
08/09/04	Board Members – Carston and Carol Rist	Tropical Audubon Society	Environmental Organization
08/19/04	Richard Grosso	Litigants in the Comprehensive Plan Amendment	Environmental Organization
08/25/04	Hammocks Citizen's Advisory Committee	Citizens Association	Citizens Association
09/16/04	Miccosukee Tribe of Indians of Florida	Sovereign Nation	Federal Agency
10/07/04	Homestead / Florida City Empowerment Zone	Neighborhood Board	Economic Development
12/06/04	Kendall Federation of Homeowners	Homeowners Association	Citizens Association
01/12/05	Comprehensive Everglades Restoration Plan	Comprehensive Everglades Restoration Plan	State Government
02/01/05	Juan Carlos Zapata	State Representative – District 119	State Government
03/15/05	Lt. Julio Pajon	Florida Highway Patrol	State Government
06/17/05	Community Council #14	Local Community Council (Zoning Board)	Local Government
06/17/05	Vision Council Business Forum Regarding South Miami Dade Transportation Projects	Local Community Council (Zoning Board)	Local Government
07/20/05	Miami Dade County DERM	Miami Dade County DERM	County Government

Table 5-3 – Summary List of Meetings Held

Meeting Date	Organization Representative(s)	Organization	Represents
07/20/05	Owaissa Bauer Pineland Preserve Addition No. 1	Miami-Dade County EEL Program	County Government
07/27/05	Miami-Dade County Bicycle and Pedestrian Advisory Committee	Miami-Dade County – MPO Subcommittee	County Government
09/28/05	Dianne Gray (Casino Manager) Lt. Rivera (Police Department) Jon Lee (Planning Department)	Miccosukee Tribe of Indians of Florida	Federal Agency
02/01/06	Denver Stutler, Jr.	FDOT Secretary	State Government
02/22/06	Citizens Transportation Advisory Committee	Citizens Transportation Advisory Committee	Local Government
04/27/06	Owaissa Bauer Pineland Preserve Addition No. 1	Miami-Dade County EEL Program	County Government
04/27/06	Miami Dade County DERM	Miami Dade County DERM	County Government
04/27/06	South Miami Dade Watershed Study Advisory Committee	South Miami Dade Watershed Study Advisory Committee	Citizens Association
06/21/06	Miami-Dade County Bicycle and Pedestrian Advisory Committee	Miami-Dade County – MPO subcommittee	County Government
08/12/06	United Citizens of South Link/United Citizens for Cutler Bay	Citizens Association	Citizens Association
10/25/06	Committee Members - Brett Bibeau, Susan Kairalla, Christine Leduc Amado Leon, Gabrielle Redfern, Eric Tullberg	Miami-Dade County Bicycle and Pedestrian Advisory Committee	County Government
03/19/08	Citizens Transportation Advisory Committee	Citizens Transportation Advisory Committee	Local Government
04/17/08	FHWA	FHWA	Federal Agency
02/04/09	Agricultural Practices Advisory Board	Agricultural Practices Advisory Board	County Government
09/10/12	Jane Griffin Dozier Julio Brea Elaine Johnson Flavio Quiroz Jim Murley Charles Cynlle Christopher Benitez Christie Velázquez Cynthia Guerra Janet Gil Rick Ammirato Mark Heinicke	Miami-Dade Parks City of Homestead Miami-Dade County DRER EMRD Miami-Dade Police Department South Florida Regional Planning Council MDFR/OEM Miami-Dade County Expressway Authority Miami-Dade County DRER EMRD Miami-Dade County EEL Program Miami-Dade County EEL Program City of Homestead Community Redevelopment Agency Miami-Dade Park & Recreation Department	Local Government
12/16/13	Board of Directors - George Butler, Tom Rieder, Carol Harris, David Hanck, Kern Carpenter, David Kaplan, Larry Dunagan, Jerry Frye, Steve Hoveland, Alice Pena, and Teena Borek	Dade County Farm Bureau	Agriculture/Farmers

5.3.1 Citizen's Advisory Committee

The CAC is a stakeholder group reflecting the range of communities, organizations, groups and individuals who will be affected by decisions regarding improvements to Krome Avenue within the project limits. The purpose of the CAC is to provide a range of stakeholder views regarding possible improvements to Krome Avenue and confirm they are clearly understood and fully considered by the project team. An additional purpose of the CAC is to work with the project team toward the greatest degree of consensus possible on how to address the issues and needs that will be identified through the process. The formation of the CAC is consistent with Title 23 USC, which provides for consultation with transportation safety stakeholders. Along with public input, the CAC for this project was instrumental in the development and evaluation of the project typical sections, and the selection of the FDOT-recommended alternative that was presented at the Public Hearing on December 11, 2013.

A CAC Guidelines and Workplan Book was developed in order to promote a dynamic and constructive dialogue among the members with a particular focus on the issues concerning the community regarding this PD&E study. All CAC meetings, agendas and minutes have been published on the project website. The agendas and minutes for each of the CAC meetings are found in ***Appendix Y***. The CAC meeting dates and topics are detailed in the following list:

- December 9, 2004 Meeting #1: Organizational
- February 1, 2005 Meeting #2: Methodology and Data Review
- March 8, 2005 Meeting #3: Safety Analysis
- May 2, 2005 Meeting #4: Population and Traffic Demand Projections
- June 9, 2005 Meeting #5: Review Safety & Population Projection Information
- July 19, 2005 Meeting #6: Law Enforcement Policy & Operational Analysis
- January 24, 2006 Meeting #7: Alternatives Cross-Sections
- February 28, 2006 Meeting #8: Review Revised Alternatives Cross-Sections
- April 4, 2006 Meeting #9: Proposed Alignment/Alternatives Evaluation Matrix
- May 2, 2006 Meeting #10: Evaluation Matrix & Supplemental Considerations
- March 20, 2007 Meeting #11: Safety Data, FIHS Criteria, & Alternatives Analysis
- September 10, 2012 Meeting #12: Project Update and Introduction of Alternative 5

5.3.2 Project Newsletters

A project newsletter and fact sheet were developed and distributed to the Public Workshop participants. The project newsletter and fact sheet described the project need, project characteristics, project status, and the types of issues evaluated during the study, as well as explained what is involved with a PD&E study and the necessary actions to be taken to complete the study. An updated project newsletter and fact sheet were developed and distributed to the Public Hearing participants. The updated newsletter and fact sheet described the project justification, project characteristics, protect status, public hearing process, and issues evaluated; explained what a PD&E study is and what actions are taken to complete the study; and presented the FDOT-recommended alternative.

5.3.3 Project Website

A project website was developed and can be found on the internet at www.kromesouth.com. The website was established to provide the public access to the most current and up-to-date project information. This tool has provided the public with information regarding the project description, project objectives, alternatives, information about the CAC meetings, public workshops, Public Hearing, project photos, newsletters, and contact information. All of the project PD&E documents were also provided on this website at the same time the hard copies were made available to the public. Additionally, it has served as a vehicle for the public to submit their comments directly to the project team.

5.3.4 Public Meetings

5.3.4.1 Public Information Workshop

A Public Information Workshop for this PD&E Study was held on May 31, 2006, from 5:30 to 8:30 pm at the Miami-Dade County John D. Campbell Agricultural Center Auditorium. In addition to the 312 property owners and CAC members who received invitations to this workshop, the federal, state and local agencies were sent letters of invitation requesting their participation. The workshop was also advertised in English and Spanish in the local newspaper, *The Miami Herald/El Nuevo Herald*. As a result, more than 84 people attended the Public Information Workshop.

The purpose of the Public Information Workshop was to introduce the study and explain the objectives of this project to the community along the corridor. Aerial photographs incorporating the proposed alternatives, typical sections and alternatives matrices were displayed at the workshop. In addition, a PowerPoint presentation to introduce project information and details was presented. Each attendee was afforded the opportunity to discuss the project with the study team members and was also given the opportunity to comment and make suggestions during the one-on-one discussions. In addition, each attendee was presented with a comment card to complete. A total of 56 individual comments and one group comment with seven signatures was received subsequent to the meeting, by mail or through e-mail. Comments about the project were generally 79% percent in favor of the roadway widening and 19% against the project. About 2% expressed their desire to gain a better understanding of the impacts. Cumulative percentages are shown in ***Appendix Z***. In addition, public information workshop materials have also been included in ***Appendix Z***.

In summary, the community was able to express their concerns and obtain answers to their questions through the public workshop. The project team used the information gathered from the meetings and workshop to concentrate on pressing issues and to the greatest extent practicable, incorporated this information into the study.

5.3.4.2 Public Hearing

A Public Hearing for this PD&E Study was held on December 11, 2013 from 6:00 p.m. to 8:00 p.m. at the Miami-Dade County John D. Campbell Agricultural Center Auditorium, located at 18710 SW 288th Street, Homestead, Florida 33030. In addition to the 254 property owners and CAC members who received invitations to the Public Hearing, federal, state, and local agencies were sent letters of invitation requesting their participation. The Public Hearing was also advertised in English and Spanish in the local newspaper, *The Miami Herald/El Nuevo Herald*, and a notice of the Public Hearing was published in the Florida Administrative Register (see ***Appendix AA***). All draft project documentation was placed on display for public review at least 21 days in advance of, and ten days after, the Public Hearing date, at the FDOT District Six office (located at 1000 NW 111th Avenue, Miami, FL 33172) and at the Agricultural Center. As a result, 86 people attended the Public Hearing, including five public officials and three CAC members.

The purpose of the Public Hearing was to share information about the proposed improvements and provide an official forum, giving interested persons an opportunity to express their input into the process. The hearing began as an open-house, with a formal presentation, a public comment period, and additional time at the end for one-on-one discussion with FDOT personnel. The presentation introduced the study, explained the need for the project, provided an overview of the alternatives, presented the FDOT-recommended alternative, and detailed the impacts, effects, and benefits of the project. An aerial photograph of the study corridor, detailed aerial photographs overlaid with the recommended alternative, and the study typical sections were displayed at the Public Hearing.

Each attendee was afforded the opportunity to discuss the project with the study team members and was also given the opportunity to comment and make suggestions during the one-on-one discussions and during the official public comment period. A total of 12 individuals read their comments into the record during the Public Hearing. In addition, each attendee was presented with a comment card to complete, if they so chose. Seven individual comments were received at the meeting. An additional 15 comments were received after the hearing, by email, in the mail, through the ETDM website, or via the project website. Comments were generally 41% percent in favor of the project and 9% against the project, with the balance of the comments dealing with specific questions about or suggestions to the project.

A summary of the substantive comments received during the *Draft Environmental Impact Statement* comment period and FDOT's responses are provided in ***Table 5-4***. A copy of the Public Hearing materials is included as ***Appendix AA***. A copy of the Public Hearing transcript is included in ***Appendix BB***. A copy of all correspondence received during the *Draft Environmental Impact Statement* comment period is included in ***Appendix CC***. A matrix summarizing all comments received during the *Draft Environmental Impact Statement* comment period and FDOT's responses to these comments is included in ***Appendix DD***.

After the close of the *Draft Environmental Impact Statement* comment period, an additional six comments were received. Three comments came via the project website and three letters were received in the mail. A summary of the substantive comments received after the close of the *Draft Environmental Impact Statement* comment period and FDOT's responses are provided in ***Table 5-5***. A copy of the late-filed correspondence (beyond the *Draft Environmental Impact Statement* comment period) is included in ***Appendix EE***. A matrix summarizing late-filed comments and FDOT's responses to these comments is included in ***Appendix FF***.

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
The proposed action does not comply with NEPA, Section 4(f) of the Transportation Act, and the ESA.	This project was developed in full consideration of and in full compliance with NEPA, Section 4(f) of the Transportation Act, the ESA, CEQ implementing regulations, and the FDOT PD&E Manual.
The DEIS does not closely examine a range of reasonable alternatives.	As detailed **in Section 2.2.5 on pages 2-17 through 2-21, and Section 2.3.4.1 on pages 2-28 through 2-31 of the FEIS/ROD and Sections 3.2.1, 4.1.9, 8.2, 8.6, and 8.7 of the PER**, a total of four (4) corridors and forty-six (46) typical sections were analyzed as part of the initial alternative analysis for this project, including a no action alternative. The conceptual typical sections included a wide range of reasonable alternatives, including ten (10) two-lane undivided typical sections, eight (8) two-lane divided typical sections, eight (8) three-lane undivided typical sections, four (4) two-lane divided typical sections with passing lanes, fifteen (15) four-lane divided typical sections, and one (1) five-lane undivided typical section. The development of the 46 typical sections was based on established design controls for the various elements of the project such as roadway width, median width, shoulder width, design speed, horizontal alignment, vertical alignment, drainage considerations, and intersecting roads. The selection of the appropriate criteria and standards was influenced by safety features, traffic volumes and composition, levels of service, functional classification, environmental considerations and community issues. From these 46 conceptual alternatives, five were identified for more detailed analysis. A reasonable range of alternatives was considered in the context of the project purpose and need, safety.
The DEIS does not analyze whether any of the three alternate corridors could otherwise address the safety deficiencies in the area without directly impacting the environmental resources along Krome Avenue.	- As stated **in Section 2.2.5 on pages 2-17 through 2-21 of the FEIS/ROD** and further detailed in Section 7 of the PER, all four corridors considered were evaluated based on several factors, including: - Available right-of-way through which an improvement providing acceptable service could be routed. - Cultural features including public and private development. - Natural features which could be impacted by the project. - Preservation of the agricultural character of lands outside the designated urban growth area. - Logical termini giving consideration to directness, length, and service. The rejection of the other three corridors was based on a combination of the factors listed above. As shown **in Table 2-1 on page 2-21 of the FEIS/ROD**, the other three corridors evaluated would have resulted in far greater impacts in terms of corridor discontinuity and intersection development, relocations, and construction and right-of-way costs. None of the other corridors would address the documented safety deficiencies on Krome Avenue.

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
The TSM alternative is dismissed without adequate data; there is no explanation of the meaning of the "safety issues" or "safety ratios" in regards to the TSM alternative.	A summary and explanation of the safety issues and safety ratios for the project corridor, which were used in part to justify the dismissal of the TSM alternative, are provided **in Section 2.3.2 on page 2-23, and Section 1.2.2.1 on pages 1-6 through 1-9 of the FEIS/ROD; and in Section 3.2.1 on pages 3-9 through 3-11, Section 4.1.9 on pages 4-6 through 4-11, and Section 4.1.9.1 on pages 4-11 through 4-14 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
The TSM alternative only considers TSM improvements that were implemented between 2003 and 2007 and does not explain whether additional improvements could further improve safety along the corridor.	The primary purpose and need for the project is safety. The congestion along the project is caused by a lack of through lane capacity and high turning volumes. Non-TSM improvements are necessary to mitigate the existing safety deficiencies, increase capacity to accommodate future travel demand, improve access management, and provide stormwater management. Non-TSM improvements are necessary to mitigate the impacts that the high percentage of trucks and slow moving farm vehicles have on the corridor. **See Section 2.6 on pages 2-54 through 2-56 of the FEIS/ROD.**
FHWA's rejection of Build Alternatives 1 and 2 is flawed. Even though these alternatives only partially satisfy the purpose and need for the project, FHWA must still provide a detailed analysis as to why their limitations outweigh their significant environmental benefits over the preferred alternative.	Build Alternatives 1 and 2 were fully analyzed as part of the NEPA process for this project and have been considered viable throughout the project process. The complete analysis of environmental, physical, and social impacts associated with these two alternatives was fully evaluated against that of the other build and no-build alternatives, as detailed in the FEIS/ROD document. **Table 2-3 on pages 2-50 through 2-53 in the FEIS/ROD** presents a full summary of the evaluation factors (impacts and benefits) of each of the five alternatives, including Build Alternatives 1 and 2. Through the evaluation process, Build Alternatives 1 and 2 were determined to have greater overall impacts and fewer benefits than the preferred alternative.
FHWA so narrowly defines the purpose, need, and objectives of the project that only the preferred alternative would completely satisfy these elements. Therefore, the FHWA must reassess the purpose and need statement and redefine it in such a way that allows for a reasonable range of alternatives to be fully considered.	The commenter confuses the project's purpose with the various factors considered by the agency in evaluating the alternatives in meeting the project's overall purpose, which is safety. The project's purpose is not overly specific so as to limit alternatives; in fact over forty alternatives have been considered throughout the process. Many alternatives met the project's purpose but when compared with other alternatives and considered in the context of the environmental and social impacts, the increased safety needs, the costs, logistics and other factors Alternatives 1 and 2 did not meet the applicant's needs. The purpose and need for this project was screened by numerous federal and state agencies through the ETDM process for this project and no comments were received by agencies other than FHWA.
FHWA has failed to rigorously explore and objectively evaluate all reasonable alternatives. An alternative such as that adopted for the US-1 18-mile stretch project should be considered.	A full range of reasonable alternatives was considered during the NEPA process. The typical section for the US-1 18-mile stretch project was unique and not transferrable to this project as it fails to meet the purpose and need of this Krome South project.
Improvements such as those in the KAAP must now be reconsidered and reanalyzed with new reduced population projections for Miami-Dade County.	The current population projections for Miami-Dade County were fully considered as part of the NEPA analysis for the project, **see Section 3.1.1 on pages 3-1 through 3-3 of the FEIS/ROD**. Population in the project area has increased at a rate higher than the County as a whole. Two alternatives, the original KAAP and a modified version of the KAAP, were considered and dismissed due to their inability to meet the project purpose, **see Table 2-3 on pages 2-50 through 2-53, and Section 2.6 on pages 2-54 through 2-56 of the FEIS/ROD**. The typical section from the KAAP (original or modified) fails to meet the purpose and need of this Krome South project.

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
FHWA unlawfully segments a 37-mile road widening project; NEPA requires that agencies analyze the impacts of all phases of construction as "connected actions" and "cumulative actions."	Although the entire Krome Avenue corridor is being considered for four laning to address safety issues, each segment displays independent utility or significance from the others. As discussed **in Section 2.2.5.6 on pages 2-19 through 2-20 of the FEIS/ROD**, "the project identified also displays independent utility or independent significance. Construction of the project will address documented safety and capacity needs and address the primary project purpose even if no additional transportation improvements in the area are made. The project is usable and a reasonable expenditure even if other safety issues outside the limits of this Krome South project are not addressed. These improvements do not force other improvements on the corridor." Therefore, this project was not evaluated as a "connected action" to any other project. It is reasonable to address the safety issues as resources are available, particularly given the documented safety deficiencies throughout the area. **Section 1.2.2.1 on pages 1-6 through 1-9 of the FEIS/ROD** documents the crash history and safety ratios for the project area. Addressing the safety issues within the project boundary will improve the safety of the corridor and will not "automatically trigger" other actions which may require environmental impact statements within the meaning of 40 C.F.R. §1508.25. The project can proceed independently of any other safety projects along the corridor and the net result will still be an increase in safety along the corridor; it may proceed regardless whether other safety projects along the corridor are undertaken previously or simultaneously and it does not depend on other projects for its justification. Each segment of Krome Avenue under consideration is undergoing federal and state permitting and has been or will be analyzed pursuant to NEPA. Each segment is being cumulatively studied with the others to ensure that all direct, indirect and cumulative impacts which are reasonably foreseeable are being considered. A full analysis of past, present and reasonably foreseeable actions associated with this Krome South project were considered in the cumulative impacts analysis conducted for this project, presented **in Section 4.3.18 on pages 4-76 through 4-86, and Section 2.2.5.6 on pages 2-19 through 2-20 of the FEIS/ROD.**

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
The DEIS fails to consider the indirect, growth inducing impacts of the project; the DEIS fails to adequately analyze the impacts of the four proposed DRIs in the project area.	The indirect effects of the project, including the potential for inducing growth in the area, are discussed **in Section 4.3.17 on pages 4-63 through 4-75 of the FEIS/ROD**. As also discussed in Section 1.2.4,there are only two remaining potential DRI projects in the area (the other two have since been withdrawn). Of the remaining two, one is already under construction and the other has a pre-existing application that would require a UDB modification by the County. The issue of UDB modification is discussed extensively **in Section 4.3.17 on pages 4-69 through 4-72 of the FEIS/ROD**. Neither of these two projects would qualify as "indirect effects" within the meaning of the term as defined in 40 C.F.R. §1508.08. Neither of these projects were "caused by the action"; they pre-date the Krome South PD&E study. They are likewise therefore not "later in time" within the meaning of the term. The potential of the project to induce changes in the pattern of land use, population, density, or growth rate has been discussed extensively **in Section 4.3.17 on pages 4-65 through 4-69 and pages 4-73 through 4-75 of the FEIS/ROD**. Given the significant independent constraints on the ability to alter land use in the project area and the history of protection of the area by Miami-Dade County it is not "reasonably foreseeable" that the pattern will change in response to the project. Miami-Dade County, the local government with land use authority in the project area, has recently (March 2011) completed a periodic, required reevaluation of its CDMP through the EAR process. Their 2010 EAR report has concluded that "it is evident that the County has been successful in directing development inside the UDB consistent with its participation through its comprehensive land use planning." The EAR proposes no changes to those policies limiting UDB expansion. It is reasonable for FDOT to rely upon the local land use authority in its assessment of the efficacy of the CDMP. The project is a safety project and no additional capacity, beyond the demand represented by the existing land uses in the area, is being created.
The DEIS fails to consider the indirect, growth inducing impacts of the project; the DEIS fails to consider the potential for induced traffic from the preferred alternative or any other alternative.	The primary project purpose is safety, not the relief of congestion. **Section 1.2.2.2 on page 1-9 of the FEIS/ROD** recognizes that with the project future projected volumes will not be accommodated at all locations and several signalized intersections and links are expected to operate below acceptable LOS. The potential for area traffic to relocate to Krome Avenue when it is improved has been accounted for in the traffic analyses in the long range transportation model future volumes. The South East Regional Planning Model (version.6.5.2, released in 2012) was used to prepare updated Annual Average Daily Traffic and Directional Design Hourly Volumes for opening year and design year for the project study area. This analysis is presented in a Technical Memorandum **in Appendix A of the PER incorporated by reference into the FEIS/ROD on page 1-1**. The post-project projected volumes assigned by the model take into account distributional changes occasioned by the improvement of Krome Avenue, and by the future condition of the area roadway network. The future projected volumes, discussed **in Section 1.2.2.2 on page 1-9 of the FEIS/ROD, and in Section 6.2 on pages 6-4 through 6-6 of the PER**, include the induced traffic which relocates as a result of the laneage improvements. Because the project is a safety project and because there are significant constraints on land use changes, no additional capacity, beyond what is represented by existing land use, is being designed into the project.

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
The DEIS fails to consider the indirect, growth inducing impacts of the project; the DEIS must discuss the effects of the growth-inducing impacts on the Comprehensive Everglades Restoration Plan.	The project has been and continues to be extensively coordinated with the SFWMD regarding consistency with the Comprehensive Everglades Restoration Plan (**see page 4-79, pages 5-4 through 5-5, and Appendix P of the FEIS/ROD – the April 9, 2004 SFWMD letter, included as part of the state clearinghouse response)**. As discussed in responses above, the project is based on the demand represented by existing land uses. Given the existing constraints, it is not foreseeable that the pattern will change as a result of the project. The 2010 EAR identifies growth in the project area in southwestern Miami-Dade County to be a function of existing land use and zoning and does not propose changes to the existing pattern in the project area.
The proposed project does not comply with Section 4(f) of the Transportation Act – the FHWA's Section 4(f) finding for the Miami-Dade County EEL Owaissa Bauer Pineland Preserve No. 1 parcel is arbitrary and capricious, and the parcel should qualify as a Section 4(f) site under the "Wildlife and Waterfowl Refuge" category.	A Determination of Applicability was prepared for the Owaissa Bauer Pineland Preserve No. 1 parcel and it was determined that the primary function of this site is a "preserve" with several listed plant species. This primary function does not qualify as a Section 4(f) site under the "Wildlife and Waterfowl Refuge" category.
The proposed project violates the Endangered Species Act – the FHWA must conduct Section 7 consultation with the USFWS for this project.	Section 7 consultation with the USFWS was conducted for this project. The USFWS issued a concurrence letter for this project on May 21, 2013, concurring with the FHWA's findings presented in the DEIS. A supplemental memorandum to the ESBA for this project was prepared to analyze potential impacts to the Florida panther, Florida bonneted bat, and Carter's small-flowered flax. The results of the supplemental memorandum have been included into the FEIS/ROD. The USFWS issued a second concurrence letter for this project on April 3, 2014, concurring with the FHWA's findings presented in the supplemental memorandum and included in the FEIS/ROD. Both USFWS concurrence letters are included **in Appendix Q of the FEIS/ROD**.
The proposed project violates the Endangered Species Act – the project is within the range of recorded telemetry points for tagged Florida panthers and the FHWA has not analyzed impacts to this species or conducted Section 7 consultation with the USFWS for this species.	The project corridor is not within the primary, secondary, or dispersal zones for identified Florida panther habitat. The project corridor is dominated by agricultural uses and contains few natural habitats. Of those natural habitats present along the corridor, none provide suitable habitat for the Florida panther. A supplemental memorandum to the ESBA for this project was prepared to analyze potential impacts to the Florida panther. The results of the supplemental memorandum have been included into the FEIS/ROD. The USFWS issued a second concurrence letter for this project on April 3, 2014, concurrring with the FHWA's findings presented in the supplemental memorandum and included in the FEIS/ROD. Both USFWS concurrence letters are included **in Appendix Q of the FEIS/ROD.**
Can right-of-way impacts to the EEL parcel be further minimized.	Extensive avoidance and minimization efforts for the Miami-Dade County's DRER EMRD EEL parcel have already occurred during the course of project development as discussed **in Section 4.3.12.1 on pages 4-42 through 4-55 of the FEIS/ROD**. In addition, close coordination with the EEL staff will continue as the project moves into the design phase. During the design phase, the FDOT will continue to review the proposed design at this location to look for ways to further reduce the required right-of-way width from the EEL parcel, if possible. The concurrence letters for this project from the USFWS are included **in Appendix Q of the FEIS/ROD.**

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Can right-of-way impacts to the EEL parcel be further minimized.	Extensive avoidance and minimization efforts for the Miami-Dade County's DRER EMRD EEL parcel have already occurred during the course of project development as discussed **in Section 4.3.12.1 on pages 4-42 through 4-55 of the FEIS/ROD**. In addition, close coordination with the EEL staff will continue as the project moves into the design phase. During the design phase, the FDOT will continue to review the proposed design at this location to look for ways to further reduce the required right-of-way width from the EEL parcel, if possible. The concurrence letter for this project from the USFWS is included **in Appendix Q of the FEIS/ROD.**
Safety should continue to be a priority to minimize or eliminate danger on this roadway.	Safety is, and will continue to be, the primary purpose and need for this project; **see Section 1.2.2.1 on pages 1-6 through 1-9 of the FEIS/ROD.**
The proposed bicycle pathway is too dangerous and instead a pathway for slow moving vehicles such as tractors intrinsic to the agricultural area should be considered.	The shared use path (bicycle pathway) has been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, which are themselves based on safety for the users, and which are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The shared use path will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel. The shared use path, as currently designed, was presented to, and endorsed by, the CAC for this project; **see Section 5.3.1 on page 5-27 and Appendix Y of the FEIS/ROD** for a discussion on the CAC. Slower moving vehicles (including tractors) that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
Reduce the number of lanes and the speed limit as the road transitions to Homestead.	3. This project has been conceptually designed following FDOT standards and guidelines for a SIS facility. The transition from four lanes down to two lanes will occur south of SW 296th Street, at the entrance to the City of Homestead; **see Sheet 1 and Sheet 2 of the Conceptual Plans in Appendix H of the PER, incorporated by reference into the FEIS/ROD on page 1-1.** The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER.** The existing posted speed limit within the City of Homestead is 30 MPH.
Happy that the current posted speed limit of 45 MPH is being maintained.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Happy that flooding potential and drainage is being addressed.	The proposed project recommends a combination of both swales and French drains throughout the corridor to meet required water quality and quantity standards, as discussed **in Section 4.3.6 on pages 4-32 through 4-34 of the FEIS/ROD.**
Happy that no curbing is proposed that would affect access to properties.	The proposed typical sections do not propose any outside curbing. Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Happy that entire corridor will not having lighting and that it will be limited to intersections.	Lighting is being kept or proposed only at major intersections, consistent with suggestions from the CAC to maintain the character of the area, as documented **in Section 4.1.6.2 on page 4-6, Section 4.3.2 on pages 4-13 through 4-14, Section 5.3.1 on page 5-27, and Appendix Y of the FEIS/ROD.**
Happy that the only landscaping in the medians will be grass.	The median is proposed as grass, only. Potential inclusion of landscaping will be refined during the design phase of the project, as discussed **in Section 4.3.2 on pages 4-13 through 4-14 of the FEIS/ROD.**

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Would like to see new signals at SW 280th St, SW 272nd St, SW 192nd St, and SW 168th St.	A traffic signal warrant analysis must be met before new signalization can be installed at any intersection. Signalization will continue to be evaluated during the design phase of the project, and these intersections will be reviewed for traffic signal warrants.
Suggests moving the Shared Use Path to the east side of the road and including a "slow moving vehicle path" on the west side of the road, which will minimize the impact of dust from tractors and ATVs.	Coordination of with Miami-Dade County Bicycle and Pedestrian Advisory Committee on the location of the shared use path will continue during the design phase of the project. Although a "slow moving vehicle path" was discussed by some participants at CAC meetings, it was not adopted. Over the course of project development, the CAC also considered, and rejected, an equestrian path. The shared use path, as currently designed, was presented to, and endorsed by, the CAC for this project; for a discussion on the CAC, **see Section 5.3.1 on page 5-27 and Appendix Y of the FEIS/ROD.** Slower moving vehicles that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic. The proposed typical sections are made up of paved roadway and grassed swales which are not anticipated to increase dust in the area.
Suggests that left turn lane storage lengths be extra long for additional storage.	Left-turn lane taper and storage lengths have been conceptually designed based on FDOT Design Standard Index 301. These lengths are based on traffic volumes, and will be refined during the design phase of the project, if longer lengths are indicated.
Suggests flatter cross slope grades extending out from the shoulders.	The cross slope grades of the shoulders have been conceptually designed to meet FDOT roadway design and drainage standards and guidelines. The cross slopes are designed to provide swales for drainage; property access from Krome Avenue (across the proposed swales) will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Suggests that both a wider median and the elimination of bicycle path are required to allow large trucks to make U-turns.	The project as conceptually designed allows for large wheel-based trucks to safely make U-turns at both the full median openings and at signalized intersections.
Suggests placing a partial barrier in the medians.	The proposed project typical sections, with grassed median separation, comply with the FDOT Plans Preparation Manual (PPM), Volume 1, Chapter 2, and will enhance the safety of the corridor; for a discussion on the typical sections, **see Section 2.3.4.1 on pages 2-28 through 2-31 of the FEIS/ROD.**
Suggests consideration of making an economic impact study on tolling Krome Avenue, north of the study limits of this project.	This project extends from SW 296th Street to SW 136th Street. No tolling has been considered along the study segment of Krome Avenue as part of this project.
Requests traffic signalization at SW 272nd Street, with left-turn arrow.	A traffic signal warrant analysis must be met before new signalization can be installed at any intersection. Signalization will continue to be evaluated during the design phase of the project, and this intersection will be reviewed for traffic signal warrants. A left-turn lane in both directions has been conceptually designed at this intersection.
Requests that the existing posted speed limit 45 MPH be maintained.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on pages 2-28 through 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1**.
Suggests placing a three foot wall for the median.	The proposed project typical sections, with grassed median separation, comply with the FDOT Plans Preparation Manual (PPM), Volume 1, Chapter 2, and will enhance the safety of the corridor; for a discussion on the typical sections, **see Section 2.3.4.1 on pages 2-28 through 2-31 of the FEIS/ROD.**
Requests school speed limit signs to slow down traffic at the Redland Christian Academy.	Appropriate Manual on Uniform Traffic Control Devices (MUTCD) signs for school crossings and approaches will be included in the design phase of this safety project.

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Suggests acceleration lanes or signs are needed for merging trucks.	The conceptually designed typical sections for the project provide for two lanes in each direction which will safely accommodate entering traffic. Slower moving vehicles that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
What are the project benefits of changing from two to four lanes?	Changing from two lanes to four lanes will improve safety and capacity along the corridor; for a discussion on project benefits, **see Section 1.2 on page 1-4, Section 1.2.2.1 on pages 1-6 through 1-9, and Section 2.5 on pages 2-45 through 2-53 of the FEIS/ROD.**
Traffic increases dust.	The proposed typical sections are made up of paved roadway, paved shared use path, and grassed swales which are not anticipated to increase dirt or dust in the area.
Why not extend project limit to US 41?	1. This project extends from SW 296th Street to SW 136th Street. There is another separate project to the north from SW 136th Street to US 27/Okeechobee Road that also proposes a four lane divided roadway typical section; **see Section 4.3.18 on page 4-79 of the FEIS/ROD**.
Consider extending the Turnpike.	2.Improvements to the Turnpike, or parallel facilities, will not meet the purpose and need for this project; **see Section 1.2 on page 1-4, and Section 2.2 on pages 2-4 through 2-7 of the FEIS/ROD.**
Confused about the flood problems on the corridor.	The project is not expected to cause changes in flood stage and flood limits. Any minor changes, if any, resulting from this project will not result in any adverse impacts on the natural and beneficial floodplain values or any changes in flood risk or damage. Details are provided **in Section 4.3.10 on pages 4-35 through 4-36 of the FEIS/ROD.**
Confused about West Indian manatee on the corridor.	For this project, the USFWS has concurred with the FDOT- and FHWA-determination of "may affect, but not likely to adversely affect" for the West Indian manatee. USFWS concurrence is discussed on **in Section 4.3.12 on pages 4-38 through 4-39 and on page 4-42 of the FEIS/ROD** and the concurrence letters are included **in Appendix Q of the FEIS/ROD.**
Why will it cost $159 million to build this road?	The preliminary cost estimate for this project ($158,804,525) includes preliminary engineering design costs, right-of-way acquisition costs, construction costs, and construction engineering inspection costs. A summary is provided **in Section 2.5 on pages 2-47 through 2-49 of the FEIS/ROD** and details are provided **in Section 9.6 on page 9-5, in Section 9.7 on page 9-6, and in Appendix I of the PER, incorporated by reference into the FEIS/ROD on page 1-1**.
Concerned how customers will access property.	Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Why do you need a bicycle path?	The shared use path (bicycle path) has been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and is consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The shared use path will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Concerned that their input has not been asked for.	A Public Involvement Program (PIP) was developed at the beginning of the project which outlined opportunities for public participation. Property owners immediately adjacent to this project were notified a by mail a number of times, to solicit input and participation into this project development process. A CAC was formed for this project and met 12 times over the ten-year course of the project. Additionally, 74 other meetings were held with project stakeholders. A Public Workshop was held in 2006 and a Public Hearing was held in 2013. Details of the community outreach for this project are provided **in Section 5.3 on pages 5-23 through 5-43, and in Appendix U, Appendix V, Appendix Y, Appendix Z, Appendix AA, Appendix BB, Appendix CC, and Appendix DD, Appendix EE, and Appendix FF of the FEIS/ROD.**
Concerned about the impact to agricultural industry in area.	The U.S. Department of Agriculture preliminarily evaluated the farmland conversion impacts for the project, and found minimal impacts to farmlands, with no additional evaluation necessary, **see Section 4.3.14 on page 4-60 and Appendix T of the FEIS/ROD**. In addition, property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Happy there are bicycle lanes and a bicycle path.	The proposed typical sections for the project include provisions for bicycles. The bicycle lanes and bicycle path have been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The bicycle lanes and bicycle path will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.
Suggests raising the bridge at the Mowry Canal so bicycles can cross Krome Avenue underneath it.	At the C-103 Mowry Canal, a new bridge will be constructed which will allow bicycles to cross the canal, either on the bicycle lanes or on the shared use path, providing continuity of bicycle travel along Krome Avenue. There are no existing or proposed provisions for bicycles to cross Krome Avenue at this location. In the future, the County may propose other considerations for bicycles as part of its bicycle plans: the SFWMD, the owner of the unimproved canal maintenance access road, has no plans at this time for development of the canal road for trail use; the Miami-Dade County 2009 Master Plan Vision Map notes the canal road as a "potential future greenway".
Suggests adding a second 12-foot diameter parallel culvert next to the canal culvert at the Princeton Canal so bicycles can cross Krome Avenue underneath the road.	At the C-102 Princeton Canal, the FDOT is providing continuity of bicycle travel along Krome Avenue with bicycle lanes and a shared use path. There are no existing or proposed provisions for bicycles to cross Krome Avenue at this location. In the future, the County may propose other considerations for bicycles as part of its bicycle plans: the SFWMD, the owner of the unimproved canal maintenance access road, has no plans at this time for development of the canal road for trail use; the Miami-Dade County 2009 Master Plan Vision Map notes the canal road as a "potential future greenway".
Supportive of project, but concerned about a 65 MPH speed limit.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Concerned about bicycles separated from traffic by only a painted line.	The bicycle lanes have been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. Bicycles will have a choice of bicycle lanes or the shared use path, which will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Suggests there is a need for more left turn openings to provide access to property.	As many proposed median openings with left turn bays for east and west traffic from Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** The access management standards in Rule Chapter 14-97 of the FAC control access and reduce conflict points, enhancing safety along the project.
Concerned about the need to make U-turns.	The project as conceptually designed allows for vehicles to safely make U-turns at both the proposed median openings and the signalized intersections.
Suggests that the construction phase be segmented into shorter parts, each with shorter durations.	The project has been divided into three design projects. Construction limits may be further refined during the design phase depending on funding availability and construction duration estimates.
Concerned about agricultural business, and other business, impacts during construction.	Business impacts during construction will be minimized to the maximum extent possible. BMPs will be used during the maintenance of traffic. Per the BMPs, the FDOT will not completely close a business access during construction.
Concerned about grade of cross slopes in the swales affecting dirt road access to nursery properties.	As part of this safety improvement project, the FDOT will add drainage improvements, such as swales, along the corridor. Reasonable property access from abutting agricultural properties to Krome Avenue will be maintained. Coordination with the FDOT driveway permits department may be required. Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Concerned about the need to analyze environmental impacts of the roadway widening and subsequent increased traffic on wildlife and habitat.	All of the potential direct, indirect, and cumulative impacts of the roadway improvement project were evaluated and analyzed as part of the PD&E/NEPA process for this project. A WER, ESBA, CSER, and Air Quality Technical Memorandum were prepared as part of the project documentation, were available for review during the public comment period, and are incorporated by reference into the FEIS/ROD.
Concerned about environmental impacts from roadway runoff.	A Water Quality Impact Evaluation was conducted as part of this project and **is provided in Appendix N of the FEIS/ROD**. The proposed drainage system for the project will be self-contained and able to retain the contributing runoff with no offsite discharge. The project will use BMPs to minimize impacts on surface water quality. Potential impacts are limited to erosion/turbidity during the construction phase. Overall, water quality in the project area will be improved with the new stormwater management system.
Concerned about environmental impacts to water quality.	All necessary precautions and BMPs pertaining to construction will be followed to prevent adverse impacts to the underlying sole source aquifer (Biscayne Aquifer). The USEPA reviewed the proposed project and concluded that the project will have no adverse impacts to the sole source aquifer if all necessary BMPs are employed. A copy of the USEPA's letter was included **in Appendix O of the FEIS/ROD.**
Concerned that the project will limit access to business property.	As many proposed median openings with left turn bays for east and west traffic from Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Concerned that large trucks cannot make U-turns.	The project as conceptually designed allows for large wheel-based trucks to safely make U-turns at both the full median openings and at signalized intersections.

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Concerned about bicycles traveling on the paved shoulder.	The bicycle lanes have been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. Bicycles will have a choice of bicycle lanes or the shared use path, which will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.
Concerned about raising speed limit from 45 MPH.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Wants clarification on the transition from four lanes to two lanes in Homestead.	Within the limits of the City of Homestead, the proposed four lane typical section transitions back to two lanes over six city blocks, ending just north of NW 17th Street; **see Sheet 1 and Sheet 2 of the Conceptual Plans in Appendix H of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Wants to know if there will be a lot of lighting from SW 296th Street to SW 176th Street.	Lighting is being kept or proposed only at major intersections, consistent with suggestions from the CAC to maintain the character of the area, as documented **in Section 4.1.6.2 on page 4-6, Section 4.3.2 on pages 4-13 through 4-14, in Section 5.3.1 on page 5-27, and Appendix Y of the FEIS/ROD.**
Does not understand why there is a bicycle path.	The shared use path (bicycle path) has been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, and is consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The shared use path will enhance safety for all corridor users along the project. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel.
Concerned about 65 MPH speed limit.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Concerned about access to property.	As many proposed median openings from Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Concerned that input from farmers who live there has not been asked for.	A Public Involvement Program (PIP) was developed at the beginning of the project which outlined opportunities for public participation. Property owners immediately adjacent to this project were notified a by mail a number of times, to solicit input and participation into this project development process. A CAC was formed for this project and met 12 times over the ten-year course of the project; farmers' interests were represented in the CAC. Additionally, 74 other meetings were held with project stakeholders. A Public Workshop was held in 2006 and a Public Hearing was held in 2013. Details of the community outreach for this project are provided **in Section 5.3 on pages 5-23 through 5-43, and in Appendix U, Appendix V, Appendix Y, Appendix Z, Appendix AA, Appendix BB, Appendix CC, and Appendix DD, Appendix EE, and Appendix FF of the FEIS/ROD.**

Table 5-4 – Summary of Substantive Comments from the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Concerned that they will have to relocate.	The preliminary design plans for the project do not require any right-of-way taking from the residential parcel at 17101 SW 177th Avenue, **see Sheet 32 of the Conceptual Plans in Appendix H of the PER, incorporated by reference into the FEIS/ROD on page 1-1.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Does not understand the purpose of doing the project.	Safety is, and will continue to be, the primary purpose and need for this project; **see Section 1.2.2.1 on pages 1-6 through 1-9 of the FEIS/ROD.**
Concerned how people will pick up kids from Redland's Christian Academy.	With the proposed project, school children will continue to be picked up and dropped off as they are today, from the driveways on the school property.
Concerned about access to property with a median.	As many proposed median openings from Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Concerned about how project will impact rural / agricultural area.	The U.S. Department of Agriculture preliminarily evaluated the farmland conversion impacts for the project, and found minimal impacts to farmlands, with no additional evaluation necessary, **see Section 4.3.14 on page 4-60 and Appendix T of the FEIS/ROD**. In addition, property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. It is foreseeable that existing uses will continue.
Concerned there are no acceleration lanes for semi-trucks.	The conceptually designed typical sections for the project provide for two lanes in each direction which will safely accommodate entering traffic. Slower moving vehicles that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
Concerned about how people will drop off children at Redlands Christian Academy.	With the proposed project, school children will continue to be picked up and dropped off as they are today, from the driveways on the school property.
Wants school speed limit signs.	Appropriate Manual on Uniform Traffic Control Devices (MUTCD) signs for school crossings and approaches will be included in the design phase of this safety project.
Concerned about raising speed limit to 65 MPH.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**

Table 5-5 – Summary of Substantive Comments Received After the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Concerned that the project will limit access to property.	As many proposed median openings along Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Suggests flattening the slope of the shoulders to facilitate farm access.	The cross slope grades of the shoulders have been conceptually designed to meet FDOT roadway design and drainage standards and guidelines. The cross slopes are designed to provide swales for drainage; property access from Krome Avenue (across the proposed swales) will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Suggests including a "slow moving vehicle path."	Although a "slow moving vehicle path" was discussed by some participants at CAC meetings, it was not adopted; **see Section 5.3.1 on page 5-27 of the FEIS/ROD for a discussion on the CAC**. Slower moving vehicles (including tractors) that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
Wants only limited lighting at intersections.	Lighting is being kept or proposed only at major intersections, consistent with suggestions from the CAC to maintain the character of the area, as documented **in Section 4.1.6.2 on page 4-6, Section 4.3.2 on pages 4-13 through 4-14, Section 5.3.1 on page 5-27, and Appendix Y of the FEIS/ROD.**
Wants only limited landscaping for the project.	The median is proposed as grass, only. Potential inclusion of landscaping will be refined during the design phase of the project, as discussed **in Section 4.3.2 on pages 4-13 through 4-14 of the FEIS/ROD.**
Wants to ensure that hazardous waste and contamination be properly managed during construction.	The project will comply with federal, state, and local regulations and guidelines concerning hazardous waste and contamination during construction. In addition, the contractor shall follow applicable FDOT specifications for areas of unforeseen contamination. These specifications require that in the event any hazardous material or suspected contamination is encountered during construction or if any spills caused by construction related materials should occur the contractor shall be instructed to stop work immediately and notify the FDOT Construction Project Manager. The Project Manager will notify the District Contamination Impact Coordinator (District Six Intermodal Systems Management Office) who will in turn coordinate with appropriate environmental regulatory agencies for assistance and resolution of the contaminated areas. For details, **see Section 4.3.8 on page 4-35 of the FEIS/ROD**.
Encourages continuing to try to reduce the width of the right-of-way footprint in future project phases, in an effort to further minimize potential impacts to community cohesion and relocations.	During the design phase, the FDOT will continue to review the proposed design to look for ways to further reduce the required right-of-way width, if possible.
Wants clarification on property access.	As many proposed median openings along Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.

Table 5-5 – Summary of Substantive Comments Received After the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Wants clarification on the frontage roads discussed in the proposed Binding Access Control Plan.	The service (frontage) road concept proposed in the Binding Access Control Plan is an option that Miami-Dade County may use to maintain the operational capacity of Krome Avenue in connection with development approvals in the future. The service road concept is not part of the improvements that will be constructed by the FDOT for this project. The Binding Access Control Plan is discussed **in Section 1.2.2.3 on page 1-11, Section 2.3.4.1 on page 2-30, Section 4.3.17 on page 4-74, and Section 5.2.2.2 on page 5-6 of the FEIS/ROD and in Section 3.2.3 on page 3-13, Section 4.1.10 on page 4-16, Section 8.4.1 on page 8-9, and Section 9.23 on pages 9-42 to 9-43 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Wants to prevent impacts to viable agricultural businesses in the area.	The U.S. Department of Agriculture preliminarily evaluated the farmland conversion impacts for the project, and found minimal impacts to farmlands, with no additional evaluation necessary, **see Section 4.3.14 on page 4-60 and Appendix T of the FEIS/ROD**. In addition, property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Asks if farm vehicles would be permitted to utilize the shared use path.	The shared use path has been conceptually designed according to FDOT standards and guidelines in the Plans Preparation Manual (PPM), Volume 1, Chapter 8, which are consistent with Section 335.065 of the Florida Statutes, which requires provisions for non-vehicular travelers along state roadways unless there is a compelling reason not to include them. The project bicycle provisions are supported by Miami-Dade County, and are consistent with state and federal policies for safe multi-modal travel. The shared use path is provision for non-vehicular travelers along the state roadway. Slower moving vehicles (including tractors and farm vehicles) that may use the corridor will be able to safely use the outside travel lane in each direction of the four-lane facility without interrupting through traffic.
Encourages the FDOT to work with the relevant agency to address access needs to canals.	Both of the canals (the C-102 and the C-103) that cross this project are under the jurisdiction of the SFWMD. Coordination has been and will continue to be conducted with the SFWMD as this project advances to the design phase. One of the proposed commitments for this project is that the FDOT will reduce down to/only provide 1:10 longitudinal profiles in the roadside swales parallel to Krome Avenue, in the vicinity of the C-102 and the C-103 canals, to facilitate SFWMD maintenance vehicle access to the canals; **see Section 6.1 on page 6-1 of the FEIS/ROD.**
Encourages the FDOT to work with the relevant agency to address access needs to environmentally-sensitive lands.	There is one ecologically important parcel of land adjacent to the Krome Avenue corridor, the 9.39-acre Owaissa Bauer Pineland Preserve Addition No. 1 property, located south of SW 264th Street along the east side of Krome Avenue. This property is owned by the state of Florida (acquired with Conservation and Recreation Lands Program funds) and is managed by the Miami-Dade County DRER EMRD EEL Program. One of the proposed commitments for this project is that the FDOT will apply the Owaissa Bauer Pineland Preserve Addition Number 1 parcel "Minimization Treatment" to the final design of the selected alternative, which includes the installation of a guardrail to be placed approximately 5.5 feet inside the proposed project right-of-way line. Extensive avoidance and minimization efforts for the EEL parcel have already occurred during the course of project development as discussed **in Section 4.3.12.1 on pages 4-42 through 4-55 of the FEIS/ROD**. In addition, close coordination with the EEL staff will continue as the project moves into the design phase.
Requests a maximum speed of 45 MPH.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**

Table 5-5 – Summary of Substantive Comments Received After the Draft Environmental Impact Statement Comment Period and FDOT Responses

Comment	Response
Wants clarification on property access.	As many proposed median openings along Krome Avenue have been provided as current design standards and engineering judgment permit, **see Section 1.2.2.3 on page 1-11 of the FEIS/ROD.** Property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC. The access management standards control access and reduce conflict points, enhancing safety along the project.
Wants clarification on the frontage roads discussed in the proposed Binding Access Control Plan.	The service (frontage) road concept proposed in the Binding Access Control Plan is an option that Miami-Dade County may use to maintain the operational capacity of Krome Avenue in connection with development approvals in the future. The service road concept is not part of the improvements that will be constructed by the FDOT for this project. The Binding Access Control Plan is discussed **in Section 1.2.2.3 on page 1-11, Section 2.3.4.1 on page 2-30, Section 4.3.17 on page 4-74, and Section 5.2.2.2 on page 5-6 of the FEIS/ROD and in Section 3.2.3 on page 3-13, Section 4.1.10 on page 4-16, Section 8.4.1 on page 8-9, and Section 9.23 on pages 9-42 to 9-43 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**
Wants to prevent impacts to viable agricultural businesses in the area.	The U.S. Department of Agriculture preliminarily evaluated the farmland conversion impacts for the project, and found minimal impacts to farmlands, with no additional evaluation necessary, **see Section 4.3.14 on page 4-60 and Appendix T of the FEIS/ROD**. In addition, property access from Krome Avenue will be maintained, consistent with Rule Chapters 14-96 and 14-97 of the FAC.
Requests a maximum speed of 45 MPH.	The proposed project recommends that the existing posted speed limit of 45 MPH be maintained when the project opens after construction, **see Section 2.3.4.1 on page 2-31 of the FEIS/ROD, and see Section 5.2.1 on page 5-3 of the PER, incorporated by reference into the FEIS/ROD on page 1-1.**

6.0 COMMITMENTS AND RECOMMENDATIONS

6.1 COMMITMENTS

In order to minimize the impacts of this project on the natural and human environment, the FDOT is committed to the following measures. These commitments will be tracked throughout the final design, permitting, and construction phases of the project using the FDOT Project Commitments Record (FDOT Form No. 700-011-35).

Engineering

1. The FDOT will reduce down to/only provide 1:10 longitudinal profiles in the roadside swales parallel to Krome Avenue, in the vicinity of the C-102 and the C-103 canals, to facilitate SFWMD maintenance vehicle access to the canals.
2. The FDOT will provide vertical headwalls with pedestrian/bicycle railings at the culvert crossing, in order to avoid impacting the S-194 structure on the C-103 canal.
3. As the FDOT advances its design, it will continue to review medians consistent with its design and safety standards, as well as the Plans Preparation Manual and consider the need for truck turns to support agricultural operations.
4. As the FDOT advances its design, it will continue agency coordination and design for high water elevation with reliance on design and safety standards in the FDOT Drainage Manual and regional emergency management plans as communicated by local governments during the PD&E and Design processes and consider potential changes in the watershed from other projects, climate change, and general urbanization.

Community Services

5. The FDOT is committed to continued coordination with hospitals, libraries, churches, and other community organizations in the project area through the development, final design, and construction phases of the project.
6. The FDOT is committed to initiating coordination with Miami-Dade County Public Schools during the design phase of the project to discuss the maintenance of traffic and other measures to ensure the safety of student pedestrians and to help minimize disruptions to school operations, including bus transportation.

Wildlife and Habitat

7. The FWC's *Standard Manatee Conditions for In-Water Work* will be employed during all in-water construction activities associated with this project.
8. The FDOT will incorporate the most current protection guidelines for the eastern indigo snake, currently entitled *Standard Protection Protocols for the Eastern Indigo Snake*, into the final project design and will require that the construction contractor abide strictly to the guidelines during construction.
9. The FDOT is committed to coordinating with the USFWS regarding the most current survey protocols for the Florida bonneted bat and re-surveying all of the royal palms

along the corridor within the footprint of Alternative 5 (preferred alternative) prior to construction activities for any signs of the Florida bonneted bat. If any signs of the Florida bonneted bat are observed, the FDOT is committed to reinitiating coordination with the USFWS and consultation, if necessary.

Owaissa Bauer Pineland Preserve Addition No. 1

10. The FDOT will apply the Owaissa Bauer "Minimization Treatment" to the final design of the selected alternative, including the installation of a guardrail to be placed approximately 5.5 feet inside the proposed project right-of-way line.
11. Notwithstanding the avoidance of listed and candidate species and roadway minimization measures that have already been implemented, the FDOT will consider additional minimization measures at the Owaissa Bauer property during design, if determined feasible and consistent with overall project purpose and safety.
12. During the final design phase of the project, in order to approve a proposed easement interest in the land within the Owaissa Bauer Pineland Preserve Addition No. 1 parcel, the FDEP requires submittal of the "Upland Easement Application" to the State of Florida Board of Trustees of the Internal Improvement Trust Fund.
13. To minimize the potential for adverse impacts to listed plant species at the Owaissa Bauer Pineland Preserve Addition No. 1 site along the project corridor, the FDOT will assess the viability of relocating listed plant species to a suitable area outside of the planned limits of construction, such as other graminoid-dominated areas of the site where these species are known to currently occur. The relocations, if determined to be viable, will be coordinated with the USFWS and will be conducted just prior to commencement of roadway construction activities.
14. The FDOT is committed to re-surveying during design for the Bartram's scrub-hairstreak and Florida leafwing butterflies and their host plant (pineland croton) at the Owaissa Bauer Pineland Preserve Addition No. 1 site along the project corridor. If any signs of the butterflies or their host plant are observed, the FDOT is committed to reinitiating coordination with the USFWS and consultation, if necessary.
15. The FDOT's contractor will install temporary construction fencing at the limits of construction along the Owaissa Bauer Pineland Preserve Addition No. 1 for plant protection purposes and maintain the temporary construction fencing until completion of construction at this location; no impacts will occur to vegetated areas outside of the limits of construction in accordance with the *FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property).*
16. Sod will not be planted in the FDOT right-of-way along the Owaissa Bauer Pineland Preserve Addition No. 1 site to avoid future encroachment of any landscaping grass into the adjacent natural areas.
17. Florida tree snails were observed on vegetation at the Owaissa Bauer Pineland Preserve Addition No. 1. Prior to vegetation removal or construction activities, FDOT will conduct a biological survey within the limits of the proposed project. Individual snails observed on the trees to be impacted will be collected and relocated a safe distance outside of the areas of proposed impact per FWC guidelines (Shaw, 2006, Tree Snail Relocation Protocol).

Florida Audubon Society Property

18. Due to its use for bird watching (as designated by the private owner), the Florida Audubon Society property could be considered especially sensitive to construction noise and/or vibration; therefore, a reassessment of the project corridor for construction-related noise/vibration impacts to such sites will be performed during design in an attempt to minimize impacts to such sites.
19. To minimize the potential for adverse impacts to listed plant species at the Florida Audubon Society property along the project corridor, the FDOT will assess the viability of relocating listed plant species to a suitable area outside of the planned limits of construction. The relocations, if determined to be viable, will be conducted just prior to commencement of roadway construction activities.
20. The FDOT's contractor will install temporary construction fencing at the limits of construction along the Florida Audubon Society property for plant protection purposes and maintain the temporary construction fencing until completion of construction at this location; no impacts will occur to vegetated areas outside of the limits of construction in accordance with the *FDOT Standard Specifications for Road and Bridge Construction (Section 7-11.1, Preservation of Property).*
21. Sod will not be planted in the FDOT right-of-way along the Florida Audubon Society property to avoid future encroachment of any landscaping grass into the adjacent natural areas.

Noise

22. Coordination between the FDOT and the owners of any noise or vibration sensitive sites identified during design will occur, and the contractor will adhere to the latest edition of the *FDOT Standard Specifications for Road and Bridge Construction*.

6.2 RECOMMENDATIONS

As a result of the Public Hearing, public input, environmental studies, interagency coordination, and a detailed comparative analysis of viable alternatives, the alternative recommended for Location Design Concept Acceptance is Alternative 5 (four-lane divided) with the "Minimization Treatment" applied at the location of the EEL Owaissa Bauer Pineland Preserve Addition No. 1 site. The preferred alternative will widen SR 997/Krome Avenue/SW 177th Avenue from two lanes to four lanes for a distance of approximately ten miles, from SW 296th Street to SW 136th Street, and will replace the existing bridge over the C-103/Mowry Canal (Bridge No. 870161). The preferred alternative will meet the purpose and needs of the project and both alleviate the safety deficiencies and add the needed capacity to this roadway in Miami-Dade County. The preferred alternative is the FDOT-recommended alternative (Alternative 5 with minimization treatment) which was presented at the project Public Hearing, held on December 11, 2013.

The preferred alternative will consist of two distinct typical sections and a minimization treatment: a suburban section from SW 296th Street to 272nd Street (see ***Figure 2-13a*** in ***Section 2.3.4.2***), a rural section from SW 272nd Street to SW 136th Street (see ***Figure 2-13b*** in ***Section 2.3.4.2***), and a minimization treatment at the Miami-Dade County EEL Owaissa Bauer Pineland Preserve Addition No. 1 site (see ***Figure 2-15*** in ***Section 2.6***).

The suburban section has a design speed of 55 MPH; the rural section has a design speed of 65 MPH. The suburban section requires 148 feet of right-of-way. The typical section includes four 12-foot travel lanes, two in each direction, separated by a 22-foot raised grass median with curb and gutter. A four-foot inside shoulder and eight-foot outside shoulder is provided in each direction. Roadside swales range from ten feet in the southbound direction to 20 feet in the northbound direction. A 35-foot Border Width is provided from the outside edge of travel lane. A ten-foot two-way shared use path is included parallel to the southbound travel lanes.

The rural section requires 166 feet of right-of-way. The typical section includes four 12-foot travel lanes, two in each direction, separated by a 40-foot depressed grass median with inside shoulders. An eight-foot inside shoulder and a 12-foot outside shoulder is provided in each direction. Roadside swales range from ten feet in the southbound direction to 22 feet in the northbound direction. A 27-foot Border Width is provided from the outside shoulder point; a Design Variation for Border Width will be required. A ten-foot two-way shared use path is included parallel to the southbound travel lanes.

Additional engineering analysis of the Preferred Alternative 5 resulted in a "Minimization Treatment" that further reduces the potential impacts to the EEL Owaissa Bauer Pineland Preserve Addition No. 1 site to the greatest extent practicable while maintaining safe engineering practices (i.e., roadway geometry, etc.). For the approximately 750 feet in the immediate area of the EEL parcel, the recommended rural section is slightly modified to include the minimization treatment, as follows:

The rural typical section with minimization treatment requires 148 feet of right-of-way. The typical section includes four 12-foot travel lanes, two in each direction, separated by a 40-foot depressed grass median with inside shoulders. An eight-foot inside shoulder is provided in each direction. A 12-foot outside shoulder is provided in the southbound direction and a 15.5-foot outside shoulder is provided in the northbound direction. The roadside swale in the southbound direction is ten feet. A shoulder gutter and guardrail is provided in the northbound direction, in the immediate area of the EEL parcel. A 27-foot Border Width, in the southbound direction, and a 5.5-foot Border Width, in the northbound direction, is provided from the outside shoulder point; a Design Variation for Border Width will be required. A ten-foot two-way shared use path is included parallel to the southbound travel lanes.

7.0 LIST OF PREPARERS

Table 7-1 – Final Environmental Impact Statement List of Preparers

Personnel	Experience
Federal Highway Administration	
Gregory E. Williams, P.E. District Transportation Engineer	B.S. in Civil Engineering, with nine years of experience with the FDOT and seven years of experience with Federal Highway Administration.
George Hadley Environmental Program Coordinator	B.S in Civil Engineering, with 26 years of experience involving environmental policy development and implementation, and NEPA documentation preparation and review.
Cathy Kendall, AICP Interim Environmental Coordinator FHWA-FL, PR and VI	M.S. in Urban & Regional Planning, B.S. in Economics; 17 years of transportation and land use planning at the local, state and federal level, and seven years of federal NEPA experience.
Florida Department of Transportation	
Aileen Boucle, AICP District Intermodal Systems Development Manager	M.S. in Environmental & Urban Systems, BBA in Finance, with 13 years of experience in Transportation Planning.
Barbara B. Culhane, AICP District Cultural Resources Coordinator/ Environmental Supervisor	B.S. Degree in Zoology and M.S. Degree in the Biological Science with 25 years experience in PD&E studies, NEPA documentation and environmental permitting.
Vilma Croft, P.E. Senior Project Manager	B.S in Civil Engineering, with 28 years of experience in transportation related projects including 14 years in PD&E studies.
Catherine Owen Environmental Manager	B.S. and M.S. degrees in Biology, with 17 years of experience in PD&E studies, and NEPA documentation.
Jorge Gomez, P.E. Project Manager	B.S. in Civil Engineering and M.S. in Engineering Management with six years of experience in PD&E studies and NEPA documentation.
Jeannine Gaslonde, E.I. Project Manager	B.S. in Civil Engineering with five years in PD&E studies and NEPA documentation.
Dat Huynh, P.E. District Project Development Engineer	B.S. in Civil Engineering with 18 years of experience in Construction, PD&E Studies and Design.
Susanne Travis Senior Environmental Scientist	B.S. and M.S. degrees in Forestry; M.L.A. degree in Landscape Architecture with ten years of experience in PD&E studies and NEPA documentation, and five years of experience in environmental permitting.
URS Corporation	
Julio Bouclé, P.E. Project Manager	M.S. in Civil Engineering, B.S in Civil Engineering, with 26 years of experience in Transportation Engineering and Planning, PD&E studies, and NEPA documentation.
Ana Sandoval, P.E Senior Engineer	B.S in Civil Engineering with 15 years of experience in traffic engineering and PD&E Studies.
Maria Teresita Vilches-Landa, P.E. Senior Engineer	M.S. in Environmental Engineering, B.S in Civil Engineering, with 15 years of experience in planning, PD&E studies, and NEPA documentation.
Jenn L. King, P.E Senior Engineer	B.S in Civil Engineering with 15 years of experience in drainage and roadway design, traffic engineering and PD&E Studies

Table 7-1 – Final Environmental Impact Statement List of Preparers

Personnel	Experience
Juan C. Garcia, P.E. Drainage Engineer	B.S. in Civil Engineering with 24 years of experience in stormwater management design.
Rajendran Shanmugan, P.E. Transportation Engineer	M.S. in Civil/Transportation Engineering with 28 years of experience in transportation engineering, planning, traffic analysis, and documentation.
Domingo Noriega, P.E. Transportation Engineer	B.S. in Civil Engineering with 25 years of experience in transportation/traffic engineering.
John F. Arrieta, P.E. Traffic Engineer/Transportation Planner	M.E. in Civil/Transportation Engineering, B.S. in Civil Engineering with 16 years of experience in traffic engineering and transportation planning.
Martin A. Peate, AICP Senior Transportation Planner	M.S.P. in Environmental Planning and Resource Management, B.S. in Political Science with 19 years of experience in corridor planning and USEPA documentation for roadways, transit and port facilities.
Olguita Sabagh-Karam Project Engineer	M.S. & B.S. in Industrial Engineering with six years of experience in Public Involvement and Transportation Planning.
Vickie A. Scott, AICP Senior Planner	B.S. in Geography with 29 years of experience in environmental analysis and document preparation, including several NEPA Classes of Action.
Keith Stannard Director of Ecological Program	B.S. in Biological Sciences with 20 years of experience in conducting environmental analyses, evaluating ecological processes, and technical document preparation, including various NEPA Classes of Action and other ancillary documents.
Michael Breiner Assistant Director of Ecological Program	A.A.S. in Fish & Wildlife Management with 30 years of experience in wetlands ecology and threatened/endangered species studies, including preparation of NEPA ancillary documents.
Valerie Chartier Senior NEPA Specialist/Environmental Scientist	M.B.A. in Environmental Management and B.S. in Environmental Science with ten years of experience in environmental analysis and document preparation, including various NEPA documents.
Damon Quesenberry Environmental Scientist	B.S. in Environmental Management with eight years of experience in environmental analysis, GIS mapping and document preparation, including various NEPA ancillary documents.
Babu Madabhushi Project Engineer/Environmental Specialist	Ph.D. in Hazardous Waste Management, M.S. in Wastewater Treatment, B.S. in Civil Engineering with ten years of experience in hazardous/solid waste assessments, remediation, and document preparation, including various NEPA ancillary documents.
Carlos F. Garcia, P.G. Senior Environmental Specialist	M.S.T. in Biological Sciences, B.S. in Geology with 25 years of experience in conducting hazardous and solid waste assessments, remediation, and document preparation, including various NEPA documents.
Irving M. Day IV Senior Environmental Scientist	M.S. in Environmental Sciences and a B.S. in Geography (Urban and Regional Planning) with 11 years of experience in transportation related planning studies.

Table 7-1 – Final Environmental Impact Statement List of Preparers

Personnel	Experience
Edward Marks Environmental Scientist	B.S. in Geological Sciences, B.S. in Environmental Science with ten years of experience in geological/environmental analysis and document preparation, including various ancillary NEPA documents.
Odessa Bowen Environmental Scientist	M.A. in Marine Affairs and B.S. in Marine Sciences and Biology with ten years of experience in conducting environmental analyses, assessing ecological processes, and technical document preparation, including various NEPA and other ancillary documents.
Erick Revuelta	B.A. in Environmental Science with nine years of experience in natural resource management and regulatory permitting.
The Corradino Group	
Mike Ciscar, P.E. Deputy Project Manager	B.S. in Civil Engineering with 25 years of experience in transportation planning, PD&E, NEPA documentation, environmental permitting, and expert witness.
Ryan Solis-Rios, P.E., PTOE Project Development Engineer	B.S. in Civil Engineering with 14 years of experience conducting planning and PD&E studies from data collection, engineering and environmental analysis to final documentation.
Michael Colucci, P.E.	B.S in Civil Engineering with 13 years of experience in transportation planning, and civil and transportation engineering.
Krystal Fowler Project Designer	B.S in Civil Engineering with four years of experience in Roadway Design and Document QA/QC.
Barbara C. Rodriguez Public Involvement Coordinator	Ten years of experience in coordination of public involvement for the PD&E projects.
Pritchard Environmental	
Christine Pritchard Senior Environmental Scientist	B.S. degree in Physical Geography and 25 years of experience in environmental analysis and environmental document preparation.
Richard Garcia & Associates Inc.	
Richard Garcia, P.E. Traffic Engineer	M.S. and B.S. in Civil Engineering with 17 years of experience in transportation and traffic engineering.

8.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT

8.1 ELECTED OFFICIALS

- U.S.House of Representatives, District 25
- U.S. Senator (two)
- Florida House of Representatives, District 116
- Florida House of Representatives, District 119
- Florida House of Representatives, District 120
- Florida State Senator, District 34
- Florida State Senator, District 38
- Miami-Dade County Board of County Commissioners, District 1-13
- Miami-Dade County Mayor

8.2 FEDERAL AGENCIES

- Advisory Council on Historic Preservation, Office of Cultural Resources Preservation
- Colorado State University, The Libraries, Documents Librarian
- Federal Aviation Administration, Airport District Office
- Federal Aviation Administration – Regional Administrator
- Federal Emergency Management Agency – Assoc. General Counsel for Insurance and Mitigation
- Federal Emergency Management Agency – Natural Hazards Branch, Chief
- Federal Emergency Management Agency – Region IV, Flood Insurance and Mitigation Division, Director
- Federal Highway Administration, Division Administrator
- Federal Railroad Administration – Office of Economic Analysis, Director
- U.S. Army Corps of Engineers – Regulatory Branch, District Engineer, Jacksonville
- U.S. Army Corps of Engineers – Regulatory Branch, District Engineer, Miami
- U.S. Coast Guard – Commander (oan) – Seventh District
- U.S. Department of Agriculture – Natural Resources Conservation Services, State Conservationist
- U.S. Department of Agriculture – Southern Region, Regional Forester
- U.S. Department of Commerce – National Marine Fisheries Service – Habitat Conservation Division
- U.S. Department of Commerce – National Marine Fisheries Service – Miami Field Office
- U.S. Department of Commerce – National Marine Fisheries Service – South Regional Office
- U.S. Department of Commerce – National Oceanic and Atmospheric Administration, Ecology and Conservation Office, Director
- U.S. Department of Health and Human Services – Center for Environmental Health and Injury Control

- U.S. Department of Housing and Urban Development, Regional Environmental Officer
- U.S. Department of Interior – Bureau of Indian Affairs, Office of Trust Responsibilities
- U.S. Department of Interior – Bureau of Land Management – Eastern States Office, Director
- U.S. Department of Interior – Fish and Wildlife Services, Field Supervisor
- U.S. Department of Interior – National Park Service – South Regional Office
- U.S. Department of Interior, Office of Environmental Policy and Compliance, Director
- U.S. Department of Interior – U.S. Geological Survey, Chief
- U.S. Department of State – Office of Environmental, Health and Natural Resources
- U.S. Environmental Protection Agency – Region IV, Regional Administrator
- U.S. Environmental Protection Agency, Washington, D.C.

8.3 STATE AGENCIES

- Florida Department of Community Affairs – Division of Growth Management
- Florida Department of Environmental Protection, Florida State Clearinghouse
- Florida Department of Environmental Protection, Southeast District, Director
- Florida Department of Health, Division of Environmental Health
- Florida Department of State, Division of Historical Resources
- Florida Fish and Wildlife Conservation Commission – Office of Environmental Services, Director
- Florida Fish and Wildlife Conservation Commission – South Region Director, West Palm Beach
- Florida Department of Transportation – Central Environmental Management Office, Manager
- Florida Department of Transportation – Federal-Aid Programs, Manager
- South Florida Regional Planning Council, Executive Director
- South Florida Water Management District, Executive Director

8.4 TRIBAL GOVERNMENTS

- Miccosukee Tribe of Indians of Florida – Land Resources Manager
- Seminole Tribe of Florida

8.5 LOCAL AGENCIES

- Miami-Dade County Aviation Department, Director
- Miami-Dade County Community and Economic Development Department, Director
- Miami-Dade County Department of Environmental Resources Management, Director
- Miami-Dade County Department of Planning and Zoning, Director
- Miami-Dade County Division of Public Works, Director
- Miami-Dade County Expressway Authority, Director
- Miami-Dade County Fire and Rescue, Director

- Miami-Dade County Manager
- Miami-Dade County Metropolitan Planning Organization, Director
- Miami-Dade County Parks and Recreation Department, Director
- Miami-Dade County Office of Emergency Management, Director
- Miami-Dade County Office of Public Transportation Management, Director
- Miami-Dade County Police Department, Director
- Miami-Dade County Transit Agency, Director
- Miami-Dade County Water Sewer Department, Director
- Miami-Dade County Environmentally Endangered Lands Program, Director

9.0 INDEX

A

Action Plan Alternative..... i, R-3, R-10, R-14, 1-1, 2-23, 2-24, 2-25, 2-47, 2-54
Advance Notification .....See AN
Alternative 1.....
...vi, R-11, R-12, R-14, R-15, R-17, R-18, R-20, 2-32, 2-33, 2-36, 2-46, 2-48, 2-50, 2-51, 2-52, 2-53, 2-54, 4-2, 4-4, 4-10, 4-11, 4-20, 4-29, 4-30, 4-43, 4-49, 4-51, 4-57, 4-58, 4-61
Alternative 2.....
vi, R-12, R-14, R-15, 2-33, 2-37, 2-46, 2-48, 2-50, 2-51, 2-52, 2-53, 2-54, 4-2, 4-4, 4-17, 4-20, 4-29, 4-30, 4-43, 4-49, 4-51, 4-57, 4-58, 4-61
Alternative 3.....
..vi, R-12, R-14, R-15, R-16, R-17, R-18, R-20, R-21, 2-33, 2-38, 2-43, 2-46, 2-48, 2-50, 2-51, 2-52, 2-53, 2-54, 2-55, 3-60, 4-2, 4-4, 4-5, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-17, 4-18, 4-20, 4-29, 4-30, 4-41, 4-43, 4-45, 4-49, 4-51, 4-52, 4-57, 4-58, 4-61, 5-13, 5-21
Alternative 4.....
... vi, R-12, R-14, R-15, R-16, R-20, R-21, 2-34, 2-39, 2-46, 2-49, 2-50, 2-51, 2-52, 2-53, 2-54, 2-55, 4-2, 4-4, 4-17, 4-18, 4-20, 4-29, 4-30, 4-43, 4-49, 4-51, 4-52, 4-57, 4-58, 4-61, 5-13, 5-21
Alternative 5.....
..R-1, vi, 1, 7, 11, 13, 14, 15, 16, 19, 20, 25, 33, 47, 2-32, 2-35, 2-40, 2-41, 2-46, 2-49, 2-50, 2-51, 2-52, 2-53, 2-54, 2-55, 2-56, 3-50, 4-2, 4-4, 4-18, 4-20, 4-29, 4-30, 4-38, 4-43, 4-49, 4-51, 4-52, 4-54, 4-55, 4-57, 4-58, 4-61, 5-13, 5-21, 5-27, 6-2, 6-3, 6-4
AN..... x, R-16, 3-52, 4-16, 4-32, 4-33, 4-36, 5-1, 5-3, 5-10, 5-14

B

Bartram's scrub-hairstreak R-19, R-25, 3-50, 3-54, 3-57, 4-38, 4-40, 4-43, 6-2
Bicycle ... ii, iii, R-5, R-39, 2-2, 2-23, 2-24, 2-28, 2-29, 2-42, 2-43, 2-50, 3-23, 4-13, 4-80, 5-6, 5-26, 5-36
Binding Access Control Plan R-45, R-46, 1-11, 2-30, 5-6, 5-43, 5-44
BMPs.....x, R-42, 4-30, 4-31, 4-33, 4-36, 4-39, 4-42, 4-53, 4-60, 4-62, 5-4, 5-10, 5-14, 5-16, 5-39

C

CAC .....
x, R-3, R-6, R-7, R-8, R-31, R-38, R-39, R-41, R-43, R-44, R-45, 1-1, 2-31, 4-6, 4-60, 5-27, 5-28, 5-29, 5-35, 5-36, 5-38, 5-40, 5-42
Carter's small-flowered flax ...R-19, 3-49, 3-56, 3-59, 3-60, 4-37, 4-38, 4-41, 4-42, 4-52, 4-53, 4-54, 4-55
CDMP .....
vii, x, R-3, R-28, R-30, R-31, R-36, 1-4, 1-5, 1-6, 1-11, 1-12, 1-14, 1-15, 2-4, 2-47, 2-48, 2-49, 2-53, 4-1, 4-2, 4-5, 4-64, 4-65, 4-67, 4-68, 4-69, 4-70, 4-71, 4-74, 4-75, 4-76, 4-83, 4-84, 5-4, 5-5, 5-33

CFP ..... x, R-28, R-30, 1-11, 1-12, 1-14
Citizen's Advisory Committee ..... See CAC
Comprehensive Everglades Restoration Plan R-5, 4-80, 4-82, 4-85, 5-4, 5-5, 5-25
Core Foraging Area.....4-39, 5-3
Cost Feasible Plan..... See CFP
CRAS .....x, R-16, 3-16, 3-17, 4-6, 4-8, 5-22
CSER..... x, R-42, 3-37, 4-34, 5-5, 5-10, 5-16, 5-39
Cultural Resource Assessment Survey ..... See CRAS

D

DCA .....x, 1-5, 5-6
Department of Community Affairs..... See DCA
Department of Environmental Resources Management ..... See DERM
Department of Planning and Zoning..... 1-5, 5-3, 5-5, 8-2
DERM ..... x, R-5, 3-37, 4-9, 4-45, 5-5, 5-10, 5-13, 5-15, 5-16, 5-17, 5-18, 5-19, 5-20, 5-25, 5-26
DRER EMRD .....x, R-6, R-38, R-46, 3-11, 3-38, 3-60, 4-34, 4-35, 5-26, 5-34, 5-35, 5-43
DRI..... x, R-36, 1-14, 4-83, 5-33

E

EEL .....
.x, R-5, R-6, R-13, R-15, R-19, R-28, R-31, R-32, R-37, R-38, R-46, 2-12, 2-48, 2-49, 2-52, 2-54, 2-55, 3-11, 3-49, 3-50, 3-51, 3-59, 3-60, 4-42, 4-45, 4-47, 4-49, 4-53, 4-54, 4-55, 5-9, 5-13, 5-15, 5-17, 5-18, 5-19, 5-20, 5-21, 5-26, 5-34, 5-35, 5-43, 6-3, 6-4
Efficient Transportation Decision Making ..... See ETDM
Endangered Species Biological Assessment..... See ESBA
Environmental Resource Permit R-27, 4-30, 4-32, 5-4, 5-14, 5-22
Environmental Screening Tool ..... See EST
Environmentally Endangered Lands Program ..... See EEL
equestrian R-39, 2-24, 2-25, 2-28, 2-29, 2-31, 3-23, 4-13, 5-6, 5-36
ESBA .....
.x, R-18, R-19, R-37, R-38, R-42, 3-49, 3-50, 4-37, 4-42, 4-54, 4-55, 5-12, 5-13, 5-17, 5-18, 5-19, 5-20, 5-21, 5-34, 5-39
Essential Fish Habitat .....ii, iii, R-20, 3-66, 4-61, 5-11
EST ..... x, 5-6, 5-7, 5-8
ETDM ..... x, R-9, R-35, 3-52, 4-16, 4-32, 4-45, 4-61, 5-6, 5-7, 5-8, 5-10, 5-11, 5-15, 5-29, 5-31

F

Farmlands.....
R-15, R-20, R-23, R-41, R-44, R-46, R-47, 2-55, 3-66, 4-61, 4-77, 4-86, 5-38, 5-41, 5-43, 5-44
FDEO .....x, 1-5, 1-14, 4-66, 4-76, 4-83, 4-84, 5-6

FDEP ..... x, R-16, R-20, R-25, R-27, R-32, 3-37, 3-38, 3-47, 4-32, 4-34, 4-36, 4-55, 5-4, 5-5, 5-7, 5-10, 5-14, 5-16, 6-2
FDOT ..... viii, ix, x, R-1, R-3, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-17, R-18, R-19, R-20, R-21, R-22, R-23, R-24, R-25, R-26, R-27, R-30, R-31, R-32, R-33, R-34, R-36, R-38, R-39, R-40, R-41, R-42, R-43, R-45, R-46, 1-1, 1-4, 1-5, 1-6, 1-8, 1-9, 1-11, 2-24, 2-29, 2-30, 2-31, 2-42, 2-47, 2-55, 3-15, 3-16, 3-24, 3-27, 3-28, 3-29, 3-31, 3-36, 3-37, 3-47, 3-49, 3-66, 4-1, 4-3, 4-4, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-14, 4-15, 4-16, 4-18, 4-19, 4-20, 4-27, 4-29, 4-30, 4-31, 4-32, 4-34, 4-35, 4-36, 4-37, 4-39, 4-40, 4-41, 4-42, 4-43, 4-45, 4-47, 4-53, 4-54, 4-55, 4-57, 4-58, 4-60, 4-61, 4-62, 4-63, 4-64, 4-65, 4-70, 4-75, 4-77, 4-83, 4-84, 4-85, 4-86, 5-1, 5-6, 5-7, 5-8, 5-9, 5-10, 5-12, 5-14, 5-16, 5-20, 5-23, 5-26, 5-27, 5-29, 5-30, 5-33, 5-34, 5-35, 5-36, 5-37, 5-38, 5-39, 5-40, 5-42, 5-43, 5-44, 6-1, 6-2, 6-3, 7-1
Federal Emergency Management Agency ..... See FEMA
Federal Highway Administration ..... See FHWA
FEMA 3-47, 4-35, 4-36
FHWA ..... x, R-1, R-6, R-15, R-16, R-17, R-18, R-19, R-21, R-33, R-35, R-36, R-37, R-38, R-40, R-47, 2-12, 2-13, 2-19, 2-42, 2-55, 3-24, 3-27, 3-28, 3-29, 3-37, 4-7, 4-8, 4-9, 4-10, 4-11, 4-14, 4-16, 4-18, 4-28, 4-29, 4-34, 4-39, 4-40, 4-41, 4-42, 4-43, 4-55, 4-63, 4-77, 5-7, 5-9, 5-26, 5-31, 5-32, 5-34, 5-37, 7-1
FIHS ..... x, R-7, R-11, R-12, 1-4, 2-1, 2-29, 2-30, 2-31, 2-33, 2-46, 2-48, 5-27
FIRM ..... x, 3-47
Flood Insurance Rate Maps ..... See FIRM
Florida bonneted bat R-19, R-25, R-37, 3-49, 3-50, 3-53, 3-59, 4-37, 4-38, 4-42, 5-34, 6-1
Florida brickell-bush R-19, 4-43
Florida Department of Economic Opportunity ..... See FDEO
Florida Fish and Wildlife Conservation Commission ..... See FWC
Florida Intrastate Highway System ..... See FIHS
Florida leafwing R-19, R-25, 3-50, 3-54, 3-57, 4-38, 4-40, 4-43, 6-2
FWC ..... x, 24, 26, 27, 3-52, 3-53, 3-57, 3-58, 3-60, 4-32, 4-38, 4-39, 4-41, 4-45, 4-55, 4-81, 5-7, 5-12, 5-13, 5-17, 5-18, 6-1, 6-2

L

Level of Service ..... See LOS
Lighting ..... ii, iii, R-39, R-43, R-45, 3-15, 4-6, 5-35, 5-40, 5-42
LOS ..... x, R-29, R-30, R-37, 1-5, 1-9, 1-11, 1-13, 2-22, 2-24, 2-51, 4-65, 4-69, 4-76, 5-33

M

Metropolitan Planning Organization ..... See MPO
MPO ..... x, R-1, R-4, R-5, R-10, R-28, R-30, R-31, 1-4, 1-5, 1-6, 1-11, 1-12, 1-13, 1-14, 2-23, 4-16, 4-65, 5-6, 5-10, 5-24, 5-26

N

NAAQS ..... x, 3-24, 4-15, 5-9, 5-10
NAC ..... xi, R-21, 3-27, 4-16, 4-18, 4-19, 4-28
NAM ..... xi, 3-60, 4-47, 5-13, 5-17, 5-18, 5-19, 5-20
National Ambient Air Quality Standards ..... See NAAQS
National Environmental Policy Act ..... See NEPA
National Pollutant Discharge Elimination System Permit 27
National Register of Historic Places ..... See NRHP
Natural Areas Management ..... See NAM
Natural Resource Conservation Service ..... See NRCS
NEPA ..... xi, R-1, R-3, R-34, R-35, R-36, R-42, 1-1, 2-19, 2-20, 4-63, 4-77, 5-3, 5-30, 5-31, 5-32, 5-39, 7-1, 7-2, 7-3
No-Build Alternative ..... i, R-3, R-10, 1-1, 2-22, 2-23, 2-47, 3-24, 4-1, 4-14, 4-15, 4-17, 4-18, 5-9
Noise Abatement Approach Criteria R-21, 3-27, 4-18
Noise Abatement Criteria ..... See NAC
NRCS ..... xi, R-20, 3-66, 4-61, 4-86, 5-9
NRHP ..... xi, R-16, R-17, R-21, R-23, 2-52, 2-53, 3-15, 3-16, 3-17, 3-21, 3-28, 3-29, 4-5, 4-6, 4-8, 4-10, 4-12, 4-13, 4-17, 4-18, 4-28, 4-84

O

Owaissa Bauer Pineland Preserve Addition No. 1 ..... iii, vii, viii, R-5, R-13, R-15, R-16, R-19, R-25, R-27, R-31, R-32, R-46, 2-12, 2-54, 2-55, 3-11, 3-17, 3-24, 3-49, 3-50, 3-51, 3-59, 3-60, 3-61, 3-62, 3-63, 4-5, 4-8, 4-9, 4-14, 4-37, 4-40, 4-41, 4-43, 4-44, 4-45, 4-46, 4-47, 4-49, 4-50, 4-51, 4-53, 4-54, 4-55, 4-56, 5-9, 5-12, 5-13, 5-15, 5-17, 5-18, 5-19, 5-20, 5-21, 5-26, 5-43, 6-2, 6-3, 6-4

P

PD&E ..... xi, R-6, R-7, R-8, R-9, R-20, R-24, R-28, R-29, R-31, R-34, R-36, R-42, 1-4, 1-6, 1-12, 1-13, 2-1, 2-4, 2-18, 2-22, 2-24, 3-16, 3-24, 3-25, 3-27, 3-29, 3-36, 3-37, 3-47, 3-49, 3-60, 3-66, 4-6, 4-14, 4-16, 4-29, 4-32, 4-34, 4-35, 4-37, 4-45, 4-61, 4-80, 4-85, 5-9, 5-20, 5-27, 5-28, 5-29, 5-30, 5-33, 5-39, 6-1, 7-1, 7-3
PER ..... xi, R-10, R-34, R-37, R-38, R-39, R-40, R-42, R-43, R-44, R-45, R-46, R-47, 1-9, 1-11, 2-18, 2-19, 2-22, 2-23, 2-31, 2-51, 3-25, 4-47, 4-76, 5-30, 5-31, 5-33, 5-35, 5-36, 5-37, 5-38, 5-40, 5-41, 5-43, 5-44
Plans Preparation Manual R-11, R-24, R-38, R-39, R-40, R-41, R-42, R-43, R-46, 2-31, 2-32, 2-49, 2-50, 4-63, 5-35, 5-36, 5-37, 5-38, 5-40, 5-43, 6-1

Preferred Alternative..... R-1, R-6, R-14, R-15, R-18, R-25, R-33, R-35, R-37, R-47, 2-54, 2-55, 3-50, 4-11, 4-34, 4-38, 4-63, 5-31, 5-33, 6-2, 6-3, 6-4
Preliminary Engineering Report ..... See PER
Project Development and Environment ..... See PD&E
Public Hearing ....iv, v, R-6, R-7, R-8, R-9, R-10, R-41, R-44, 2-22, 2-55, 5-27, 5-28, 5-29, 5-38, 5-40, 6-3

S

Safety .... i, vi, R-1, R-3, R-7, R-10, R-11, R-14, R-33, R-38, R-44, 1-1, 1-4, 1-5, 1-6, 1-7, 1-8, 1-10, 1-11, 2-1, 2-17, 2-18, 2-19, 2-21, 2-22, 2-23, 2-24, 2-25, 2-28, 2-31, 2-42, 2-46, 2-50, 2-54, 2-55, 4-4, 4-80, 5-6, 5-14, 5-15, 5-17, 5-18, 5-27, 5-35, 5-41, 6-3
SFWMD ..... .xi, R-16, R-24, R-27, R-37, R-41, R-46, 1-10, 1-15, 2-8, 2-12, 2-42, 2-43, 3-12, 3-18, 3-20, 3-23, 3-28, 3-30, 3-32, 3-36, 3-51, 4-5, 4-8, 4-9, 4-12, 4-13, 4-17, 4-29, 4-30, 4-32, 4-33, 4-34, 4-35, 4-69, 4-80, 4-81, 4-82, 5-4, 5-5, 5-10, 5-11, 5-12, 5-14, 5-15, 5-16, 5-17, 5-18, 5-19, 5-20, 5-22, 5-34, 5-38, 5-43, 6-1
SHPO .....xi, R-16, R-17, R-18, 3-16, 4-8, 4-9, 4-10, 4-11, 4-13, 5-6, 5-22
SIS ....xi, R-11, R-12, R-38, 1-11, 2-1, 2-17, 2-18, 2-29, 2-30, 2-31, 2-32, 2-33, 2-48, 2-50, 4-64, 4-65, 4-75, 5-35
South Florida Water Management District ..... See SFWMD
State Historic Preservation Officer ..... See SHPO
Strategic Intermodal System ..... See SIS

T

Transportation System Management ..... See TSM
TSM R-3, R-10, R-11, R-14, R-34, 1-1, 1-8, 2-1, 2-23, 2-28, 2-32, 2-45, 2-46, 2-47, 2-50, 2-51, 2-52, 2-53, 2-54, 5-17, 5-18, 5-31

U

U.S. Army Corps of Engineers ..... See USACE
U.S. Department of Agriculture R-20, R-41, R-44, R-46, R-47, 4-29, 4-61, 4-86, 5-9, 5-38, 5-41, 5-43, 5-44, 8-1
U.S. Department of Transportation ..... See USDOT
U.S. Environmental Protection Agency ..... See USEPA
U.S. Fish and Wildlife Service ..... See USFWS
UDB ..... . xi, R-36, 1-14, 2-30, 3-1, 4-1, 4-64, 4-65, 4-68, 4-69, 4-70, 4-71, 4-72, 4-74, 4-75, 4-76, 4-83, 5-33

Urban Development Boundary ..... See UDB
USACE ..... xi, R-27, 3-30, 3-59, 4-32, 4-81, 4-82, 5-7, 5-11, 5-12, 5-21
USDOT .....xi, 3-29, 3-47, 4-35
USEPA.....
.....xi, R-27, R-42, 3-24, 4-16, 4-32, 4-33, 4-34, 4-63, 4-71, 5-4, 5-7, 5-10, 5-14, 5-39, 7-2
USFWS .....
...xi, R-18, R-19, R-25, R-27, R-37, R-38, R-40, 3-31, 3-32, 3-49, 3-50, 3-52, 3-53, 3-57, 3-58, 3-59, 3-60, 4-29, 4-32, 4-38, 4-39, 4-41, 4-42, 4-43, 4-45, 4-54, 4-55, 5-3, 5-7, 5-13, 5-17, 5-18, 5-34, 5-35, 5-37, 6-2

W

WER..... xi, R-42, 3-29, 3-47, 4-29, 4-32, 4-35, 5-11, 5-12, 5-21, 5-22, 5-39
Wetland Evaluation Report.....See WER

APPENDIX A

SR 997/Krome Avenue Existing Level of Service Study

SR 997/Krome Avenue
Existing Level of Service Study

SW 296th Street/Avocado Road
to
US27/Okeechobee Rd
Miami-Dade

Florida Department of Transportation
District VI

August 2002

Prepared by Kittelson & Associates, Inc.

FDOT D6 Systems Planning

Krome Avenue Existing LOS and Safety Analysis

Miami-Dade County, Florida

Prepared For:
Florida Department of Transportation, District Six

Prepared By:
Kittelson & Associates, Inc.
110 E Broward Blvd, Suite 2410
Ft. Lauderdale, FL 33301
(954) 735-1245

Project Manager: John Zegeer
Project Analysts: Thuha Nguyen,
Lei Xu, Marais Lombard, Susan Wright

Project No. 4533.03

August 2002

Table of Contents

	Executive Summary	I
Section 1	Introduction	2
Section 2	Roadway Inventory	4
Section 3	Traffic Counts	11
Section 4	Traffic Characteristics	19
Section 5	Intersection Inventory	23
Section 6	Travel Time Runs	31
Section 7	Crash Data	35
Section 8	Intersection/Arterial Level of Service	54
Section 9	References	59

List of Figures

Figure E-1: Arterial Level of Service ... III

Figure E-2: Intersection Level of Service ... V

Figure E-3: Safety Analysis Results ... VII

Figure 1: Site Vicinity ... 2

Figure 2 A-E: Existing Lane Configurations and Traffic Control Devices ... 5

Figure 3 A-E: Existing Turning Movement Counts and Morning Peak Intersection Level of Service ... 13

Figure 4: Northbound approach at Eureka Drive/SW 184th Street ... 24

Figure 5: Southbound approach at Eureka Drive/SW 184th Street ... 24

Figure 6: Northbound approach at Kendall Drive/SW 88th Street ... 26

Figure 7: Southbound approach at Kendall Drive/SW 88th Street ... 26

Figure 8: Northbound approach at Tamiami Trail/SW 8th Street ... 27

Figure 9: Southbound approach at Tamiami Trail/SW 8th Street ... 27

Figure 10: Northbound approach at US 27/Okeechobee Road ... 29

Figure 11: View from North at US 27/Okeechobee Road ... 29

Figure 12 A-E: Average Annual Intersection and Segment Crashes and Safety Ratio (1995-2000) ... 39

Figure 13 A-E: Fatal Crashes (1995-March 2002), Segment Fatal Crash and Fatality Rates (1995-2001) ... 47

Figure 14: Summary of Safety Analysis ... 52

Figure 15: Intersection Level of Service for the Morning Peak Hour ... 57

List of Tables

Table E-1: Performance Measures for Intersections with Level of Service of F (Morning Peak Hour) IV

Table E-2: Summary of Fatal Crashes and Fatalities (1995-March 2002) VI

Table 1: Average Daily Traffic for the years 1995 to 2001 11

Table 2: Morning and Afternoon Peak Hour Two-Way Volume Comparison7 12

Table 3: Summary of Directional Distribution Factor (D) 19

Table 4: Summary of K_{100}-Factor 20

Table 5: Morning Peak Hour Percentage of Trucks for the Segment SW 8th Street/Tamiami Trail to US 27/Okeechobee Rd 21

Table 6: Daily Percentage of Trucks (T) for the Segment SW 8th Street/Tamiami Trail to US 27/Okeechobee RD 21

Table 7: Summary of Percentage of Truck (T) 21

Table 8: Northbound Travel Time and Delay Results 32

Table 9: Southbound Travel Time and Delay Results 33

Table 10: Summary of Crashes by Categories 35

Table 11: Summary of Fatal Crashes and Fatalities (January 1995- March 2002) 44

Table 12: Nearby Conditions at Fatal Crashes Locations 45

Table 13: Arterial Level of Service for the Morning Peak Hour 55

Table 14: Intersection Level of Service for the Morning Peak Hour 55

Executive Summary

Executive Summary

The purpose of this study is to perform a detailed Level of Service and safety analysis for existing conditions along the SR 997/Krome Avenue (177th Avenue) corridor. The portion of Krome Avenue that was analyzed includes a two-lane highway section of slightly less than 33-miles in length. The section begins on the south at SW 296th Street (Avocado Drive) - at the City of Homestead northern limits – and ends on the north at US 27 (Okeechobee Road). The southern limit of the study area is at MP 3.827 in Section 87, subsection 150000, and the northern limit is at MP 14.275 in Section 87-subsection 070000. This study area is divided into five segments for analysis purposes:

- SW 296th Street (Avocado Drive) to SW 232nd Street (Silver Palm Drive) – 4.052 miles
- SW 232nd Street (Silver Palm Drive) to SW 184th Street (Eureka Drive) – 3.017 miles
- SW 184th Street (Eureka Drive) to SW 88th Street (Kendall Drive) – 6.535 miles
- SW 88th Street (Kendall Drive) to SW 8th Street (Tamiami Trail) – 4.999 miles
- SW 8th Street (Tamiami Trail) to US 27 (Okeechobee Road) – 14.275 miles

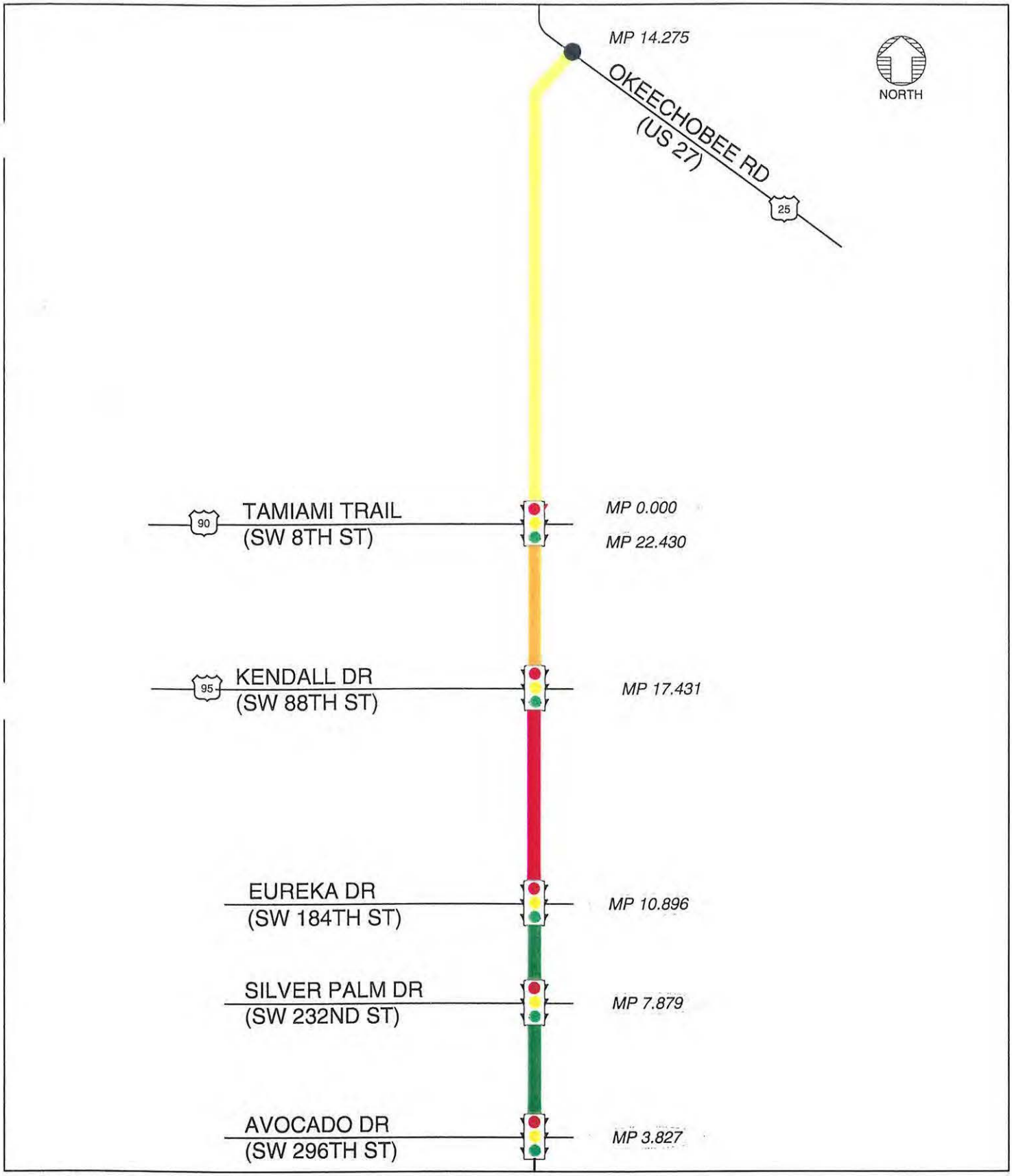
There are ten signalized intersections along this 33-mile section. Exclusive left turn lanes are provided at each signalized intersection in both northbound and southbound directions except at Avocado Drive and Tamiami Trail. The signal density (i.e., number of signals per mile) varies significantly on the five segments listed above. From south to north, the five segment signal densities are: 0.99 per mile, 0.99 per mile, 0.15 per mile, 0.20 per mile, and 0.04 per mile, respectively. Thus, the two southernmost segments are more suburban in character, while the three northernmost segments are more rural in character.

Traffic Characteristics

The year 2001 Average Daily Traffic (ADT) volumes vary between 14,100 and 14,800 south of Tamiami Trail. North of Tamiami Trail, the year 2001 ADT is 9,000. Since 1995, the ADT has grown at an average annual rate that ranges from five percent to 21 percent. **From south to north, the five segment average annual growth rates are: 13%, 11%, 10%, 21%, and 5%, respectively.** The highest hourly volume occurs in the morning peak hour. During the morning peak hour in the southern two segments, the volume in each direction varies between 580 and 770 vehicles. North of Eureka Drive, there is a heavy northbound a.m. peak hour flow of between 580 and 1030 vehicles. The southbound a.m. peak hour flow is between 410 and 700 vehicles. The percentage of vehicles that are trucks on Krome Avenue is very high: varying between 20.4% and 33.4% during the weekday a.m. peak hour.

Arterial Operation Analysis

HCS-Arterials was used for the urbanized arterial analysis, and HCS Two-lane was used for the rural analysis. Using the traffic volumes measured on Krome Avenue and the procedures contained in the Quality/Level of Service Handbook (Florida Department of Transportation, 2002), the arterial Level of Service was estimated for the morning peak hour. As shown in Figure E-1, three of the five segments operate at acceptable conditions (Avocado Drive to Silver Palm Drive and Silver Palm Drive to Eureka Drive: LOS A, Tamiami Trail to Okeechobee Road: LOS C). **The segment from Eureka Drive to Kendall Drive operates at Level of Service E. The segment from Kendall Drive to Tamiami Trail operates at Level of Service D.**



LEGEND

- LOS A
- LOS C
- LOS D
- LOS E

ARTERIAL LEVEL OF SERVICE

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE E-1

4533KROME (ART LOS)

To confirm these estimates of arterial Levels of Service, travel time and delay studies were conducted along Krome Avenue. The Level of Service was determined based on measured travel speeds, consistent with the procedures contained in the Florida Manual on Uniform Traffic Studies and Highway Capacity Manual. Based on the northbound travel time and delay observed in the field, the segment from Avocado Drive to Silver Palm Drive operates at Level of Service B, and Silver Palm Drive to Eureka Drive operates at Level of Service C. The two segments between Eureka Drive and Tamiami Trail operate at Level of Service D, and the segment from Tamiami Trail to Okeechobee Road operates at Level of Service C. The reported Level of Service based on the travel time and delay study is consistent with the estimated Level of Service calculated from the FDOT Quality/Level of Service Handbook procedure.

Intersection Operation Analysis

A weekday morning peak hour Level of Service analysis was conducted at ten signalized and four unsignalized intersections. Volumes were collected for both morning and afternoon peak periods and it was determined that the traffic characteristics were similar for both peaks. The morning period was chosen for analysis because it has a slightly higher volume. The four unsignalized intersections chosen for analysis are considered to be larger intersections and/or to have a high crash history.

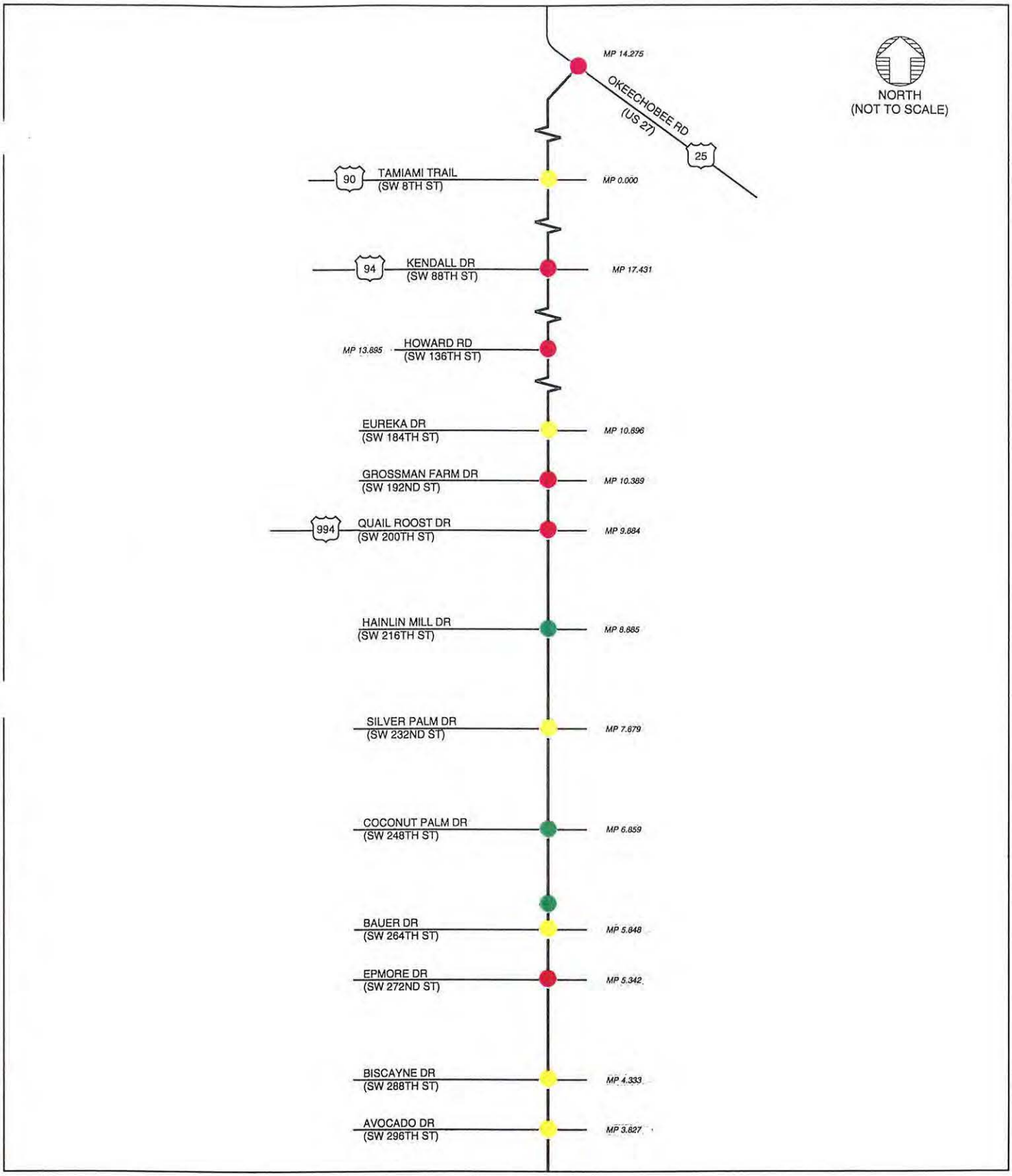
The operational analysis at the 14 intersections was performed using the Highway Capacity Software (HCS) package. **HCS-Signals was used for the ten signalized intersections. HCS-Unsignal was used for the four unsignalized intersections.**

As seen in Figure E-2, two of the ten signalized intersections operate at Level of Service F and all four unsignalized intersections operate at Level of Service F as listed in Table E-1.

Table E-1: Performance Measures for Intersections with Level of Service of F (Morning Peak Hour)

Intersection	Critical v/c	Delay (sec)	Intersection LOS
Epmore Drive/SE 272nd Street - signalized	0.73	83.2	F
Quail Roost Drive/SW 200th Street	1.02*	94.3*	F
Grossman Farm Drive/SW 192nd Street	0.84*	111.0*	F
Howard Road/SW 136th Street	1.69*	397.5*	F
Kendall Drive/SW 88th Street - signalized	1.03	238.0	F
Okeechobee Road/US 27	1.59*	366.7*	F

* Values are for the critical movement



LEGEND

- LOS B
- LOS C
- LOS F

INTERSECTION LEVEL OF SERVICE

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE E-2

4533KROME (INT LOS)

Crash Analysis

All crashes on Krome Avenue were analyzed for the years 1995 to 2000, inclusive. Of the 16 intersections that were analyzed, five had abnormally high crash ratios:

- SW 248th Street (Coconut Palm Drive) in 1998
- SW 136th Street (Howard Road) in 2000
- SW 88th Street (Kendall Drive) in 1996
- SW 8th Street (Tamiami Trail) in each of the six years, from 1995 to 2000, and
- US 27 (Okeechobee Road) in 1996 and 1999.

Of the five segments on Krome Avenue, the two southernmost segments consistently had high crash ratios for each of the six years. Over half of all of the crashes in these segments occurred at signalized intersections. The segment between Eureka Drive and Kendall Drive had high crash rates for three of the six years. The segment between Kendall Drive and Tamiami Trail had high crash rates for four of the six years. The segment between Tamiami Trail and Okeechobee Road had high crash rates for five of the six years (Figure E-3). **Compared with the statewide average for rural highways, Krome Avenue consistently had a higher crash rate for the six years that were analyzed (1995-2000).**

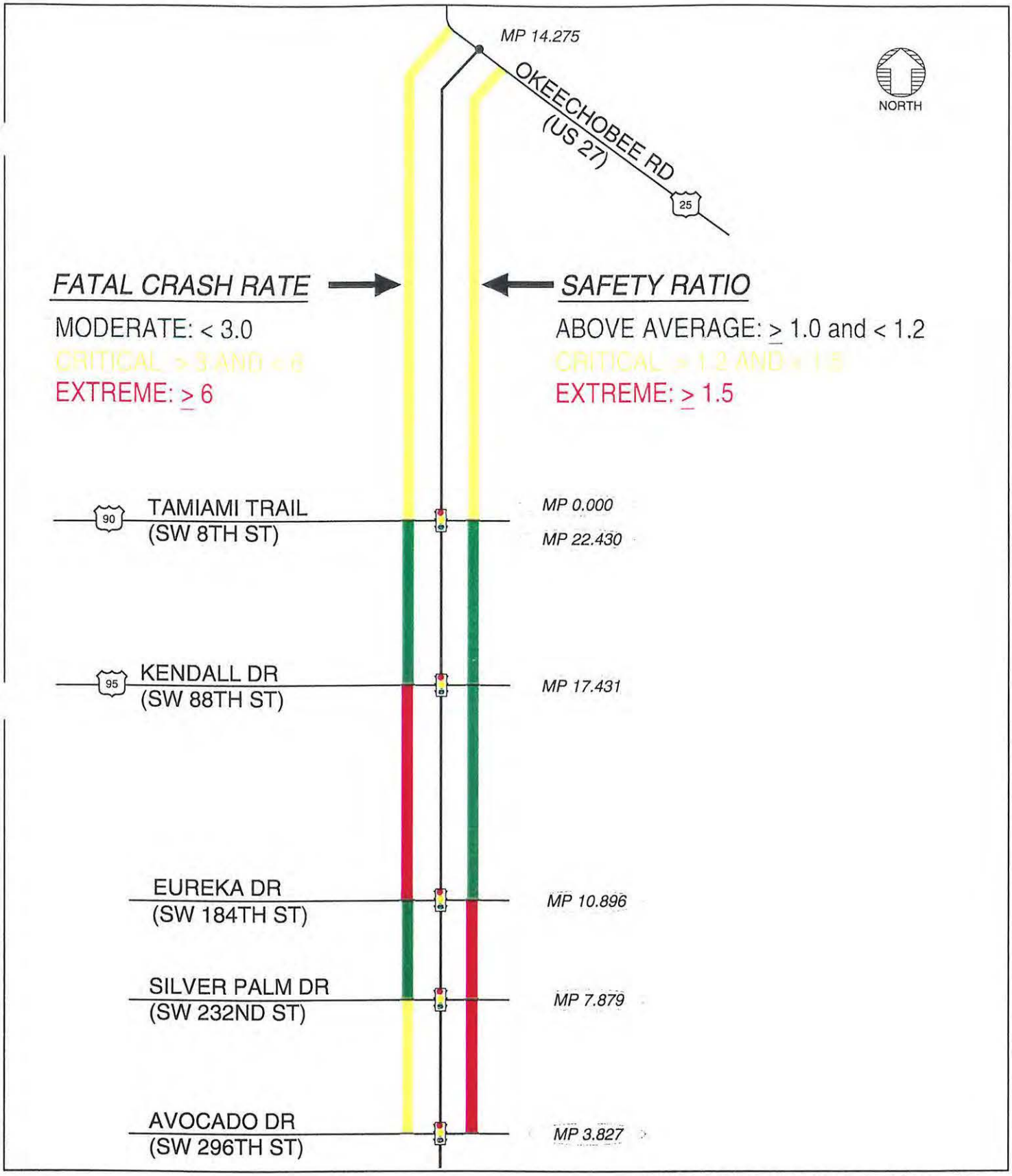
Fatal crashes from January 1995 to March 2002 were investigated more closely. **The number of fatal crashes increased significantly after the year 1999, especially from Eureka Drive to Kendall Drive (see Figure 13-C) and from Tamiami Trail to Okeechobee Road (see Figure 13-E).** Of the 39 fatal crashes that occurred from 1995 to March 2002, approximately half of them occurred at night. **Fifteen of the 39 fatal crashes were head-on crashes (accounting for 24 fatalities).** The segment from Eureka Drive to Kendall Drive had the highest fatal crash rate. In a length of less than five miles, there were 14 fatal crashes from 1995 to 2001. All three of the fatal crashes that occurred in the first three months of 2002 were within a three-mile segment north of Tamiami Trail. A summary of the fatal crashes that occurred in the last seven years is presented in the Table E-2.

Table E-2: Summary of Fatal Crashes and Fatalities (1995-March 2002)

Year	1995	1996	1997	1998	1999	2000	2001	2002 (Jan-Mar)
Fatal Crashes	3	3	2	3	5	8	12	3
Fatalities	5	3	5	3	6	9	18	5

Conclusions

The operational analysis reveals that two of the five segments and six of the fourteen analyzed intersections along Krome Ave operate at an undesirable Level of Service. The safety analysis demonstrates that Krome Avenue has a higher crash rate, compared to the statewide average, than other roadways with the same characteristics.



NOTE: FATAL CRASH RATE IS THE NUMBER OF FATAL CRASHES PER 100 MILLION VEHICLE MILES

LEGEND

- MODERATE
- CRITICAL
- EXTREME

SAFETY ANALYSIS

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA JULY 2002	FIGURE E-3

4533KROME (CRASHMAP)

Introduction

The purpose of this study is to perform a detailed Level of Service and safety analysis for the SR 997/Krome Avenue (177th Avenue) corridor. The southern limit of the study area is Avocado Drive/SW 296th Street at MP 3.827 in Section 87; subsection 150000 (where the Homestead/Florida City improvement project begins). The northern limit of the study area is US 27 – Okeechobee Blvd at MP 14.275 in Section 87; subsection 070000. The study corridor is highlighted in Figure 1.

The study is not intended to examine any non-motorized travel components, nor is it intended to examine any land-use implications within the corridor. The study is simply for the purpose of determining the existing traffic operating conditions within the corridor, using the highest Level of traffic operations analysis that is currently available to the Department. The outcome of this work will be the identification of existing Level of Service on SR 997/Krome Avenue.

Classification counts and turning movement counts were collected so that traffic characteristics (D, K, PHF, and truck percentages) could be documented. Crash data for the years 1995 to 2000 were examined. A Level of Service analysis was performed for all of the signalized and some major unsignalized intersections using the Highway Capacity Software package. The operational analysis methodologies are based upon the Year 2000 Highway Capacity Manual. Travel time runs were also performed to compare with the travel times predicted using the HCS-Arterials software.

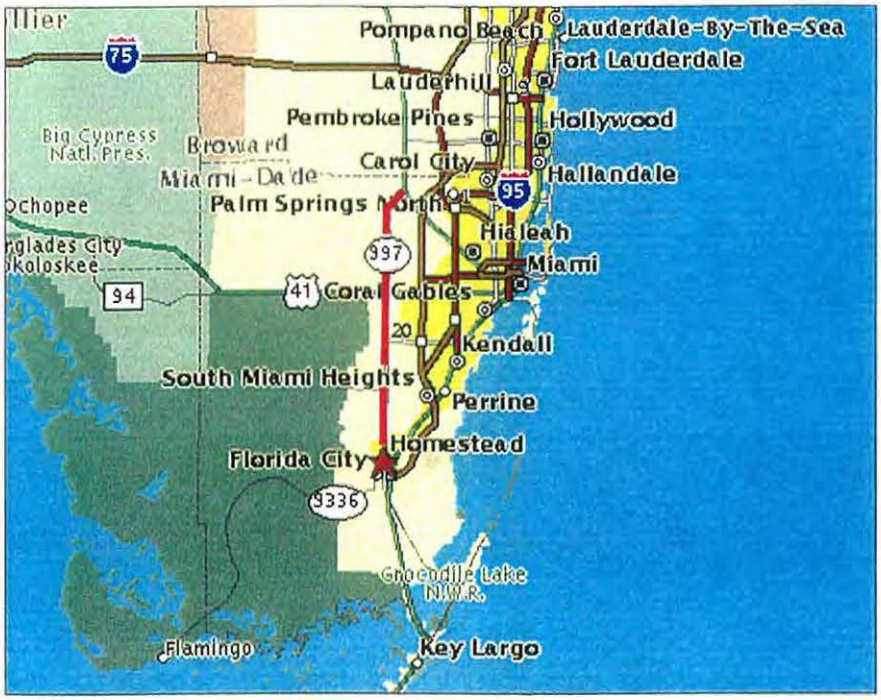


Figure 1: Site Vicinity

Section 1

Introduction

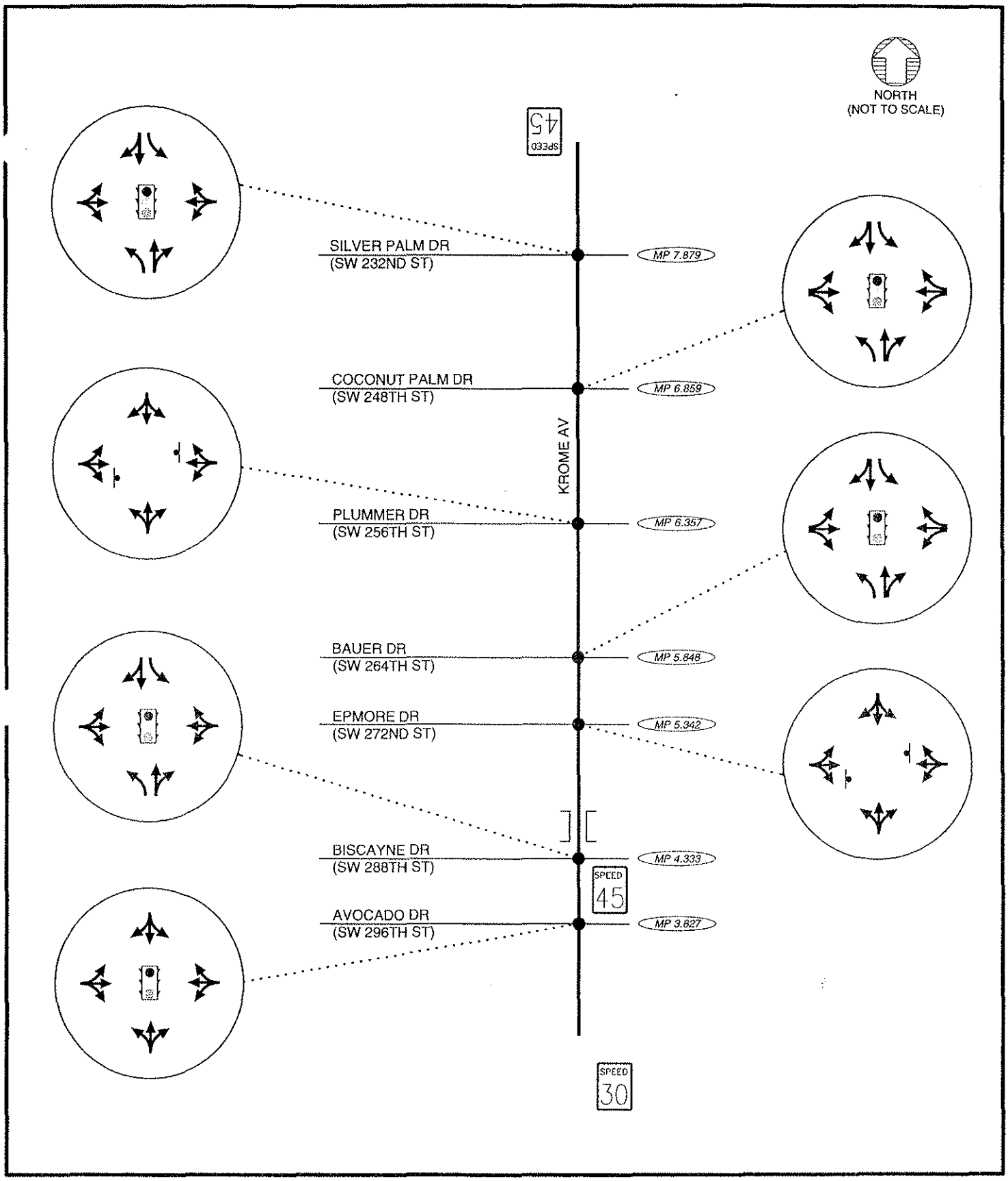
Section 2

Roadway Inventory

Roadway Inventory

A field review was conducted during the a.m. peak period to assess traffic operations along the corridor within the project limits. The review indicated that the a.m. period experienced poorer traffic conditions and more traffic congestion.

Figures 2A-E show the existing lane configurations and traffic control devices along the entire route. Posted speed limit signs are noted. The field inventory identified roadway lane geometry, posted speed limit, traffic control devices and selected roadway or roadside elements that contribute most to arterial and intersection operations. Pavement conditions and the adequacy of roadway lighting were not inventoried. Details of the roadway inventory can be found in the data document for this project.



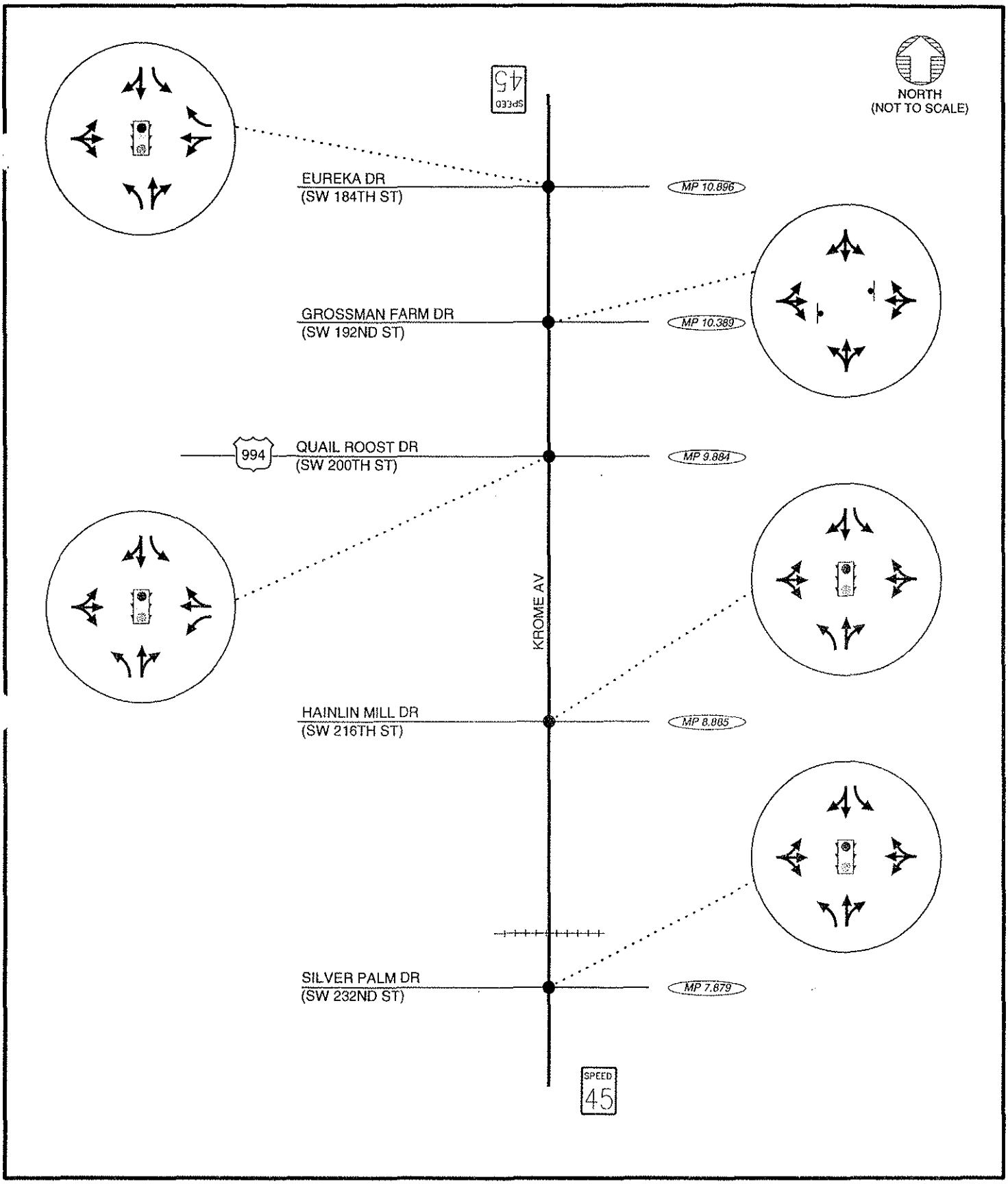
LEGEND

- STOP SIGN
- TRAFFIC SIGNAL
- SPEED 55 SPEED LIMIT
-][BRIDGE
- RAILROAD CROSSING

EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL DEVICES

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 2A

4533FIG (LANE)



LEGEND

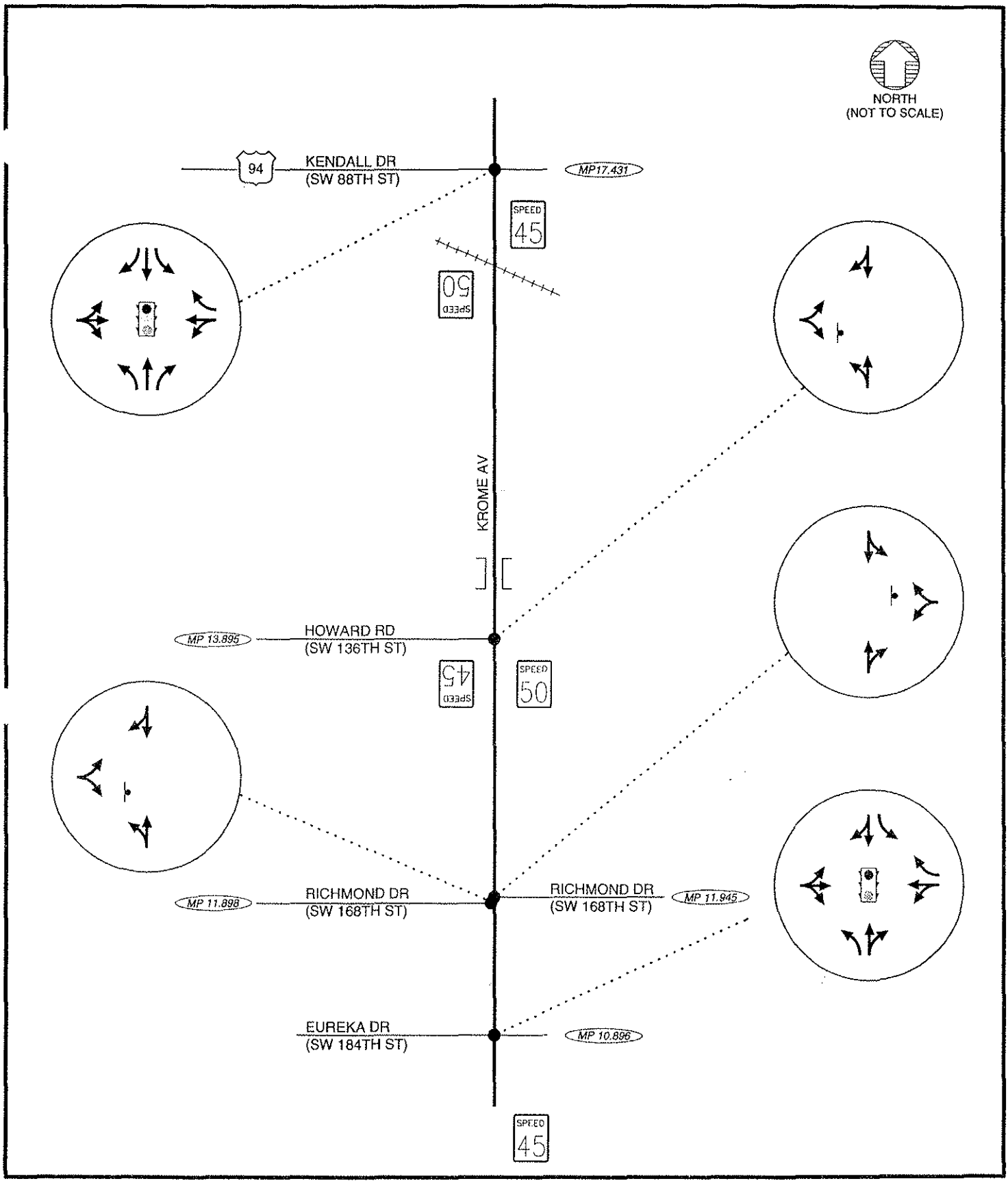
- STOP SIGN
- SPEED 55 SPEED LIMIT
- TRAFFIC SIGNAL
-][BRIDGE
- RAILROAD CROSSING

EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL DEVICES

KROME AVENUE - EXISTING LOS ANALYSIS
MIAMI, FLORIDA
AUGUST 2002

FIGURE 2B

4533FIG (LANE)



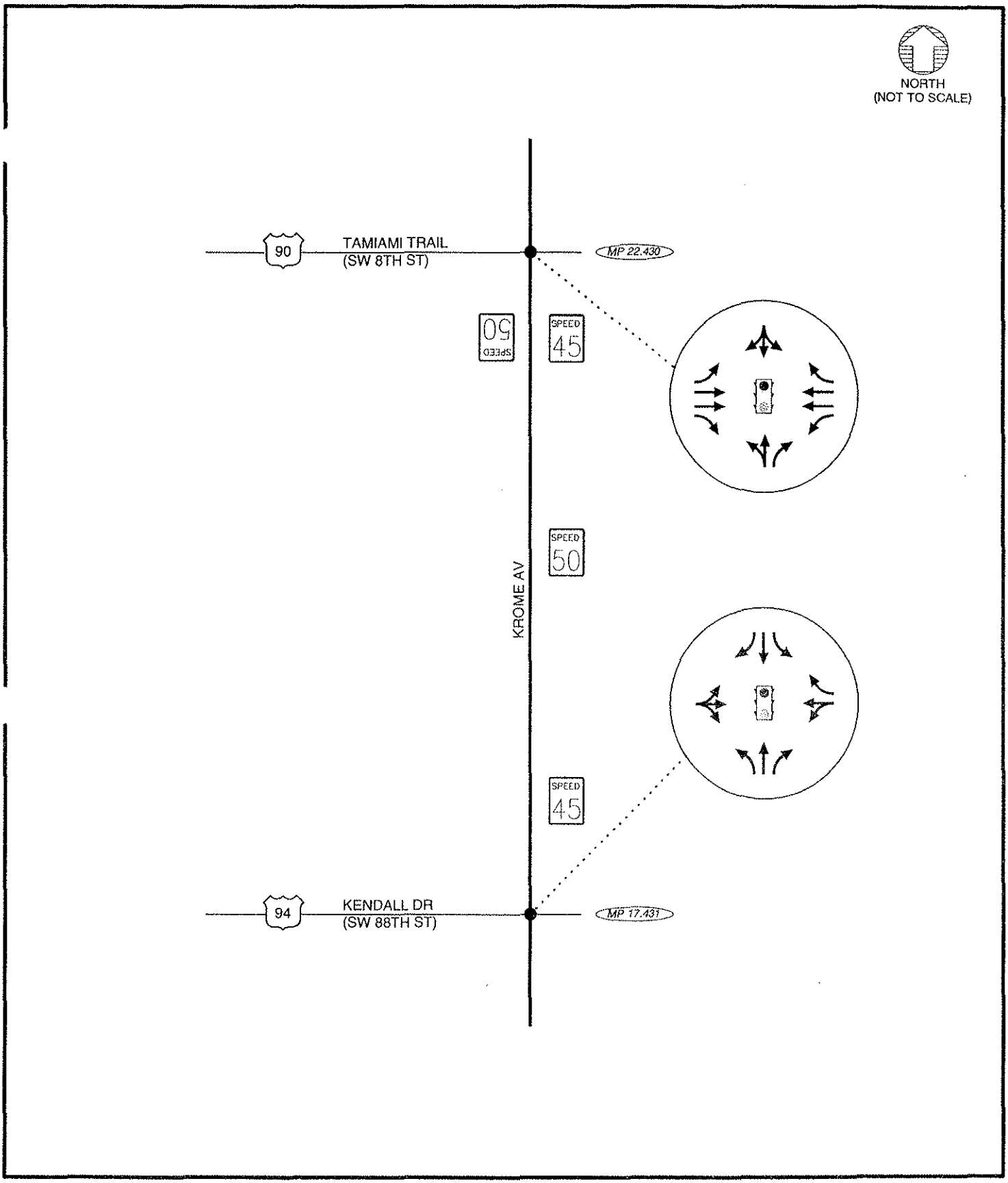
LEGEND

- STOP SIGN
- SPEED 55 SPEED LIMIT
- TRAFFIC SIGNAL
-][BRIDGE
- RAILROAD CROSSING

EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL DEVICES

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 2C

4533FIG (LANE)



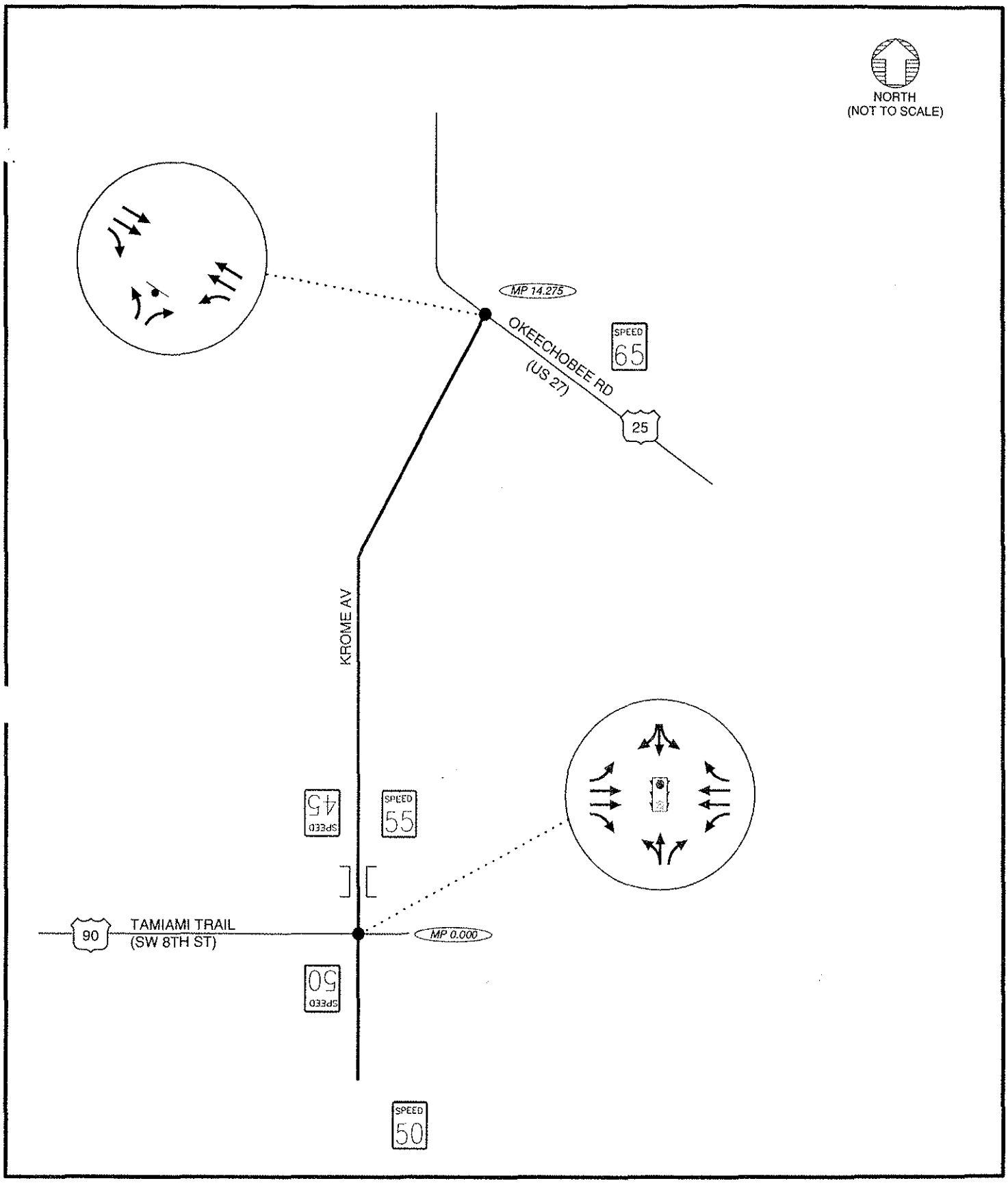
LEGEND

- STOP SIGN
- SPEED 55 SPEED LIMIT
- TRAFFIC SIGNAL
-][BRIDGE
- RAILROAD CROSSING

EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL DEVICES

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 2D

4533FIG (LANE)



LEGEND

- STOP SIGN
- SPEED 55 — SPEED LIMIT
- TRAFFIC SIGNAL
-][BRIDGE
- RAILROAD CROSSING

EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL DEVICES

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 2E

4533FIG (LANE)

Section 3

Traffic Counts

Traffic Counts

Three-day 24-hour continuous counts were collected along Krome Avenue within the study area. The study area was divided into five segments as listed below:

- SW 296th Street (Avocado Drive) to SW 232nd Street (Silver Palm Drive) – 4.052 miles
- SW 232nd Street (Silver Palm Drive) to SW 184th Street (Eureka Drive) – 3.017 miles
- SW 184th Street (Eureka Drive) to SW 88th Street (Kendall Drive) – 6.535 miles
- SW 88th Street (Kendall Drive) to SW 8th Street (Tamiami Trail) – 4.999 miles
- SW 8th Street (Tamiami Trail) to US 27 (Okeechobee Road) – 14.275 miles

The locations and dates are listed below:

- 200 ft north of SW 248th Street – Tuesday March 12th to Thursday March 14th, 2002
- 200 ft north of SW 232nd Street – Tuesday March 12th to Thursday March 14th, 2002
- 200 ft south of Kendall Drive – Wednesday March 12th, Thursday March 14th, and Tuesday March 26th, 2002
- 200 ft south of Tamiami Trail – Tuesday March 12th to Thursday March 14th, 2002
- 1000 ft north of Tamiami Trail – Tuesday March 12th, Wednesday March 13th, and Thursday April 4th, 2002.

These counts are included in the Data Document. Annual Daily Traffic counts for the last seven years (1995-2001) were also gathered and presented in Table 1 .

Table 1: Average Daily Traffic for the years 1995 to 2001

Segment Limit	Average Daily Traffic (ADT)						
	1995*	1996*	1997*	1998*	1999*	2000*	2001**
Avocado Drive (SW 296th Street) to Silver Palm Drive (SW 232nd Street)	7,900	7,700	10,700	10,900	12,000	13,500	14,100
Silver Palm Drive (SW 232nd Street) to Eureka Drive (SW 184th Street)	8,500	8,400	10,900	10,900	12,500	15,100	14,600
Eureka Drive (SW 184th Street) to Kendall Drive (SW 88th Street)	9,000	8,500	10,700	11,400	10,900	11,500	14,500
Kendall Drive (SW 88th Street) to Tamiami Trail (SW 8th Street)	6,500	8,400	10,700	11,400	13,300	16,400	14,800
Tamiami Trail (SW 8th Street) to US 27 (Okeechobee Rd)	6,900	5,500	6,700	7,200	7,600	8,300	9,000

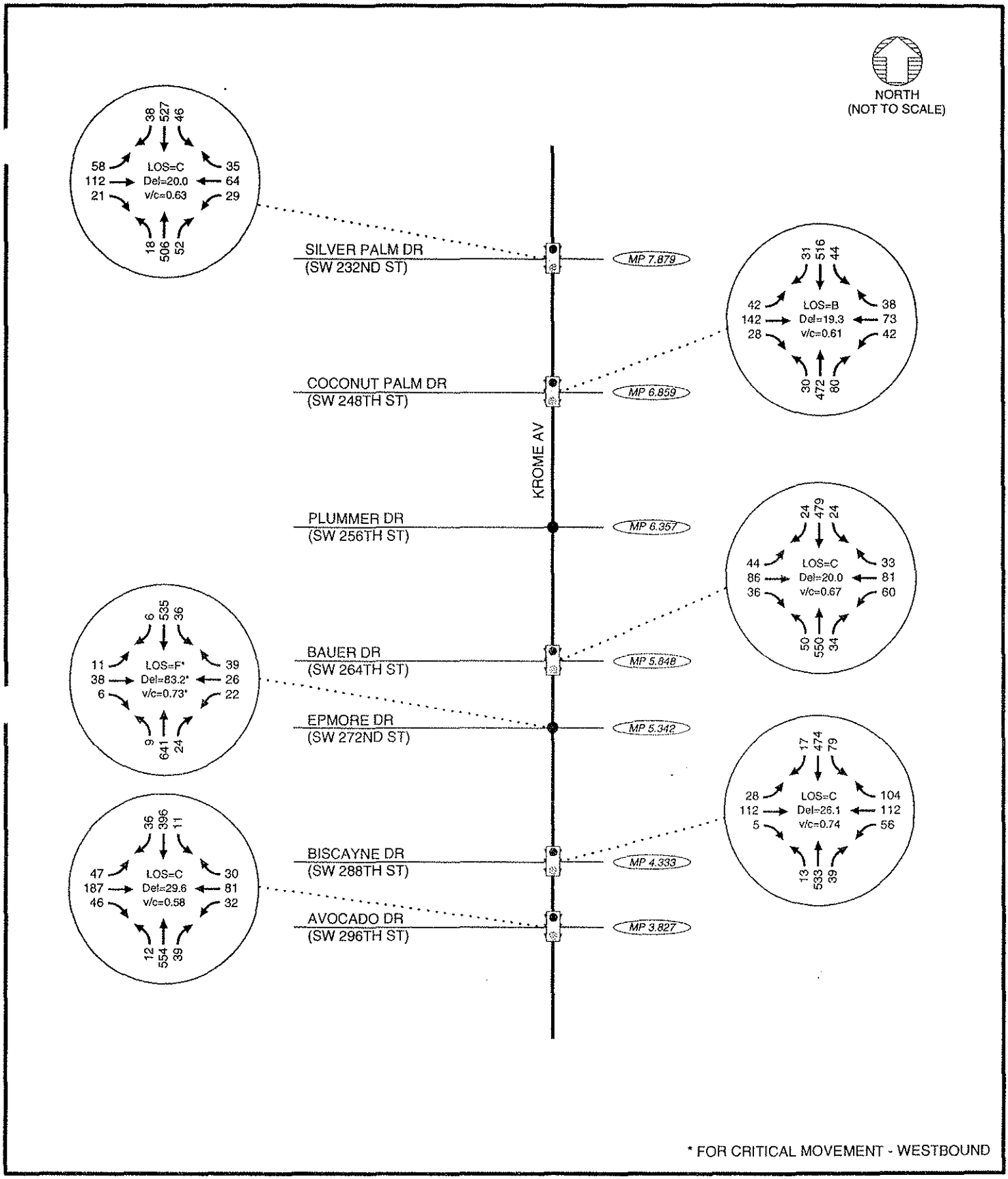
* 1995-2000 ADT: from Year 2000 Florida Traffic CD
** 2001 ADT: provided by FDOT

A comparison of traffic volumes between a.m. and p.m. peak hour periods was conducted based on the three-day 24-hour continuous link counts collected along Krome Avenue within the study area. As shown on Table 2, the total volumes occurring during the a.m. and p.m. time periods are similar. A field review and roadway inventory was also conducted along the study corridor and at the key intersections. The field review indicated that the a.m. period experienced poorer traffic conditions and more traffic congestion. Thus, the peak hour in the a.m. was emphasized in the intersection inventory, operational analysis, and travel time and delay analysis in this project. The traffic factors, such as K_{100} factor and D factor, were developed by analyzing a.m., p.m., and daily conditions

Table 2: Morning and Afternoon Peak Hour Two-Way Volume Comparison7

Segment Limit		Date	Morning Peak Hour		Afternoon Peak Hour	
From	To		7 a.m.-8 a.m.	8 a.m.-9 a.m.	4 p.m.-5 p.m.	5 p.m.-6 p.m.
Avocado Drive (SW 296th Street)	Silver Palm Drive (SW 232nd Street)	Tue 03/12/02	949	864	929	975
		Wed 03/13/02	968	851	949	1047
		Thu 03/14/02	990	892	970	1066
Silver Palm Drive (SW 232nd Street)	Eureka Drive (SW 184th Street)	Tue 03/12/02	1007	979	997	1050
		Wed 03/13/02	1037	914	1028	1162
		Thu 03/14/02	1002	953	1027	1141
Eureka Drive (SW 184th Street)	Kendall Drive (SW 88th Street)	Tue 03/26/02	1125	906	1068	1032
		Wed 03/13/02	1214	1017	1048	1130
		Thu 03/14/02	1233	995	1068	1063
Kendall Drive (SW 88th Street)	Tamiami Trail (SW 8th Street)	Tue 03/12/02	1322	1106	1067	1221
		Wed 03/13/02	1324	1125	1130	1199
		Thu 03/14/02	1293	1045	1135	1088
Tamiami Trail (SW 8th Street)	US 27 (Okeechobee Rd)	Tue 03/12/02	927	882	726	884
		Wed 03/13/02	813	765	781	964
		Thu 04/04/02	977	783	1000	934

The turning movement counts were collected for 10 signalized intersections and four unsignalized intersections within the study area. The four unsignalized intersections are Epmore Drive (SW 264th Street), Grossman Farm Drive (SW 192nd Street), Howard Road (SW 136th Street), and US 27 (SR 25). These four unsignalized intersections were chosen for analysis because field observations revealed possible operation problems and/or these intersections were identified as high crash locations. The counts were conducted on March 26th and 27th, 2002 during the morning peaks hours (7-9 a.m.). The peak hour turning movement counts are presented in Figures 3A-E.



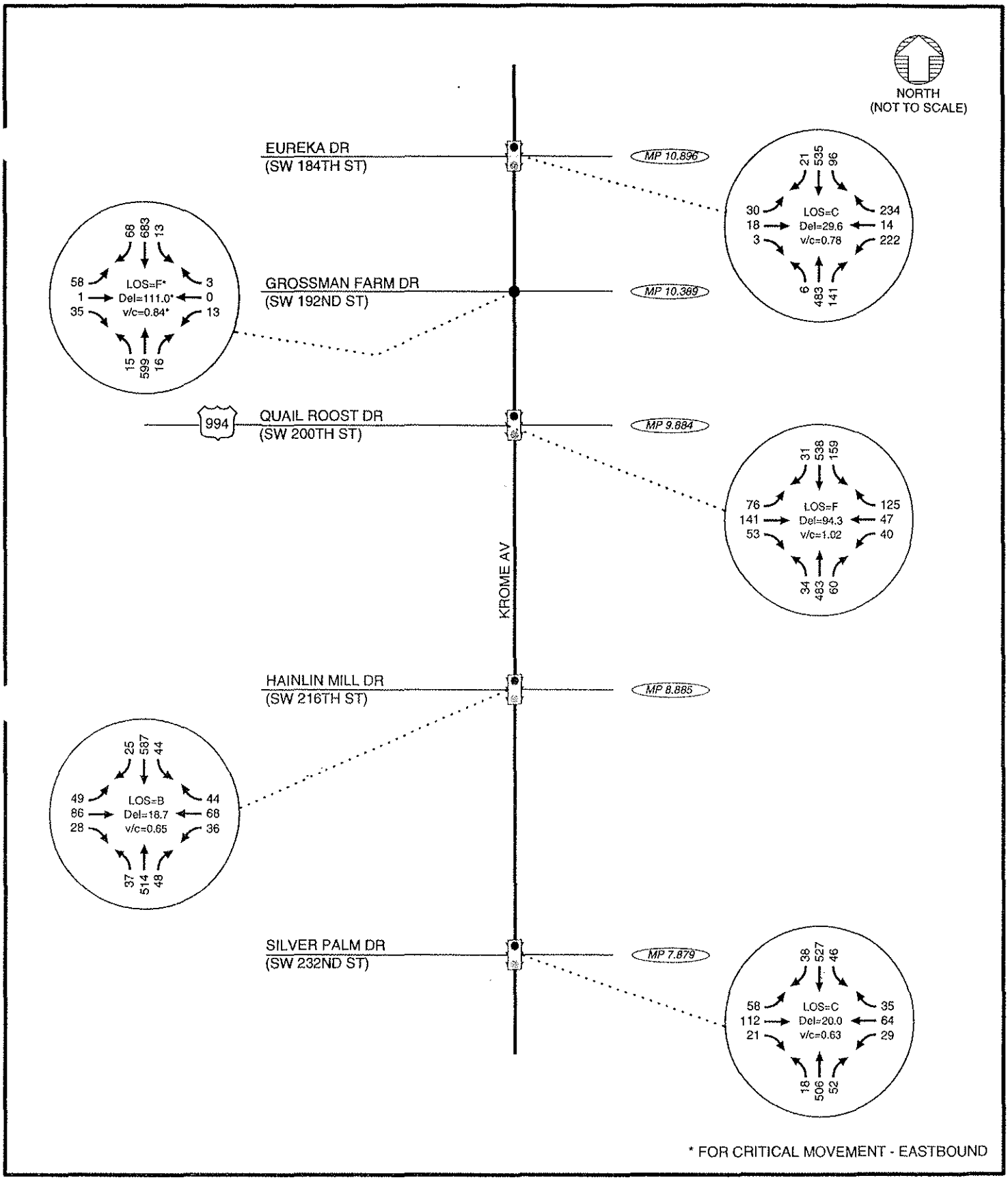
EGEND

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/
CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

EXISTING TURNING MOVEMENT COUNTS AND AM PEAK INTERSECTION LEVEL OF SERVICE

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 3A

4533FIG (LOS)



EGEND

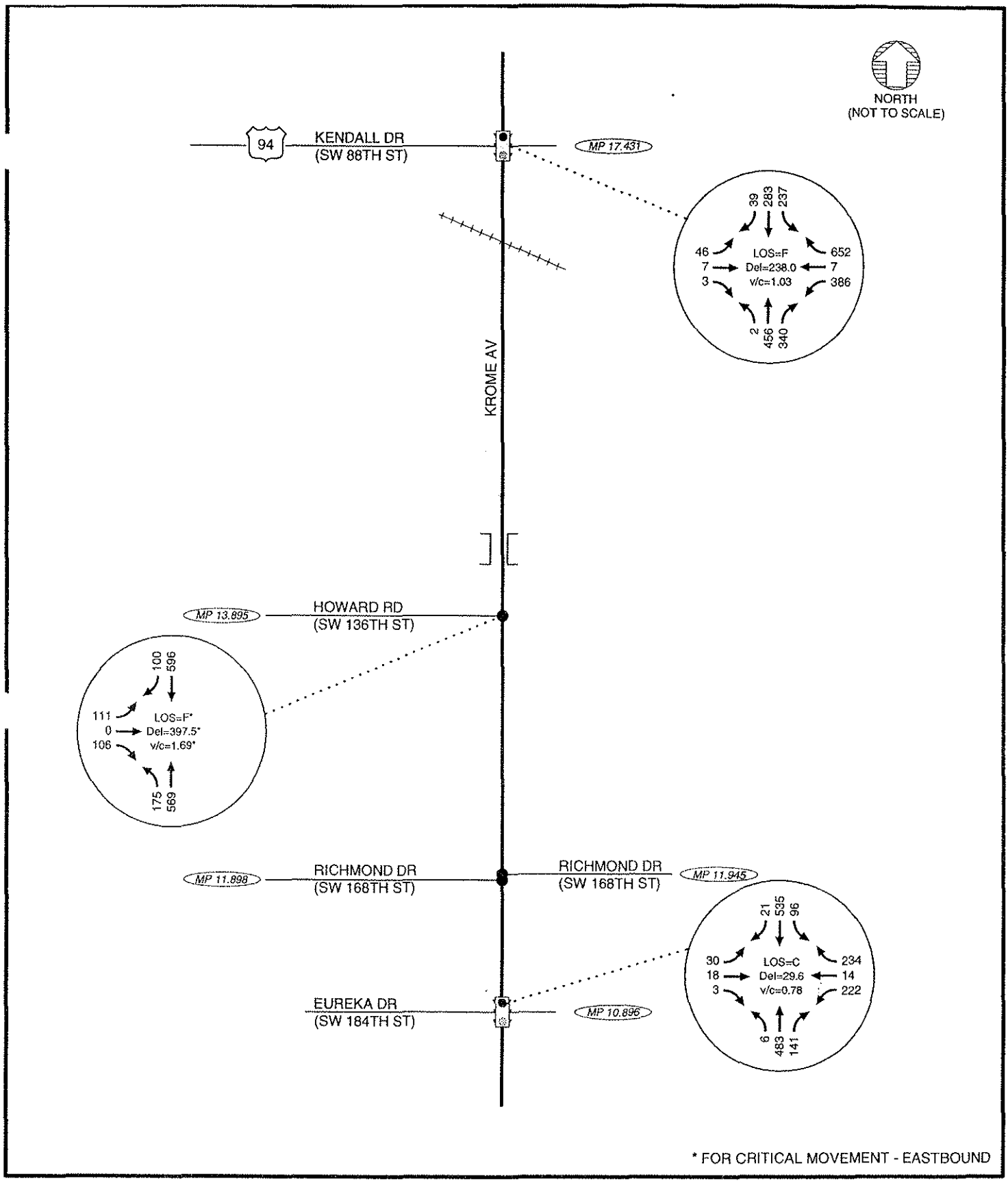
LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

EXISTING TURNING MOVEMENT COUNTS AND AM PEAK INTERSECTION LEVEL OF SERVICE

KROME AVENUE - EXISTING LOS ANALYSIS
MIAMI, FLORIDA
AUGUST 2002

FIGURE 3B

4533FIG (LOS)



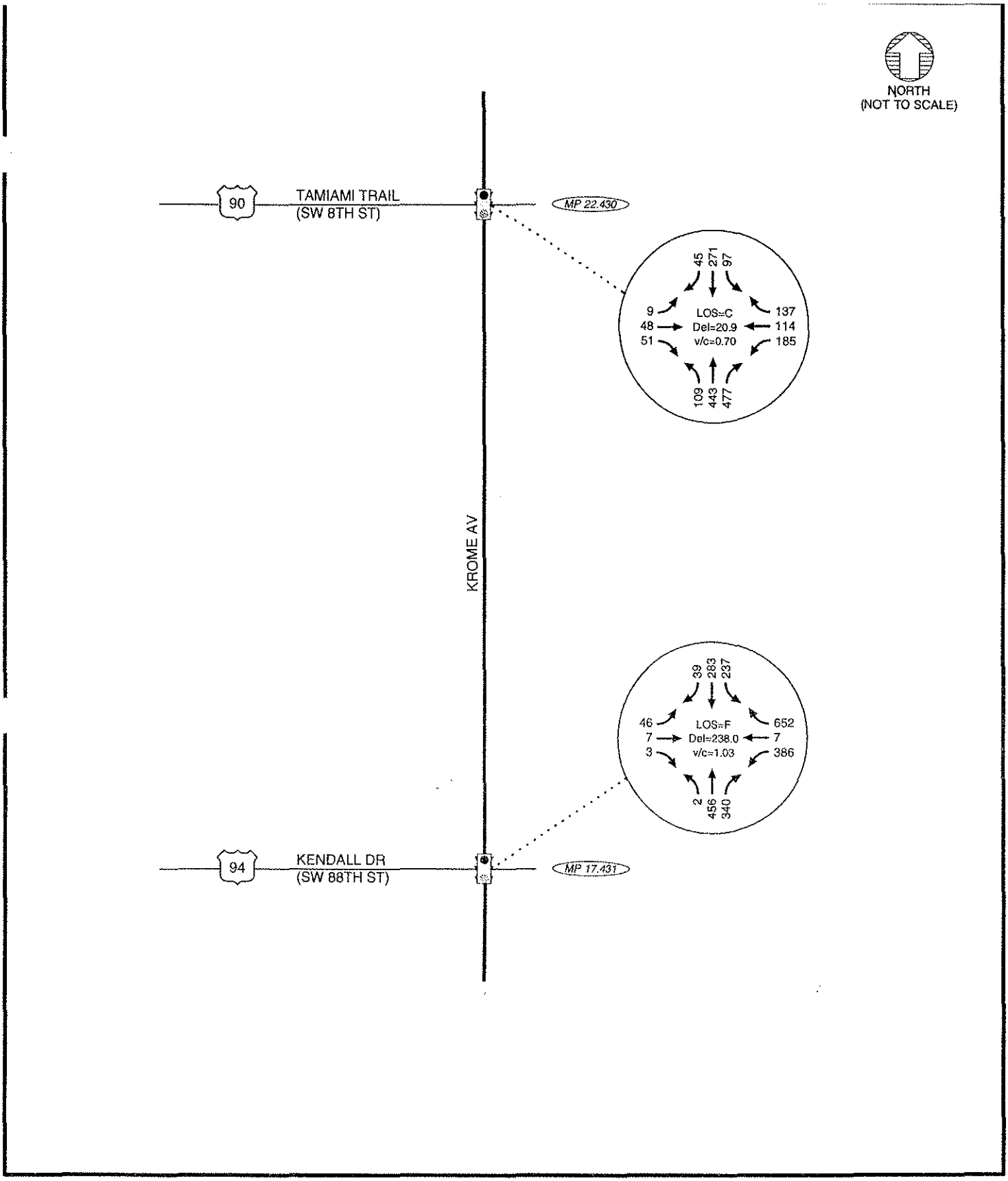
LEGEND

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

EXISTING TURNING MOVEMENT COUNTS AND AM PEAK INTERSECTION LEVEL OF SERVICE

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 3C

4533FIG (LOS)



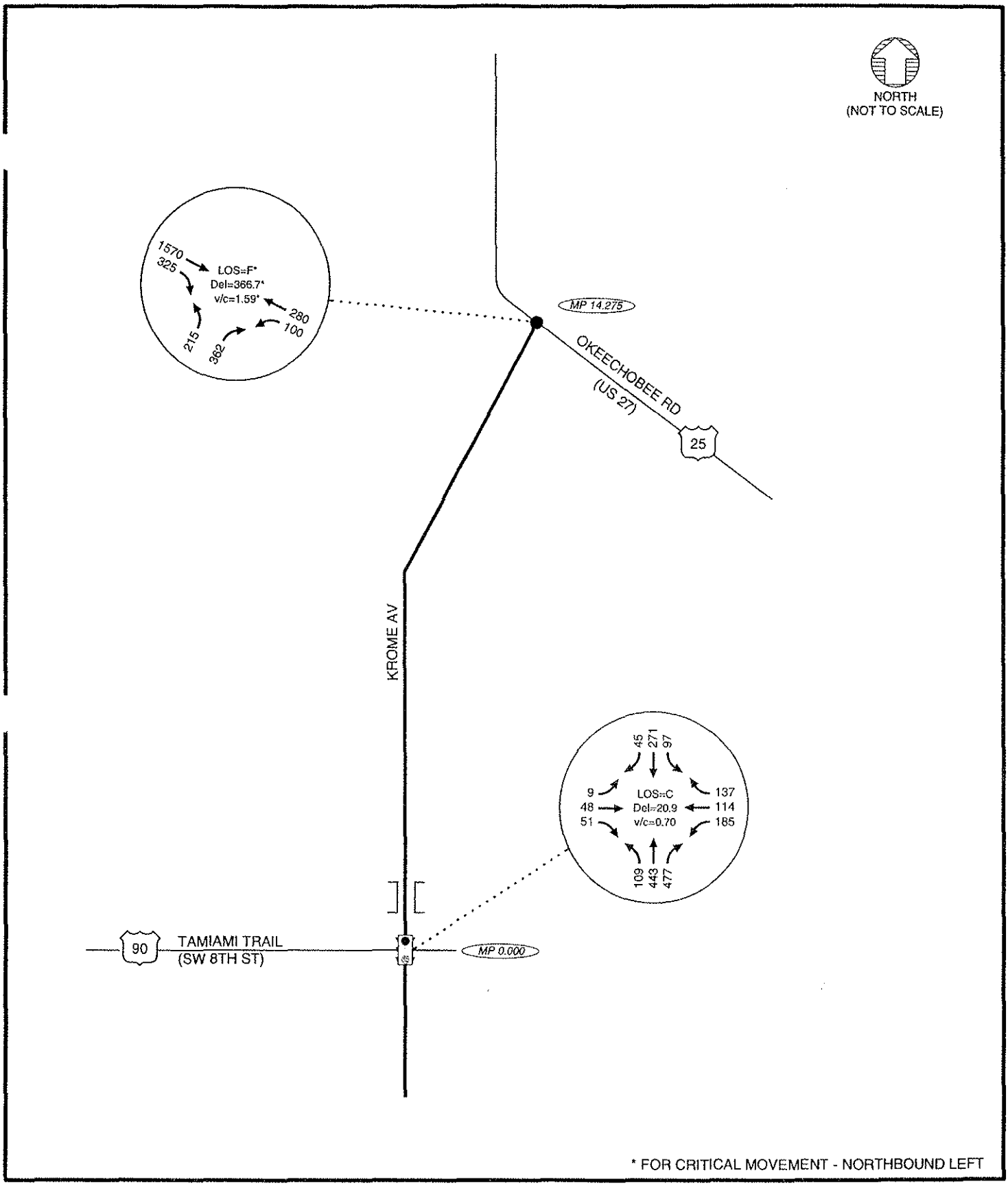
LEGEND

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

EXISTING TURNING MOVEMENT COUNTS AND AM PEAK INTERSECTION LEVEL OF SERVICE

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE *3D*

4533FIG (LOS)



LEGEND

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

EXISTING TURNING MOVEMENT COUNTS AND AM PEAK INTERSECTION LEVEL OF SERVICE

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 3E

4533FIG (LOS)

Section 4

Traffic Characteristics

Traffic Characteristics

Traffic characteristic factors, such as Directional distribution factor (D), planning analysis hour factor (K), and percent heavy vehicles (T), are calculated for the five study segments along Krome Avenue. The calculation of the traffic factors are based upon the 2002 Quality/Level of Service Handbook (*Reference 1*) by using the traffic data collected from the field. The purpose of obtaining the traffic factors is to identify the traffic characteristics of the studied segments. These variables have a significant impact on the calculated volumes in a LOS analysis along an arterial. These variables could also be applied for generalized planning in future analysis. Generalized planning makes extensive use of statewide default values and is intended for broad applications such as statewide analyses, initial problem identification, and future year analyses.

Directional Distribution Factor (D)

The directional distribution factor (D) is the percentage of total, two-way peak hour traffic occurring in the peak direction. A "D" factor is used to identify traffic patterns in an area and is affected by factors such as surrounding land use and roadway capacity (*Reference 1*).

For a conceptual planning analysis, FDOT recommends calculating roadway specific "D" factors since it is a more local and accurate reflection of conditions in the study area. A "D" factor can be estimated from 3-day field counts. The summary of D factors for segments on Krome Avenue is shown in Table 3.

Table 3: Summary of Directional Distribution Factor (D)

Segment Limit		Average D-factor (from field data)	
From	To	7 - 9 AM	4 -6 PM
Avocado Drive (SW 296th Street)	Silver Palm Drive (SW 232nd Street)	0.535 (NB)	0.546 (SB)
Silver Palm Drive (SW 232nd Street)	Eureka Drive (SW 184th Street)	0.508 (NB)	0.512 (SB)
Eureka Drive (SW 184th Street)	Kendall Drive (SW 88th Street)	0.594 (NB)	0.522 (SB)
Kendall Drive (SW 88th Street)	Tamiami Trail (SW 8th Street)	0.667 (NB)	0.550 (SB)
Tamiami Trail (SW 8th Street)	US 27 (Okeechobee Rd)	0.576 (NB)	0.565 (SB)

Planning Analysis Hour Factor (K)

The Planning Analysis Hour Factor, "K_{100}" Factor, is the ratio of the traffic volume in the study hour to the annual average daily traffic (AADT). For planning purposes, the primary planning analysis hour factor used in Florida is the K_{100}, which is the ratio for the 100th highest traffic volume hour of the year to the AADT (*Reference 1*). The K_{100} is used to convert a peak hour volume to an AADT and vice-versa.

The estimation of K_{100} for other segments on Krome Avenue is summarized in Table 4. The study corridor from SW 296th Street to SW 8th Street is within South Miami Dade County. The MOCF for South Miami Dade County is 0.99.

Table 4: Summary of K_{100}-Factor

Segment Limit		K_{100}-factor (from field data)	
From	**To**	**Peak to Daily Ratio**	**K100-factor**
Avocado Drive (SW 296th Street)	Silver Palm Drive (SW 232nd Street)	0.075	0.076
Silver Palm Drive (SW 232nd Street)	Eureka Drive (SW 184th Street)	0.076	0.077
Eureka Drive (SW 184th Street)	Kendall Drive (SW 88th Street)	0.082	0.082
Kendall Drive (SW 88th Street)	Tamiami Trail (SW 8th Street)	0.085	0.086
Tamiami Trail (SW 8th Street)	US 27 (Okeechobee Rd)	0.098	0.100

The minimum acceptable "K_{100}" factor for FDOT is 9.0% for Two-Lane Highways in Rural Developed areas. Most of the "K_{100}" factors of segments on Krome Avenue are below the FDOT minimum "K_{100}" factor. Since peak hour volume is used for the analysis, there is no need to increase the "K_{100}" factor to the minimum acceptable value for each roadway segment. The minimum 9% "K_{100}" factor is suggested for future analysis such as calculations of Design Hour Volume.

Percentage of Trucks (T)

The T-factor is a Federal Highway Administration (FHWA) vehicle classification scheme, in which vehicles with more than four wheels (or classification group 4 or higher) are considered heavy vehicles (*Reference 1*). The percentage of these heavy vehicles in a given hour is frequently referred to as a truck factor (T). Truck factor (T) is defined as the percentage of truck traffic measured during the analysis period. The following combined directional truck factors were calculated based on a.m. peak hour vehicle classification counts and daily peak hour vehicle classification counts. Buses are considered heavy vehicles. As an example, the calculation of morning peak hour "T" factor and the daily "T" factor for the segment from SW 8th Street/ Tamiami Trail to US 27/Okeechobee RD is shown in Table 5 and Table 6, respectively.

The morning peak hour truck factor is a function of the total number of trucks divided by the total volume. It is not the simple average of the truck factors (shown under column "AM Peak Hour Truck Percentage") for each day listed above.

Table 5: Morning Peak Hour Percentage of Trucks for the Segment SW 8th Street/Tamiami Trail to US 27/Okeechobee Rd

Date	Morning Peak Hour	Number of Trucks	Peak Hour Volume	Morning Peak Hour Truck Percentage
03/12/02 Tuesday	7 - 8 a.m.	184	927	0.198
03/13/02 Wednesday	7 - 8 a.m.	173	813	0.213
04/04/02 Thursday	7 - 8 a.m.	196	977	0.201
Total		**553**	**2717**	**0.204**

AM Peak Hour Truck Percentage = 553 / 2717 = 0.204

Table 6: Daily Percentage of Trucks (T) for the Segment SW 8th Street/Tamiami Trail to US 27/Okeechobee RD

Date	Number of Trucks	Daily Volume	Daily Truck Percentage
03/12/02 Tuesday	2618	9767	0.268
03/13/02 Wednesday	2794	9394	0.297
04/4/02 Thursday	2754	10402	0.265
Total	8166	29563	**0.276**

Daily Truck Percentage = 8166 / 29563 = 0.276

The average daily truck factor is a function of the total number of trucks divided by the total volume. The estimation of morning peak hour "T" factor and daily "T" factor for each segment on Krome Avenue is summarized in Table 7.

Table 7: Summary of Percentage of Truck (T)

Segment Limit		Truck Factor (from field data)	
From	To	Morning T-factor	Daily T-factor
Avocado Drive (SW 296th Street)	Silver Palm Drive (SW 232nd Street)	0.281	0.270
Silver Palm Drive (SW 232nd Street)	Eureka Drive (SW 184th Street)	0.314	0.319
Eureka Drive (SW 184th Street)	Kendall Drive (SW 88th Street)	0.260	0.262
Kendall Drive (SW 88th Street)	Tamiami Trail (SW 8th Street)	0.334	0.315
Tamiami Trail (SW 8th Street)	US 27 (Okeechobee Rd)	0.204	0.276

Section 5

Intersection Inventory

Intersection Inventory

A field review was conducted during the morning peak period to assess traffic operations at four major intersections of the study corridor. These intersections are:

- Eureka Drive/ SW 184th Street
- Kendall Drive/ SW 88th Street
- Tamiami Trail/ SW 8th Street
- US 27/ Okeechobee Road

The level of detail for the field review is similar to that done in a Traffic Operations "Qualitative Assessment" study. The FDOT Field Observation Report for a Level of Service Study was completed for each intersection. The field study included a physical as well as operational examination of the intersection. The physical examination of the intersection consisted of an inventory of geometry, traffic control devices, sight distance, pedestrian crosswalks, pavement width, horizontal and vertical alignments, etc. The operational examination included observations of unusual traffic flow problems, traffic conflict patterns, excessive vehicle delay, pedestrian or bicycle activities, etc.

Krome Avenue/Eureka Drive (SW 184th Avenue)

SR 997/Krome Avenue and SW 184th Street/Eureka Drive intersect to form a four-legged intersection. The existing lane configurations and speed limits in the vicinity of the intersection are shown in Figure 2B. Krome Avenue has a left turn lane and a shared through and right turn lane for the north and south approaches to the intersection. SW 184th Street consists of one lane on the eastbound approach, while the westbound approach has a right-turn lane as well as a shared through and left-turn lane. The study location is on flat terrain and there are no sight distance restrictions. Figure 4 shows the northbound approach on Krome Avenue to the intersection, and Figure 5 shows the southbound approach to the intersection.

The intersection is also located within a rural developed area. The area to the north of the intersection is vacant and consists of farmlands. A house is located in the southeast quadrant of the intersection and has a driveway on Krome Avenue. A Gas station is located in the southwest quadrant of the intersection, with a driveway on both Krome Avenue as well as Eureka Drive.

Traffic operations were observed at the study intersection on Tuesday, April 2, 2002 from 7:00 to 9:00 a.m. The following is a summary of the observations made in the field:

Operational observations:

- No obstructions were identified that blocked the driver's view of opposing vehicles.
- Minor delays were observed and vehicles did not experience any difficulty to progress through the intersection.
- No cycle failures were observed at the intersection.

General observations:

- The maximum queue observed on Krome Avenue for the southbound approach was approximately eight vehicles, while up to six vehicles was observed for the northbound approach.
- The maximum queue observed on SW 184th Street was six vehicles on the westbound approach, while minimal queues were observed for the eastbound leg.
- A high number of trucks were observed at the intersection. These trucks mainly traveled on Krome Avenue.
- The signal phases and timing at Krome Avenue/Eureka Drive intersection are as follows:

Phase	North-South Left	North-South	East-West
Green	7	51	35
Yellow	3	4	4
Red	0	1	1

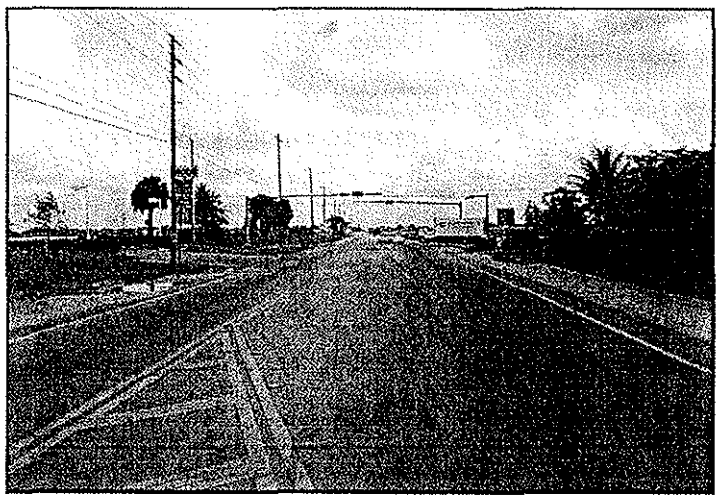


Figure 4: Northbound approach at Eureka Drive/SW 184th Street

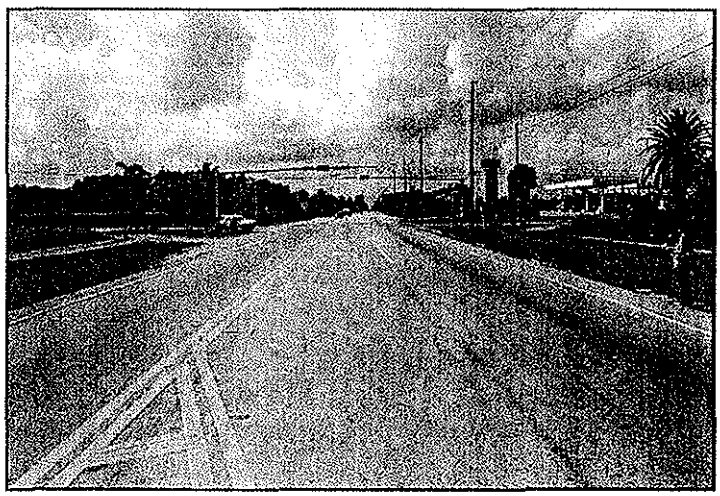


Figure 5: Southbound approach at Eureka Drive/SW 184th Street

Krome Avenue/Kendall Drive (SW 88th Avenue)

SR 997/Krome Avenue and SW 88th Street/Kendall Drive intersect to form a four-legged intersection. The existing lane configurations and speed limits in the vicinity of the intersection are shown in Figure 2C. Both the northbound and southbound approaches of Krome Avenue have an exclusive left-turn lane, one through lane, and a right turn lane. The westbound Kendall Drive approach has a left-and-through shared lane plus an exclusive right turn lane, whereas the eastbound approach has one shared lane for left, through, and right turn movements. The study location is on flat terrain and there are no sight distance restrictions. Figure 6 shows the northbound approach on Krome Avenue, and Figure 7 shows the southbound approach to the intersection.

The intersection is also located within a rural developed area. There are no developments at the intersection, and all four quadrants of the intersection are vacant. This area is a transitioning area, which is expected to be fully developed within the next 20 years.

Traffic operations were observed at the study intersection on Tuesday, April 2nd 2002 from 7:00 to 9:00 a.m. The following is a summary of the observations made in the field:

Operational observations:

- No obstructions were identified that blocked the driver's view of opposing vehicles.
- No abnormal traffic operation or driving behavior was observed.

General observations:

- The maximum queue observed on Krome Avenue was approximately eight vehicles for the northbound through lane.
- The maximum queue observed on the east approach on Kendall Drive was 13 vehicles for the shared through- and left-turn lane and 11 vehicles for the right-turn lane.
- The major movement of traffic was westbound vehicles making a right turn to go north on Kendall Drive.
- A high number of trucks were observed using the intersection, and almost all of the vehicles traveling on the western leg of Kendall Drive were trucks.
- The signal phases and timing at Krome Avenue/Kendall Drive intersection are as follows:

Phase	North-South	South Left	Eastbound	Westbound
Green	50	5-7	7-12	7-20
Yellow	4.3	3	4	4
Red	1	0	1	1

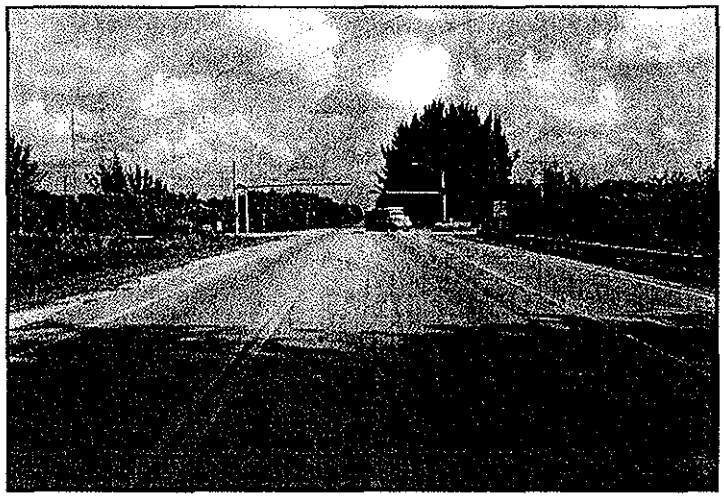


Figure 6: Northbound approach at Kendall Drive/SW 88th Street

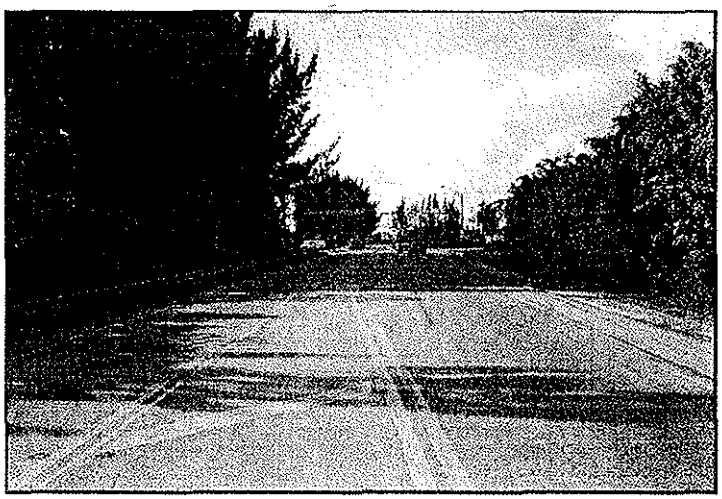


Figure 7: Southbound approach at Kendall Drive/SW 88th Street

Krome Avenue/Tamiami Trail (SW 8th Avenue)

SR 997/Krome Avenue and SW 8th Street/Tamiami Trail intersect to form a four-legged intersection. The existing lane configurations and speed limits in the vicinity of the intersection are shown in Figure 2D. Krome Avenue has one lane for the southbound approach, whereas the northbound approach consists of a shared through- and left-turn lane. Tamiami Trail consists of two through lanes as well as a left- and right-turn lane at the intersection. The study location is on flat terrain and there are no sight distance restrictions. Figure 8 shows the northbound approach on Krome Avenue, whereas Figure 9 shows the southbound approach to the intersection.

The intersection is located within a rural developed area. A canal runs along the northern side of Tamiami Trail, with a vacant area on both the northwest- and northeast corners of the intersection. A gas station with truck stop is located at the southeast corner of the intersection, with driveways on both Krome Avenue and Tamiami Trail. A tobacco shop is located on the southwest corner of the intersection, with a driveway on Krome Avenue. A truck service center (although slightly offset

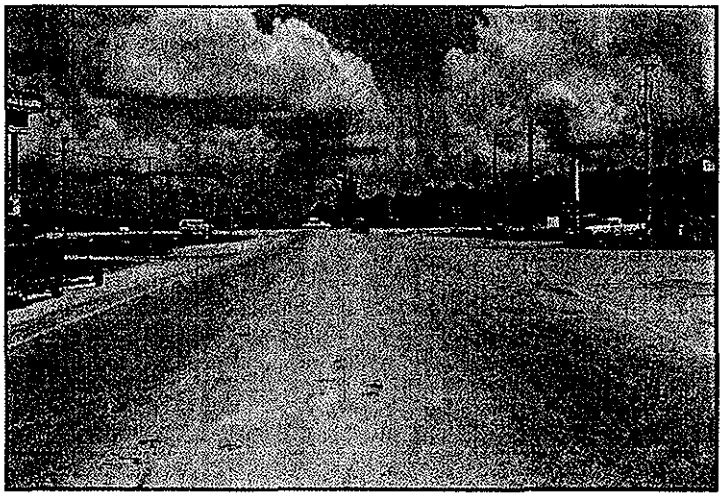


Figure 8: Northbound approach at Tamiami Trail/SW 8th Street

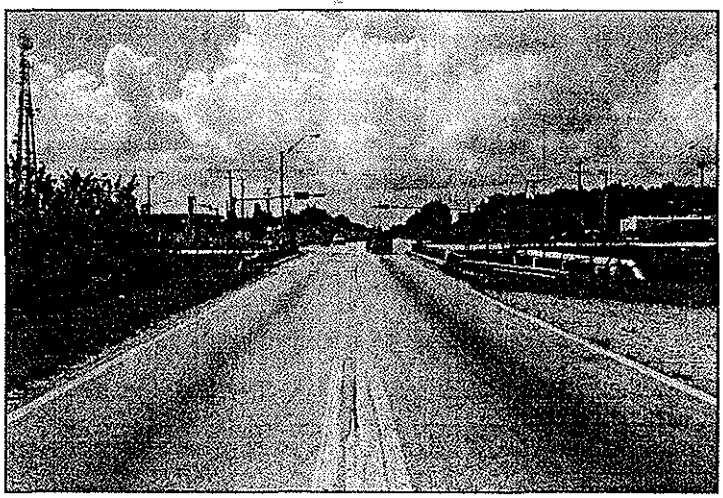


Figure 9: Southbound approach at Tamiami Trail/SW 8th Street

from the intersection) is also located on the southwest corner of the intersection, also with a driveway on Krome Avenue.

Traffic operations were observed at the study intersection on Thursday, March 28th, 2002 from 7:00 a.m. to 9:00 a.m. The following is a summary of the observations made in the field:

Operational observations:

- No obstructions were identified that blocked the driver's view of opposing vehicles.
- Vehicles traveling northbound waiting to make a left turn frequently occupied the shared left- and through lane. This situation caused the northbound through vehicles to bypass the left-turn vehicles (often large trucks) by using the right turn lane to progress through the intersection. This maneuver created unsafe conditions for both northbound right-turning vehicles as well as southbound left-turning vehicles. The southbound left-turning vehicles are only able to notice these through vehicles while they are performing the left turn at the time the through vehicles accelerate to move around the northbound left turning vehicle.

- Trucks making a right turn from the eastbound and westbound approaches on SW 8th Street have to do so from the adjacent through lane in order to successfully enter Krome Avenue. This maneuver caused unsafe conditions at the intersection.
- Vehicles traveling southbound were often delayed by southbound vehicles waiting to make a left turn at the intersection.

General observations:

- The maximum queue observed on Krome Avenue was approximately 21 vehicles for the northbound approach, while up to 29 vehicles was observed for the southbound approach.
- Cycle failures were observed for both approaches on Krome Avenue.
- Minimal queues were observed on Tamiami Trail.
- A high number of trucks were observed at the intersection. These trucks mainly used the driveway on Krome Avenue to access the gas station and truck stop.
- The signal phases and timing at Krome Avenue/Tamiami Trail intersection are as follows:

Phase	North-South	East-West Left	East West
Green	48.5	5	21
Yellow	4	3	5
Red	2	0	1.5

Krome Avenue/Okeechobee Rd (US27)

SR 997/Krome Avenue and Okeechobee Rd/US27 intersect to form a three-legged intersection. The existing lane configurations and speed limits in the vicinity of the intersection are shown in Figure 2D. Krome Avenue has a left and right turn lane at the intersection. Okeechobee Rd/US27 consists of two through lanes as well as a left-turn lane for the westbound direction, and a right turn lane for the eastbound direction. The study location is on flat terrain and there are no sight distance restrictions. Figure 10 shows the northbound approach on Krome Avenue to the intersection, while Figure 11 shows the intersection from the north.

The intersection is located within a rural area. All of the quadrants of the intersection are vacant, and trees outline the side of the roadways.

Traffic operations were observed at the study intersection on Tuesday, May 6th, 2002 from 7:00 to 9:00 a.m. The following is a summary of the observations made in the field:

Operational observations:

- No obstructions were identified that blocked the driver's view of opposing vehicles.
- Vehicles making a left turn from Krome Avenue onto Okeechobee Road often experienced delay. It frequently happened that a platoon of vehicles with a truck at the front arrived at the intersection. These vehicles were subsequently delayed because of the difficulty the trucks experienced to progress through the intersection.

General observations:

- The maximum queue observed on Krome Avenue for the northbound approach was approximately 14 vehicles.
- A high number of trucks were observed at the intersection.

Figure 10: Northbound approach at US 27/Okeechobee Road

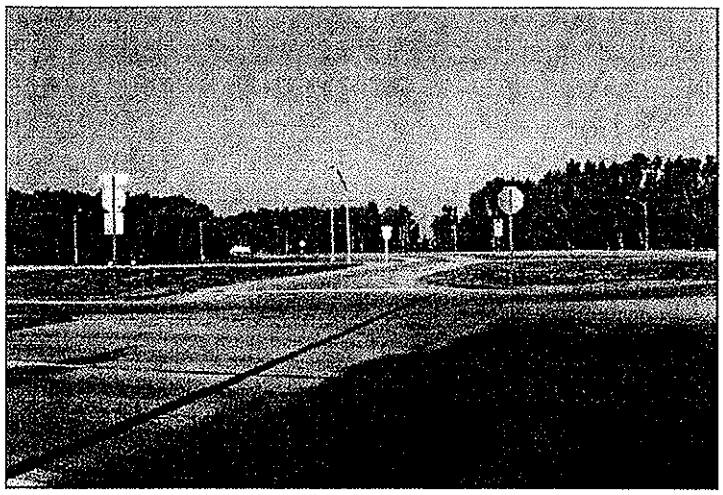


Figure 11: View from North at US 27/Okeechobee Road

Section 6

Travel Time Runs

Travel Time Runs

A travel time and delay study for Krome Avenue was conducted to evaluate traffic movement along the study corridor and the extent of normal delay caused by traffic control devices and turning vehicles. With the results, the arterial Level-of-Service based on average travel speeds was determined.

Travel time and delay data was collected following the Florida Manual on Uniform Traffic Studies (MUTS) procedures for travel time and delay studies. The data was collected by Kittelson & Associates, Inc. staff during the weekday a.m. peak hour between the dates of April 16th and May 7th, 2002. Six travel time and delay runs were made in both the northbound and southbound directions between the hours of 7:00 a.m. and 9:00 a.m. between the Krome Avenue/US 27 and Krome Avenue/Avocado Drive intersections. Based on the number of travel time and delay runs and the range in results, the reported average running speeds have a 95 percent confidence level with an error of +/- 1 mph. The field data collection sheets and data summary sheets are presented in the Data Document.

Results for the travel time and delay study are summarized by segment and section. Results for the northbound and southbound directions are reported separately in Table 8 and Table 9, respectively. For each reported segment and section, by direction, the reported data is summarized below.

- **Average Travel Time** is the total elapsed time spent driving a specified distance.
- **Average Travel Speed** is the average speed over a distance (it is effected by the amount of time experienced in delay).
- **Level of Service** reported is based on the Average Travel Speed for Class I Urban Streets and Class I Two-Lane Highways as appropriate.

Segments between Avocado Drive and Eureka Drive were evaluated as Class I Urban Streets based on Exhibits 10-3 and 10-4 of the 2000 Highway Capacity Manual. It should be noted that Section 150 has both Class I Urban Street and Class I Two-Lane Highway segments. Arterial Level-of-Service for Section 150 was therefore summarized in two parts and an arterial Level-of-Service could not be provided for the whole corridor in its entirety.

Class I Urban Streets function as principal arterials and have high-speed designs meaning signal spacing ranges from 0.5-2 signals per mile, speed limits are in the 45-55 mph range, there is very little pedestrian activity, and low density roadside development. Class I Two-Lane Highways are two-lane highways on which motorists expect to travel at relatively high speeds and most often serve long-distance trips or provide connecting links between facilities that serve long-distance trips (see 12-12 of the 2000 HCM).

- **Delay** is the elapsed time spent driving at a speed less than 5 mph.

The only delay observed during the study was delay caused by stop signs (Krome Avenue northbound at US 27), traffic signals, and left-turning vehicles. The delay study was not affected by any accidents or construction during the data collection times.

- **Average Running Speed** is the average speed while the vehicle is in motion (does not include delay time).
- **Running Time** is the elapsed travel time, excluding the time spent in delay, spent driving a distance.
- **Average posted speeds** are the average segment and section signed speed limits based on distance.

The posted speed limit was not exceeded during the travel time runs despite traffic flow frequently exceeding the posted speed.

Table 8: Northbound Travel Time and Delay Results

Roadway limits	Average Travel Time	Average Travel Speed (mph)	LOS	Average Delay	Average Running Time	Average Running Speed (mph)	Average Posted Speed (mph)
Avocado Dr to south of Silver Palm Dr	0:06:29	37.5	B (1)	0:00:40	0:05:49	41.8	45.0
Silver Palm Dr to south of Eureka Dr	0:05:43	31.4	C (1)	0:01:03	0:04:40	44.1	45.0
Eureka Dr to south of Kendall Dr	0:08:48	44.6	D (2)	0:00:13	0:08:35	45.7	47.1
Kendall Dr to south of Tamiami Trail	0:07:02	42.6	D (2)	0:00:30	0:06:32	45.9	47.3
Tamiami Trail to US 27	0:17:15	49.7	C (2)	0:00:56	0:16:19	52.5	55.0
Section 150 - Urban Street (Avocado Drive to south of Eureka Drive)	0:12:12	34.8	B (1)	0:01:43	0:10:29	40.4	45.0
Section 150 - Two-Lane Hwy (Eureka Drive to south of Tamiami Trail)	0:15:50	43.7	D (2)	0:00:43	0:15:07	45.8	47.2
Section 070	0:17:15	49.7	C (2)	0:00:56	0:16:19	52.5	55.0
Total Study Length (Avocado Drive to US 27)	0:45:17	43.5	NA	0:03:22	0:41:55	47.1	50.1

(1) based on HCM 2000 LOS Criteria for Class I Urban Streets (Exhibit 15-2)
(2) based on HCM 2000 LOS Criteria for Two-Lane Highways in Class I (Exhibit 20-3)

Table 9: Southbound Travel Time and Delay Results

Roadway limits	Average Travel Time	Average Travel Speed (mph)	LOS	Average Delay	Average Running Time	Average Running Speed (mph)	Average Posted Speed (mph)
North of Avocado Dr to Silver Palm Dr	0:06:00	40.5	B (1)	0:00:15	0:05:45	42.3	45.0
North of Silver Palm Dr to Eureka Dr	0:04:31	39.7	B (1)	0:00:18	0:04:13	42.5	45.0
North of Eureka Dr to Kendall Dr	0:08:51	44.3	D (2)	0:00:07	0:08:44	44.8	47.1
North of Kendall Dr to Tamiami Trail	0:06:23	47.0	C (2)	0:00:13	0:06:10	48.6	47.3
Tamiami Trail to US 27	0:16:34	51.7	B (2)	0:00:46	0:15:48	54.2	55.0
Section 150 - Urban Street (North of Avocado Drive to Eureka Drive)	0:10:31	40.3	B (1)	0:00:33	0:09:58	42.6	45.0
Section 150 - Two-Lane Hwy (North of Eureka Drive to Tamiami Trail)	0:15:14	45.4	C (2)	0:00:20	0:14:54	46.4	47.2
Section 070	0:16:34	51.7	B (2)	0:00:46	0:15:48	54.2	55.0
Total Study Length (Avocado Drive to US 27)	0:42:19	46.6	NA	0:01:39	0:40:40	48.5	50.1

(1) based on HCM 2000 LOS Criteria for Class I Urban Streets (Exhibit 15-2)
(2) based on HCM 2000 LOS Criteria for Two-Lane Highways in Class I (Exhibit 20-3)

As shown in Table 8, the average weekday a.m. peak hour travel time for the study corridor in the northbound direction is 45 minutes and 17 seconds. The time in delay averages three minutes and 22 seconds (approximately 7.5% of the total travel time). The average running speed (speed while not in delay) is 47.1 mph and the average posted speed is 50.1 mph. For each segment of the study corridor, the average running speed is within 3.2 mph of the posted speed limit.

As shown in Table 9, the average weekday a.m. peak hour travel time for the study corridor in the southbound direction is less than the northbound direction at 42 minutes and 19 seconds, because southbound is the off-peak direction. The time in delay averages one minute and 39 seconds (approximately 4% of the total travel time), which also is less than the northbound direction. The average running speed (speed while not in delay) is 48.5 mph and the average posted speed is 50.1 mph. For each segment of the study corridor, the average running speed is within 2.7 mph of the posted speed limit.

Travel in the southbound direction takes less time from end-to-end, has less delay, and has a faster running speed than the northbound direction. The average running speeds in the southbound direction are also closer to the posted speed limits. Regardless, travelers in both directions experience relatively low delay compared to the total travel time and are able to travel near the posted speed limit. The reported Level-of-Service does not consider posted speed limits, only the desired mobility for the segment functional classification and design.

Section 7

Crash Data

Crash Data

The crash data for the six years (1995 to 2000) was obtained from the FDOT for analysis. Both spot and segment Actual Crash Rates were found. These rates were compared with Florida Critical Crash Rates to determine the Safety Ratios. Spots or segments with a safety ratio of greater than 1.0 are considered high crash locations. In addition, fatal crashes (up to March 2002) were provided by FDOT for determining fatal crash rates and fatality rates for the last seven years, 1995 to 2001.

Table 10: Summary of Crashes by Categories

	1995	1996	1997	1998	1999	2000	Total	Percentage
Harmful Event								
Rear End	32	48	64	78	77	73	372	30.4%
Angle	20	31	33	32	43	40	199	16.3%
Tree/Shrub	7	20	23	18	19	24	111	9.1%
Sideswipe	16	10	14	31	13	21	105	8.6%
Left Turn	15	14	19	16	18	23	105	8.6%
Ran into Ditch/Culvert	4	9	5	8	13	10	49	4.0%
Overturn	4	6	6	9	12	9	46	3.8%
Head on	2	6	9	4	13	9	43	3.5%
Pole	4	3	4	5	3	4	23	1.9%
Moveable Object on Road	1	1	3	3	6	3	17	1.4%
Right Turn	2	0	2	6	1	2	13	1.1%
Ran off Road into Water	2	2	0	1	6	6	17	1.4%
Guardrail	2	0	2	3	3	4	14	1.1%
Pedestrian	1	2	0	2	2	1	8	0.7%
Weather								
Dry	56	86	81	113	134	127	597	48.9%
Cloudy	50	55	79	90	81	93	448	36.7%
Rain	13	19	32	27	29	30	150	12.3%
Road Surface								
Dry	97	129	151	187	206	200	970	79.4%
Wet	22	34	40	42	38	49	225	18.4%
Slippery	2	0	2	3	2	2	11	0.9%
Site Location								
Not at Intersection, RR Xing or Bridge	54	73	96	131	127	136	617	50.5%
At Intersection	51	71	80	77	95	92	466	38.1%
Driveway Access	8	7	10	17	16	16	74	6.1%
Influenced by Intersection	7	9	7	6	10	10	49	4.0%
R/R Crossing	0	1	0	2	1	1	5	0.4%
Entrance Ramp	1	1	0	0	2	0	4	0.3%
Exit Ramp	1	1	2	0	0	0	4	0.3%
Bridge	0	1	0	0	1	1	3	0.2%

	1995	1996	1997	1998	1999	2000	Total	Percentage
Lighting								
Daylight	72	110	135	166	175	161	819	67.0%
Dark (no street light)	31	36	35	33	41	63	239	19.6%
Dark (street light)	12	10	15	14	15	19	85	7.0%
Severity								
Fatal	3	3	2	3	5	8	24	2.0%
Injury	73	104	108	117	147	144	693	56.7%
Property Damage Only	46	57	85	113	100	104	505	41.3%
Total	**122**	**164**	**195**	**233**	**252**	**256**	**1222**	**100%**

Methodology

The **Actual Crash Rate** is a function of segment length times the annual number of vehicles in relation to the number of crashes, as shown below:

$$\text{Actual Crash Rate} = \frac{\text{Number of crashes in year (within limits specified)}}{\text{(Number of vehicles (ADT) x 365 x length in miles) / 1,000,000}}$$

$$= \text{Crashes per million vehicle miles}$$

Critical Crash Rate is a function of segment length, traffic volume, and the average rate for the category of highway being testing. The critical crash rate for segments can be determined using the following equation:

$$C = R + K\sqrt{\frac{R}{M}} - \frac{1}{2M}$$

Where: C = Critical crash rate for segments

R = Average crash rate for the category of highway being testing (crashes per million vehicle miles)

M = Average vehicle exposure for one year at the location (million vehicle miles)

K = Constant (1.645 rural, 3.291 urban)

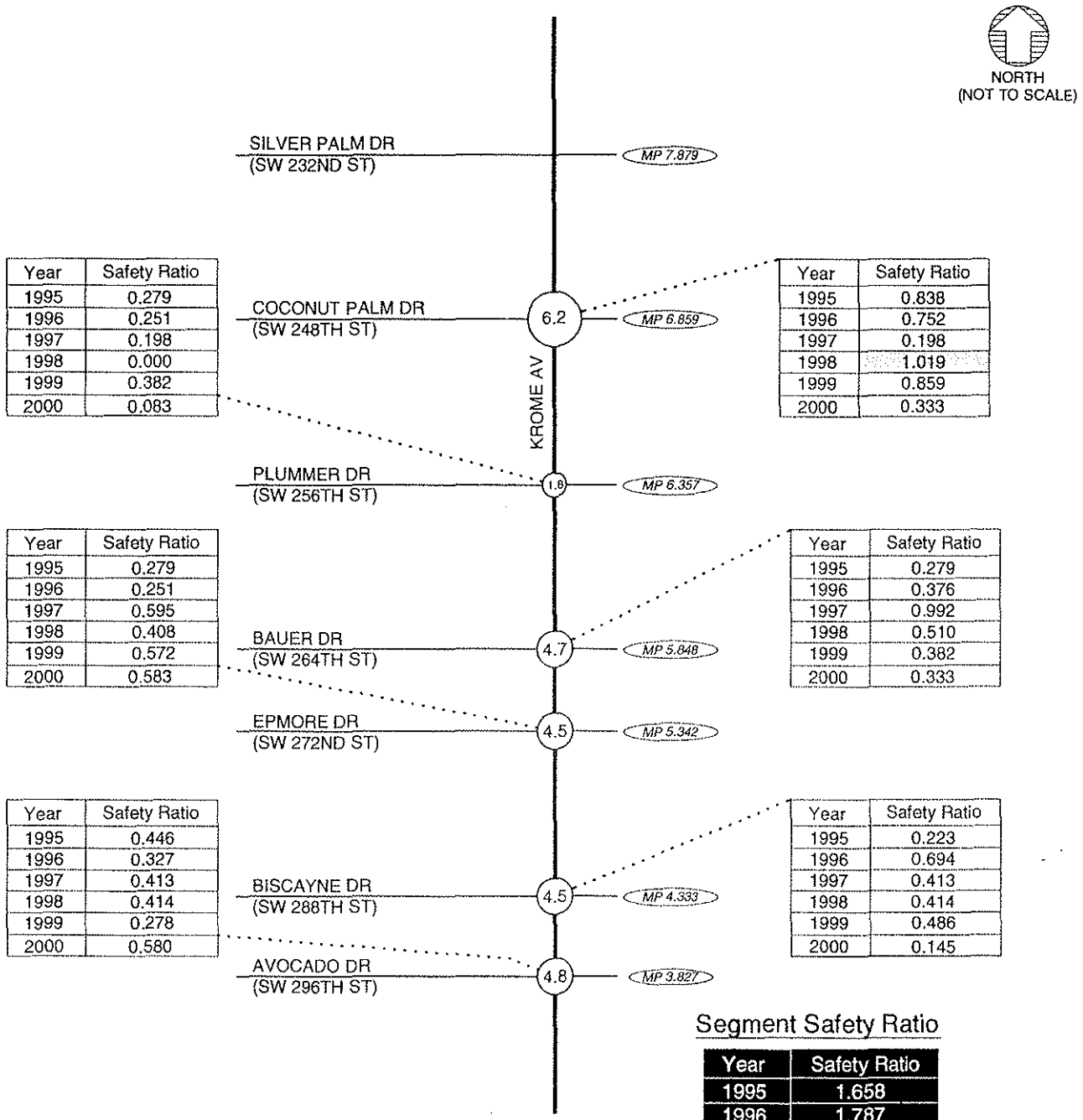
The critical crash rate for spots can be determined using the following equation:

$$H = A + K\sqrt{\frac{A}{V}} - \frac{1}{2V}$$

Where: H = Critical crash rate for spots

from Avocado Drive/SW 296th Street to just south of (not including) Silver Palm Drive/SW 232nd Street. The next segment is from Silver Palm Drive to south of Eureka Drive/SW 184th Street. The most northern segment includes both north and south limit intersections (Tamiami Trail and Okeechobee Road/US 27). All segments were analyzed as 'rural'. The average annual intersection crash, safety ratio at each intersection, and the safety ratio for the segments are summarized in Figures 12A to 12E.

Although there is some fluctuation in segment safety ratios between Eureka Drive to Tamiami Trail over the years, a slight increase is observed. As the distance between intersections increases, the percentage of crashes occurring at the intersections decreases. This is an indication that a corridor safety improvement plan should be considered, not just at individual intersections.



Year	Safety Ratio
1995	0.279
1996	0.251
1997	0.198
1998	0.000
1999	0.382
2000	0.083

Year	Safety Ratio
1995	0.838
1996	0.752
1997	0.198
1998	1.019
1999	0.859
2000	0.333

Year	Safety Ratio
1995	0.279
1996	0.251
1997	0.595
1998	0.408
1999	0.572
2000	0.583

Year	Safety Ratio
1995	0.279
1996	0.376
1997	0.992
1998	0.510
1999	0.382
2000	0.333

Year	Safety Ratio
1995	0.446
1996	0.327
1997	0.413
1998	0.414
1999	0.278
2000	0.580

Year	Safety Ratio
1995	0.223
1996	0.694
1997	0.413
1998	0.414
1999	0.486
2000	0.145

Segment Safety Ratio

Year	Safety Ratio
1995	1.658
1996	1.787
1997	1.920
1998	1.921
1999	1.952
2000	1.384

AVOCADO DR to south of SILVER PALM DR
Total Length: 4.05 miles
Average Annual Crash: 35.7
Percentage at Intersection: 74.2
Percentage at Signalized Intersection: 56.5

LEGEND

(4) Average Annual Crash

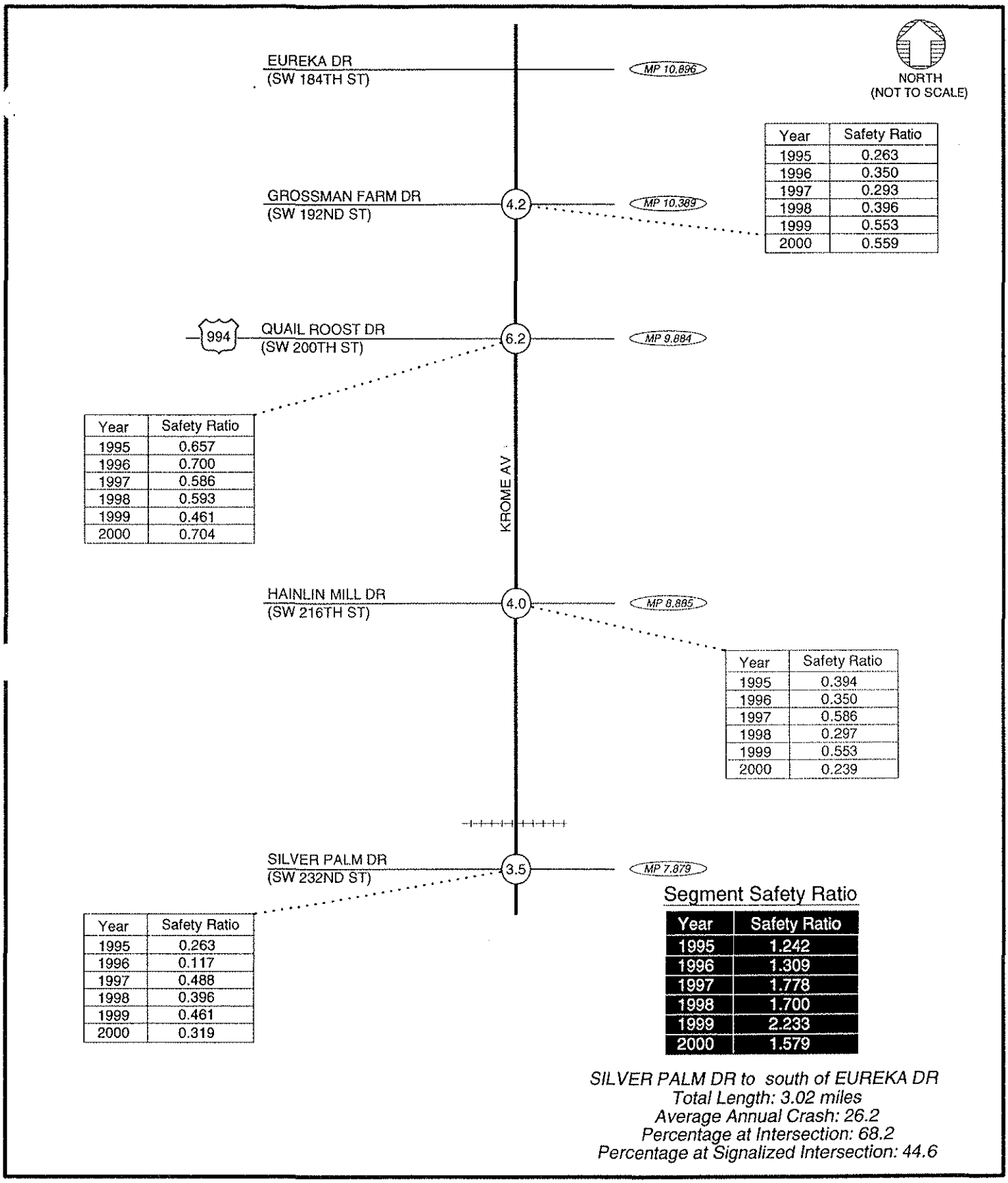
Year	Safety Ratio
19XX	< 1
19XX	≥ 1

AVERAGE ANNUAL INTERSECTION/SEGMENT CRASHES AND SAFETY RATIO (1995-2000)

KROME AVENUE - EXISTING LOS ANALYSIS
MIAMI, FLORIDA
AUGUST 2002

FIGURE
12A

4533FIG (SAFETY)



Year	Safety Ratio
1995	0.263
1996	0.350
1997	0.293
1998	0.396
1999	0.553
2000	0.559

Year	Safety Ratio
1995	0.657
1996	0.700
1997	0.586
1998	0.593
1999	0.461
2000	0.704

Year	Safety Ratio
1995	0.394
1996	0.350
1997	0.586
1998	0.297
1999	0.553
2000	0.239

Year	Safety Ratio
1995	0.263
1996	0.117
1997	0.488
1998	0.396
1999	0.461
2000	0.319

Segment Safety Ratio

Year	Safety Ratio
1995	1.242
1996	1.309
1997	1.778
1998	1.700
1999	2.233
2000	1.579

SILVER PALM DR to south of EUREKA DR
Total Length: 3.02 miles
Average Annual Crash: 26.2
Percentage at Intersection: 68.2
Percentage at Signalized Intersection: 44.6

LEGEND

(4) Average Annual Crash

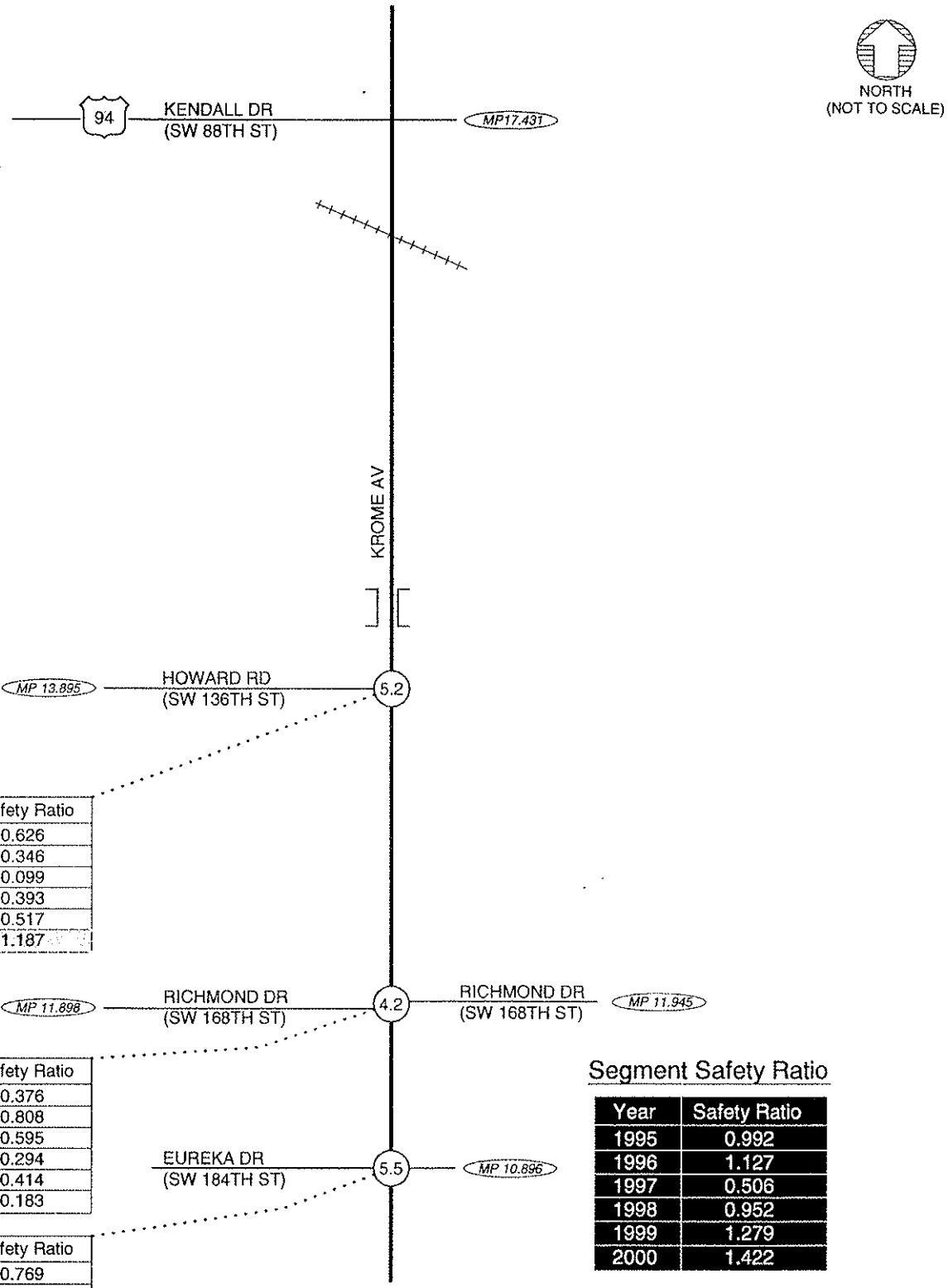
Year	Safety Ratio
19XX	< 1
19XX	≥ 1

AVERAGE ANNUAL INTERSECTION/SEGMENT CRASHES AND SAFETY RATIO (1995-2000)

KROME AVENUE - EXISTING LOS ANALYSIS
MIAMI, FLORIDA
AUGUST 2002

FIGURE 12B

4533FIG (SAFETY)



Year	Safety Ratio
1995	0.626
1996	0.346
1997	0.099
1998	0.393
1999	0.517
2000	1.187

Year	Safety Ratio
1995	0.376
1996	0.808
1997	0.595
1998	0.294
1999	0.414
2000	0.183

Year	Safety Ratio
1995	0.769
1996	0.462
1997	0.694
1998	0.788
1999	0.310
2000	0.457

Segment Safety Ratio

Year	Safety Ratio
1995	0.992
1996	1.127
1997	0.506
1998	0.952
1999	1.279
2000	1.422

EUREKA DR to south of KENDALL DR
Total Length: 6.54 miles
Average Annual Crash: 34.3
Percentage at Intersection: 43.2
Percentage at Signalized Intersection: 16.0

LEGEND

(4) Average Annual Crash

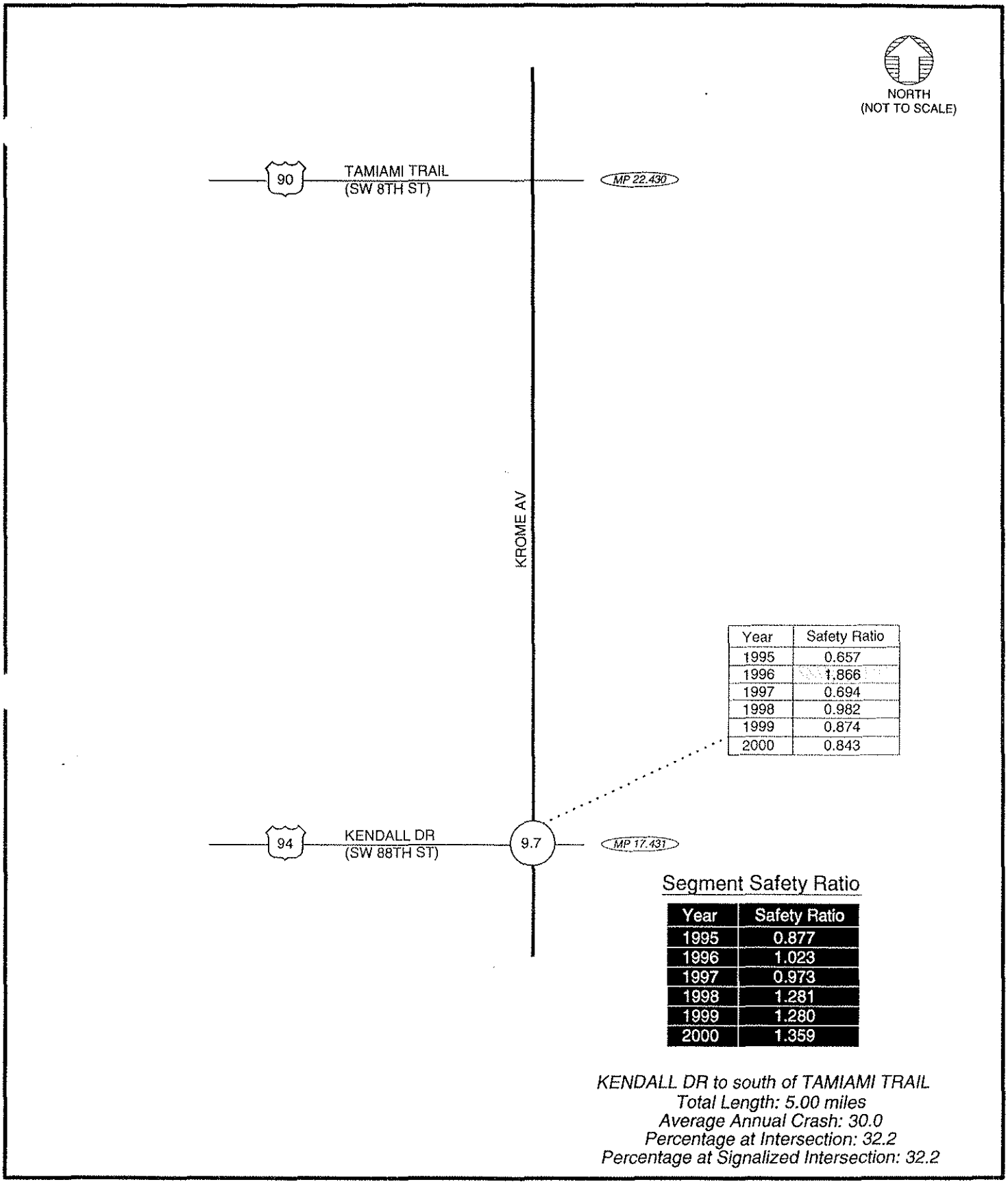
Year	Safety Ratio
19XX	< 1
19XX	≥ 1

AVERAGE ANNUAL INTERSECTION/SEGMENT CRASHES AND SAFETY RATIO (1995-2000)

KROME AVENUE - EXISTING LOS ANALYSIS
MIAMI, FLORIDA
AUGUST 2002

FIGURE 12C

4533FIG (SAFETY)



LEGEND

(4) Average Annual Crash

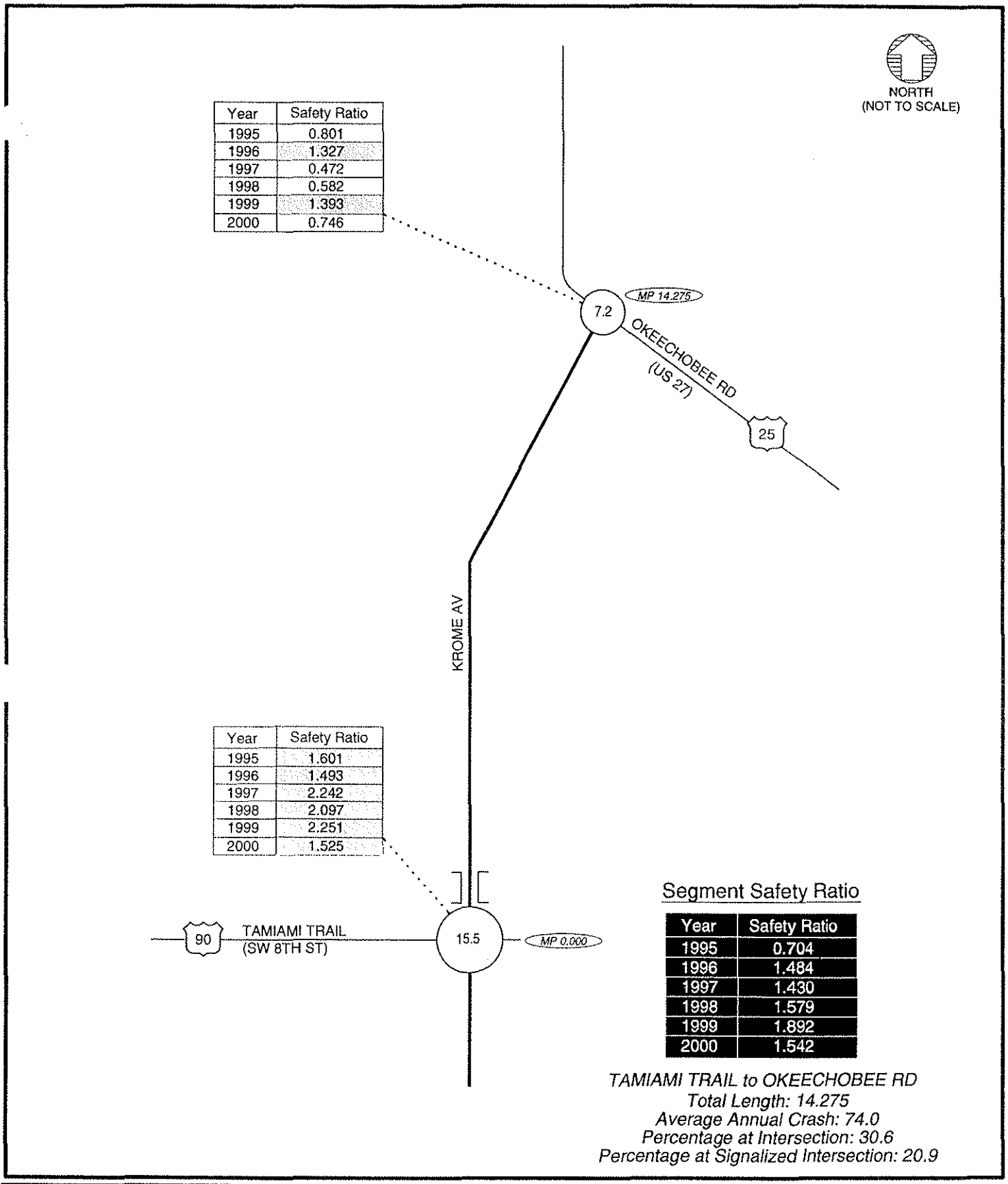
Year	Safety Ratio
19XX	< 1
19XX	≥ 1

AVERAGE ANNUAL INTERSECTION/SEGMENT CRASHES AND SAFETY RATIO (1995-2000)

KROME AVENUE - EXISTING LOS ANALYSIS
MIAMI, FLORIDA
AUGUST 2002

FIGURE 12D

4533FIG (SAFETY)



Year	Safety Ratio
1995	0.801
1996	1.327
1997	0.472
1998	0.582
1999	1.393
2000	0.746

Year	Safety Ratio
1995	1.601
1996	1.493
1997	2.242
1998	2.097
1999	2.251
2000	1.525

Segment Safety Ratio

Year	Safety Ratio
1995	0.704
1996	1.484
1997	1.430
1998	1.579
1999	1.892
2000	1.542

LEGEND

(4) Average Annual Crash

Year	Safety Ratio
19XX	< 1
19XX	≥ 1

* Proposed Safety Improvements

AVERAGE ANNUAL INTERSECTION/SEGMENT CRASHES AND SAFETY RATIO (1995-2000)

KROME AVENUE - EXISTING LOS ANALYSIS
MIAMI, FLORIDA
AUGUST 2002

FIGURE 12E

4533FIG (SAFETY)

All fatal crashes from January 1995 to March 2002 are documented in Figures 13A to 13E. The following information is included: number of fatalities, approximate milepost, date, time, causes and possible environment conditions. The fatal crash rate was also determined over the years.

The fatal crashes increase significantly in the last two years, especially from Eureka Drive/SW 184th Street to Kendall Drive/SW 88th Street and from Tamiami Trail/SW 8th Street to Okeechobee Road/US27. There were a total of 39 fatal crashes from January 1995 to March 2002, about half of them occurred at night (8 p.m. to 4 a.m.). A summary of all fatal crashes along the entire studied corridor is presented in Table 11.

Table 11: Summary of Fatal Crashes and Fatalities (January 1995- March 2002)

Year	1995	1996	1997	1998	1999	2000	2001	2002 (Jan-Mar)
Fatal Crashes	3	3	2	3	5	8	12	3
Fatalities	5	3	5	3	6	9	18	5

Fifteen of 39 fatal crashes were head-on crashes, which accounted for 24 fatalities (44% of all fatalities). Others were classified as any of the following: angle, pedestrian, left turn, run off road, overturn, and other. The following are some initial observations on all fatal crashes:

- Of the five segments analyzed, the segment from Eureka Drive to south of Kendall Drive had the highest fatal crash rate. In a length of less than 5 miles, there were 14 fatal crashes from 1996 to 2001.
- In 2001, three fatal crashes occurred within 0.2 mile (MP 14.868 to MP 15.070), accounting for five fatalities. One potential cause of the crashes is the roadside clutter caused by narrow shoulders and utility poles near the edge of the roadway.
- The segment from Tamiami Trail to US 27 has good sight distance. However, the sharp curve at approximately milepost 10.500 is unmarked and is a potential cause of crashes in the area.

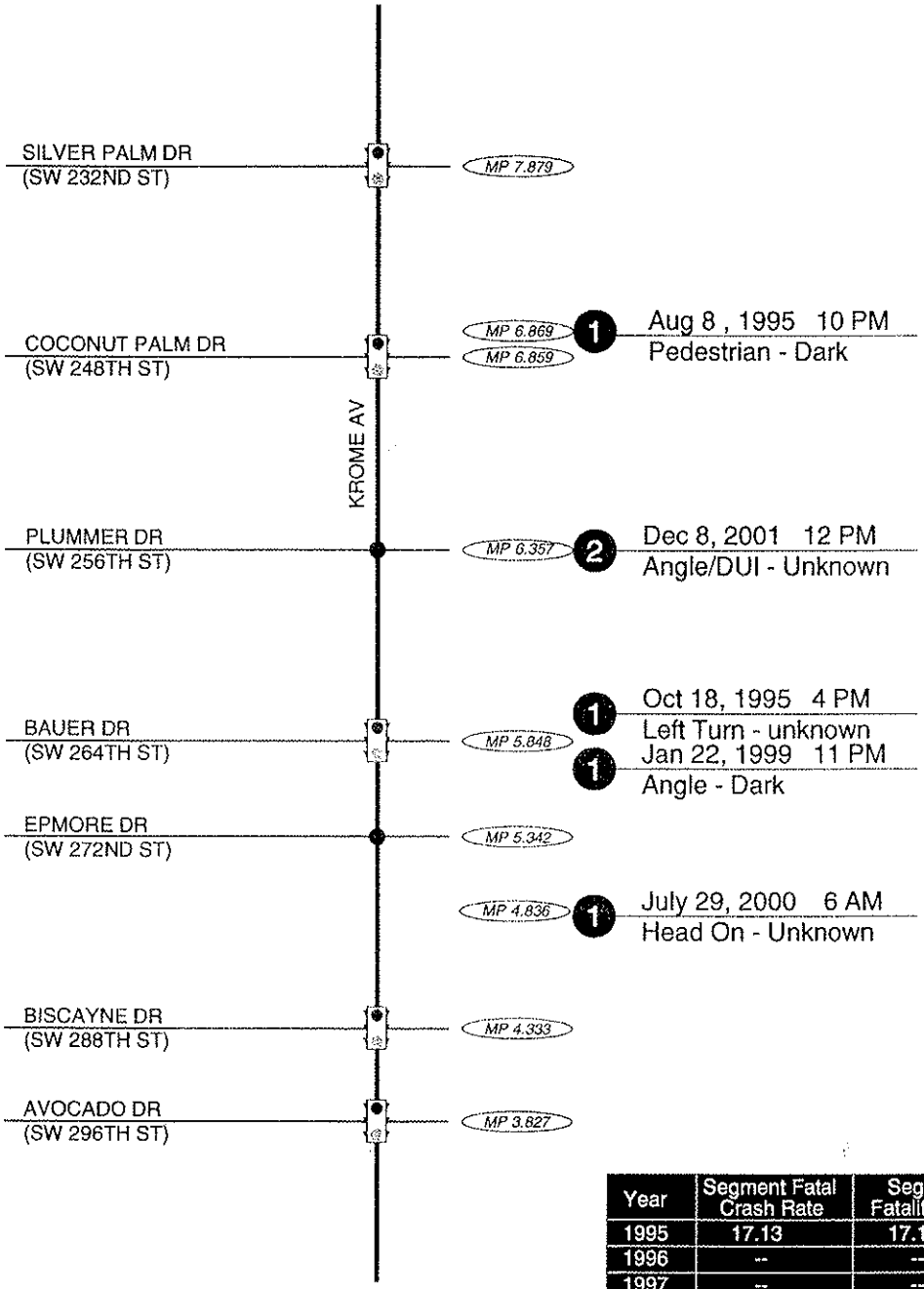
A more detailed review of crash reports themselves is recommended in order to determine the precise causes of crashes and appropriate actions to prevent such crashes. This action should be done in the next phase of the study as a follow-up action. Crash sites were inspected and nearby conditions for each location is summarized in Table 12.

Figure 14 shows the safety analysis summary for the entire corridor.

Table 12: Nearby Conditions at Fatal Crashes Locations

Section	Milepost	Location	Near by conditions
87150	4.836	Mid-block	Wide shoulders on both sides
87150	5.848	At SW 264th St	Signalized intersection, exclusive left-turn lane
87150	5.848	At SW 264th St	Signalized intersection, exclusive left-turn lane
87150	6.357	At SW 256th St	Unsignalized intersection, Sunoco service station in SW corner
87150	6.869	At SW 248th St	Amoco gas station SW corner, Texaco NE corner, Construction in NW corner, SE corner vacant
87150	10.622	At SW 188th St	Good sight distance
87150	12.200	Mid-block	Hit pole on eastside, north of Chekika recreation area driveway
87150	12.420	Mid-block	Poles on westside, shoulder on eastside
87150	12.738	Mid-block	Poles on westside, shoulder on eastside
87150	13.280	Mid-block	~ at SE 154th St, by GUS Nursery; poles on Westside, shoulder on eastside
87150	13.821	Mid-block	Just south of SW 136th St, poles on Westside, shoulder on eastside
87150	13.895	At SW 136th St	Grass shoulder on Westside, poles on eastside north of intersection only.
87150	13.895	At SW 136th St	Grass shoulder on Westside, poles on eastside north of intersection only.
87150	14.668	At SW 122nd St	Good sight distance
87150	14.868	Mid-block	Guardrail on the eastside, 20ft graveled/grass shoulder with poles on the Westside – just north of D'Martinez nursery.
87150	14.940	Mid-block	
87150	15.070	Mid-block	
87150	15.700	Mid-block	Guardrail on eastside, narrow shoulder on Westside
87150	16.156	At SW 100th St	Good side distance, one lane-all movements
87150	16.931	Mid-block	North of railroad crossing, guardrail on both sides
87150	17.431	At SW 88th St	Guardrail on eastside, shoulder on Westside
87150	19.431	Mid-block	Guardrail on Westside for culvert, continuous guardrail on eastside
87150	20.430	Mid-block	Wooded area on the Westside, guardrail on the eastside
87070	1.020	Mid-block	Near a driveway
87070	1.700	Mid-block	Speed changes from 50 mph to 55 mph
87070	2.020	Mid-block	20 ft slope shoulders
87070	2.300	Mid-block	South of Curve-right sign, 20 ft slope shoulders, NB no passing
87070	2.350	Mid-block	
87070	4.300	Mid-block	Near guide sign, crash location may be miscoded.

87070	8.400	Mid-block	No passing zone, 20 ft slope shoulders, near driveway
87070	8.800	Mid-block	Driveway south of curve-right sign
87070	9.150	Mid-block	Sharp curve, unmarked
87070	9.250	Mid-block	Missed curve, ran off road to the right.
87070	11.500	Mid-block	Good sight distance, straight road
87070	12.275	Mid-block	Milton Thomas Park eastside - park closes at 5:30, Parking for fishing Westside; good sight distance



Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	17.13	17.13
1996	--	--
1997	--	--
1998	--	--
1999	5.64	5.64
2000	5.01	5.01
2001	4.80	9.60

AVOCADO DR to south of SILVER PALM DR
Total Length: 4.05 Miles

NOTE: FATALITY RATE IS THE NUMBER OF FATALITIES PER 100 MILLION VEHICLE MILES

NOTE: FATAL CRASH RATE IS THE NUMBER OF FATAL CRASHES PER 100 MILLION VEHICLE MILES

LEGEND

Fatality
1 Date Time
Event - Condition

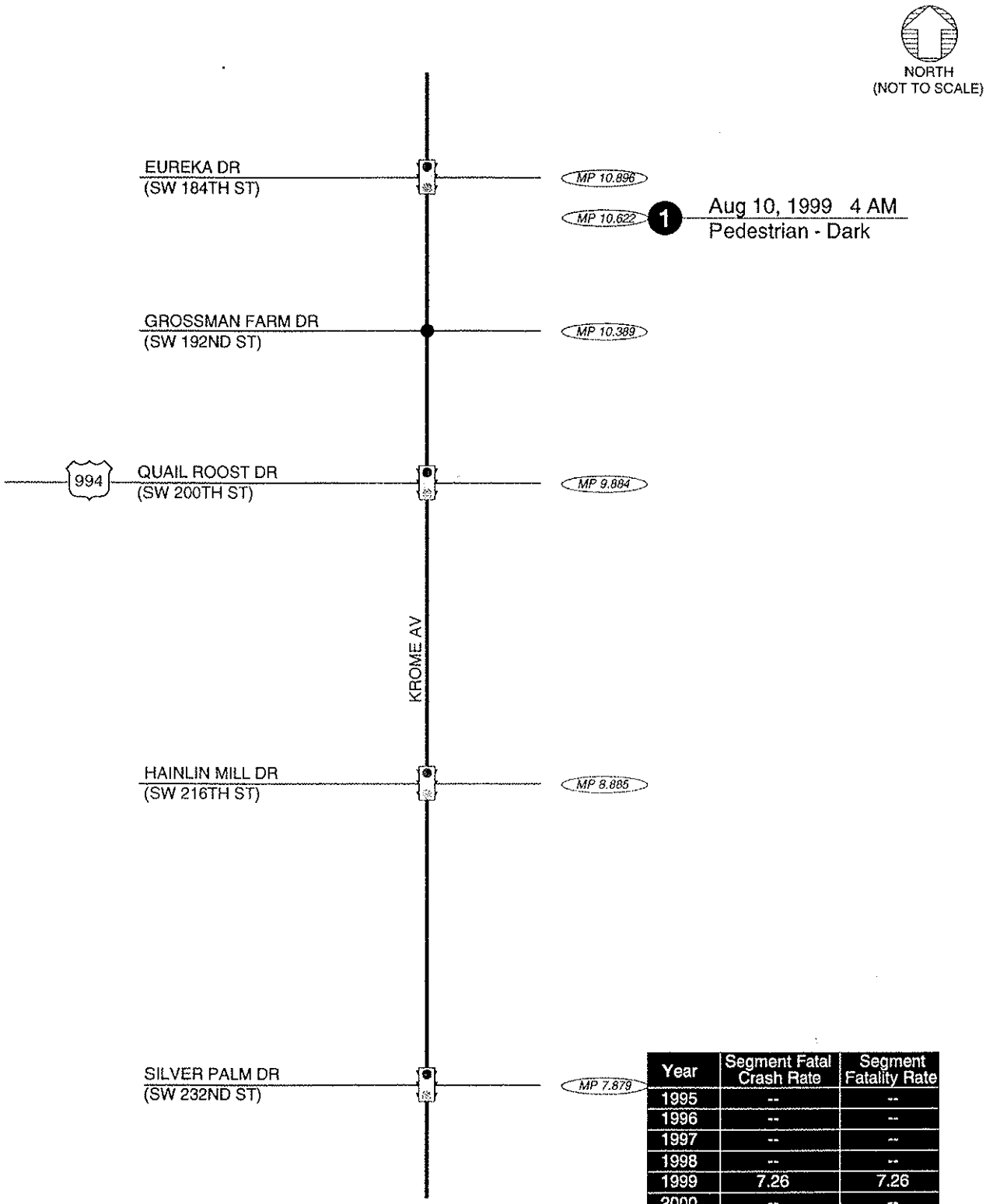
● Unsignalized Intersection

Signalized Intersection

FATAL CRASHES (1995 - MARCH 2002)
FATAL CRASH RATE AND FATALILTY RATE (1995-2001)

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 13A

4533FIG (FCRASH)



Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	--	--
1997	--	--
1998	--	--
1999	7.26	7.26
2000	--	--
2001	--	--

SILVER PALM DR to south of EUREKA DR
Total Length: 3.02 Miles

NOTE: FATALITY RATE IS THE NUMBER OF FATALITIES PER 100 MILLION VEHICLE MILES

NOTE: FATAL CRASH RATE IS THE NUMBER OF FATAL CRASHES PER 100 MILLION VEHICLE MILES

LEGEND

Fatality
1 Date Time
Event - Condition

● Unsignalized Intersection

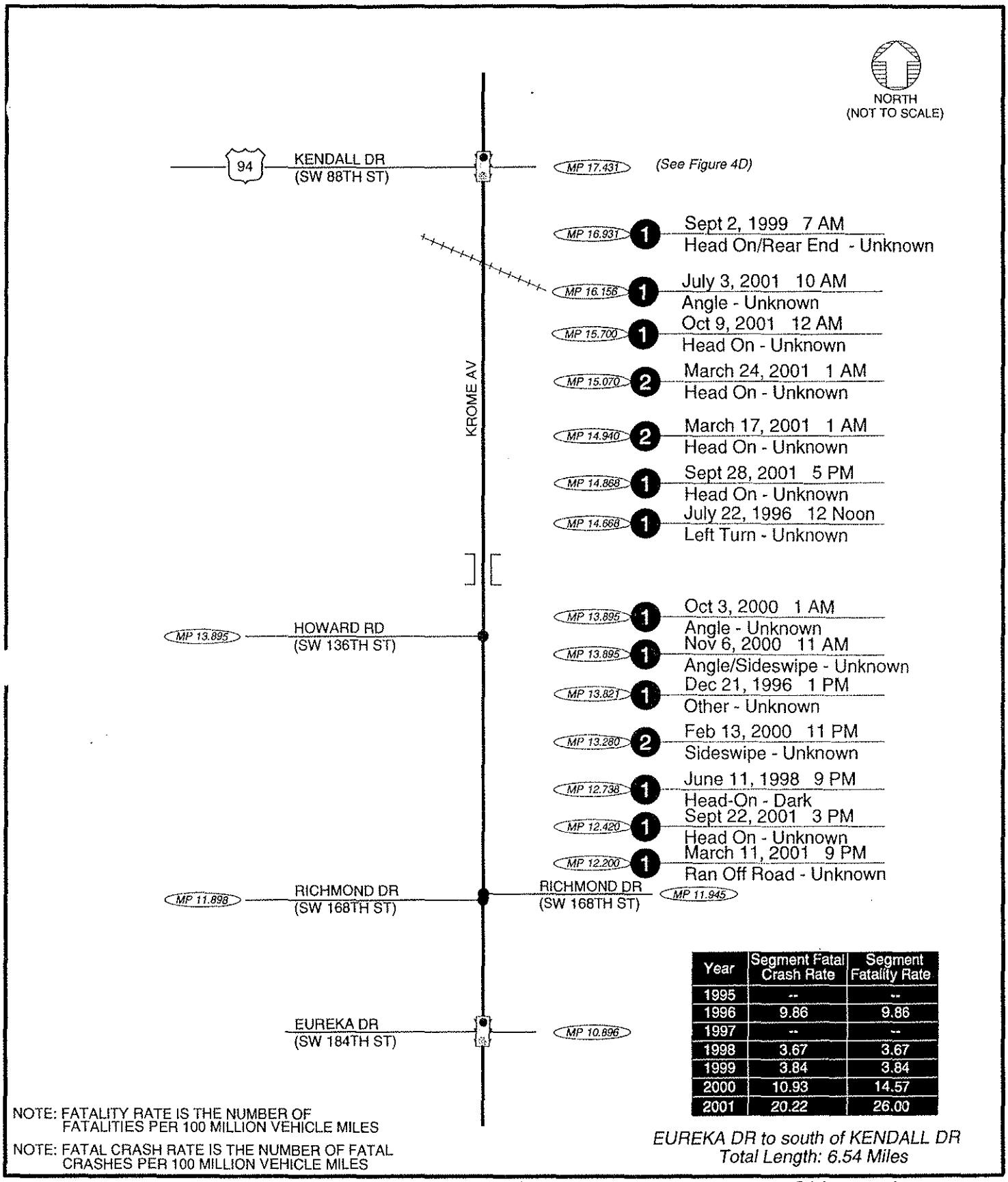
Signalized Intersection

FATAL CRASHES (1995 - MARCH 2002)
FATAL CRASH RATE AND FATALILTY RATE (1995-2001)

KROME AVENUE - EXISTING LOS ANALYSIS
MIAMI, FLORIDA
AUGUST 2002

FIGURE
13B

4533FIG (FCRASH)



Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	9.86	9.86
1997	--	--
1998	3.67	3.67
1999	3.84	3.84
2000	10.93	14.57
2001	20.22	26.00

EUREKA DR to south of KENDALL DR
Total Length: 6.54 Miles

NOTE: FATALITY RATE IS THE NUMBER OF FATALITIES PER 100 MILLION VEHICLE MILES

NOTE: FATAL CRASH RATE IS THE NUMBER OF FATAL CRASHES PER 100 MILLION VEHICLE MILES

LEGEND

Fatality
1 Date Time
Event - Condition

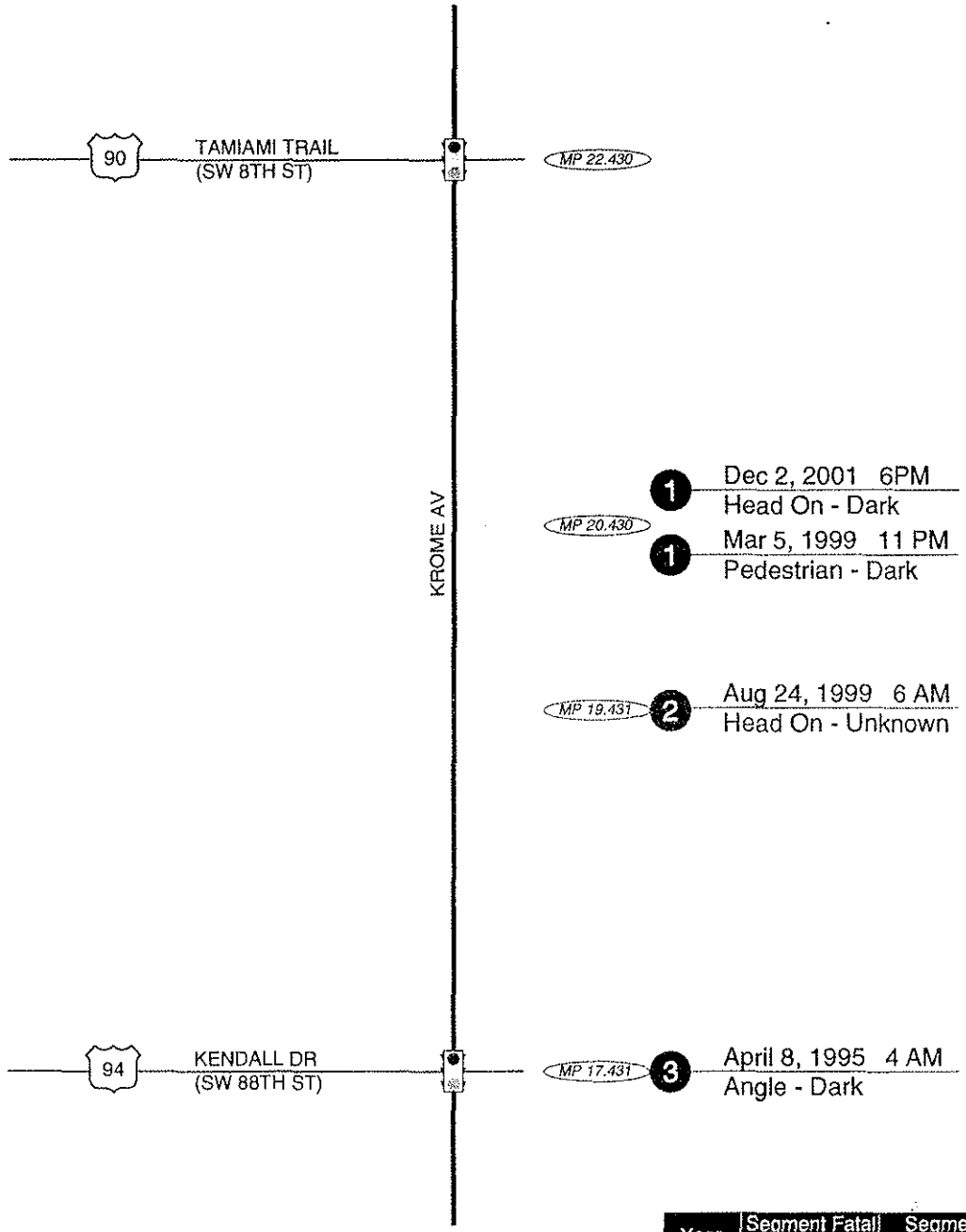
● Unsignalized Intersection

Signalized Intersection

FATAL CRASHES (1995 - MARCH 2002)
FATAL CRASH RATE AND FATALILTY RATE (1995-2001)

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 13C

4533FIG (FCRASH)



Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	8.43	25.29
1996	--	--
1997	--	--
1998	--	--
1999	8.24	12.36
2000	--	--
2001	3.70	3.70

KENDALL DR to south of TAMIAMI TRAIL
Total Length: 5.00 Miles

NOTE: FATALITY RATE IS THE NUMBER OF FATALITIES PER 100 MILLION VEHICLE MILES

NOTE: FATAL CRASH RATE IS THE NUMBER OF FATAL CRASHES PER 100 MILLION VEHICLE MILES

LEGEND

Fatality
1 Date Time
Event - Condition

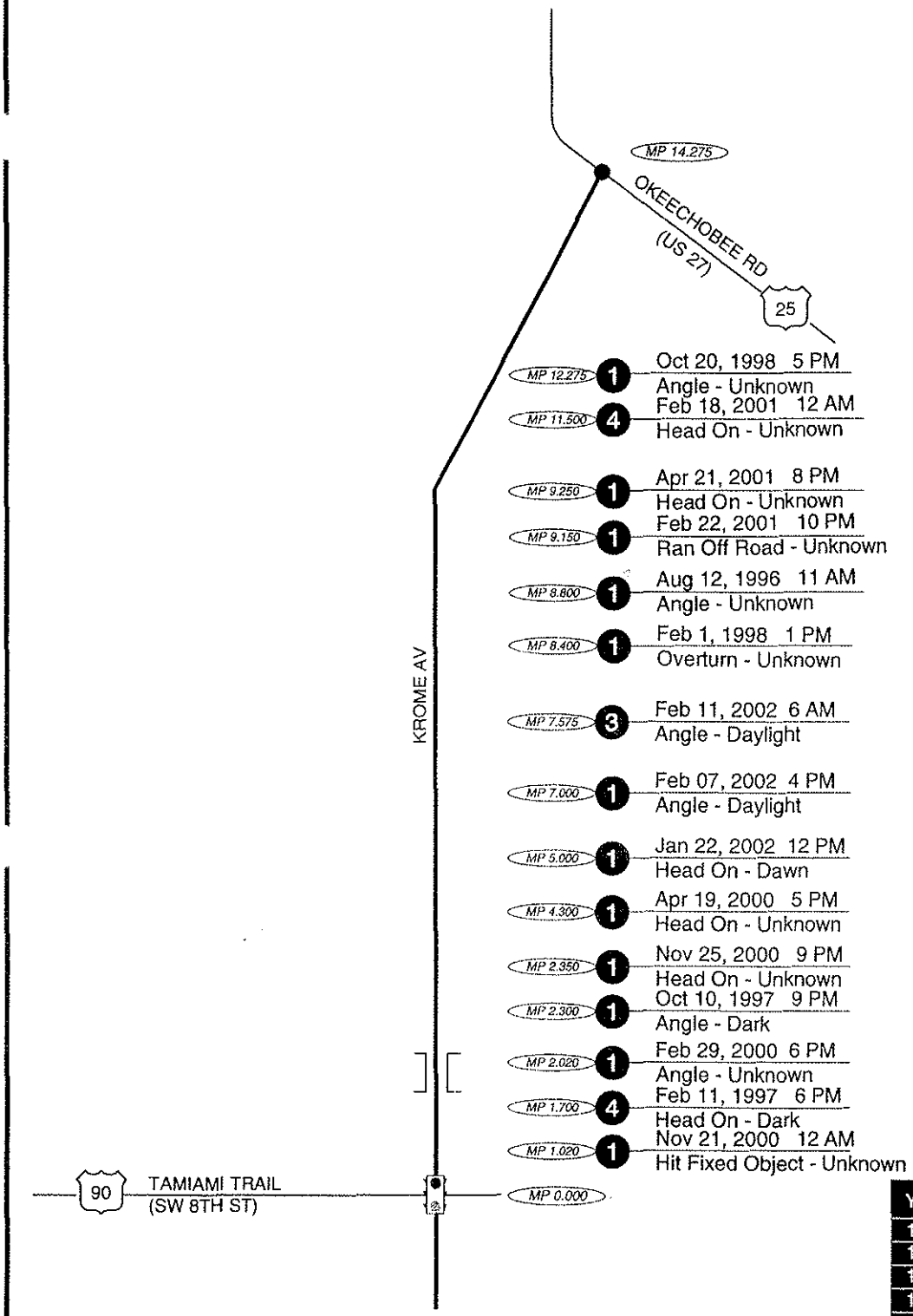
● Unsignalized Intersection

Signalized Intersection

FATAL CRASHES (1995 - MARCH 2002)
FATAL CRASH RATE AND FATALILTY RATE (1995-2001)

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 13D

4533FIG (FCRASH)



Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	3.49	3.49
1997	5.73	14.32
1998	5.33	5.33
1999	--	--
2000	9.25	9.25
2001	6.40	12.79

NOTE: FATALITY RATE IS THE NUMBER OF FATALITIES PER 100 MILLION VEHICLE MILES

NOTE: FATAL CRASH RATE IS THE NUMBER OF FATAL CRASHES PER 100 MILLION VEHICLE MILES

TAMIAMI TRAIL to OKEECHOBEE RD
Total Length: 14.275 Miles

LEGEND

Fatality
1 Date Time
Event - Condition

● Unsignalized Intersection

Signalized Intersection

FATAL CRASHES (1995 - MARCH 2002)
FATAL CRASH RATE AND FATALILTY RATE (1995-2001)

KROME AVENUE - EXISTING LOS ANALYSIS MIAMI, FLORIDA AUGUST 2002	FIGURE 13E

4533FIG (FCRASH)

NORTH
(NOT TO SCALE)

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	3.49	3.49
1997	5.73	14.32
1998	5.33	5.33
1999	--	--
2000	9.25	9.25
2001	6.40	12.79

TAMIAMI TRAIL to OKEECHOBEE RD
Total Length: 14.275 Miles

Year	Safety Ratio
1995	0.704
1996	1.484
1997	1.430
1998	1.579
1999	1.892
2000	1.542

TAMIAMI TRAIL to OKEECHOBEE RD

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	8.43	25.29
1996	--	--
1997	--	--
1998	--	--
1999	8.24	12.36
2000	--	--
2001	3.70	3.70

KENDALL DR to south of TAMIAMI TRAIL
Total Length: 5.00 Miles

Year	Safety Ratio
1995	0.877
1996	1.023
1997	0.973
1998	1.281
1999	1.280
2000	1.359

KENDALL DR to south of TAMIAMI TRAIL

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	9.86	9.86
1997	--	--
1998	3.67	3.67
1999	3.84	3.84
2000	10.93	14.57
2001	20.22	26.00

EUREKA DR to south of KENDALL DR
Total Length: 6.54 Miles

Year	Safety Ratio
1995	0.992
1996	1.127
1997	0.506
1998	0.952
1999	1.279
2000	1.422

EUREKA DR to south of KENDALL DR

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	--	--
1997	--	--
1998	--	--
1999	7.26	7.26
2000	--	--
2001	--	--

SILVER PALM DR to south of EUREKA DR
Total Length: 3.02 Miles

Year	Safety Ratio
1995	1.242
1996	1.309
1997	1.778
1998	1.700
1999	2.233
2000	1.579

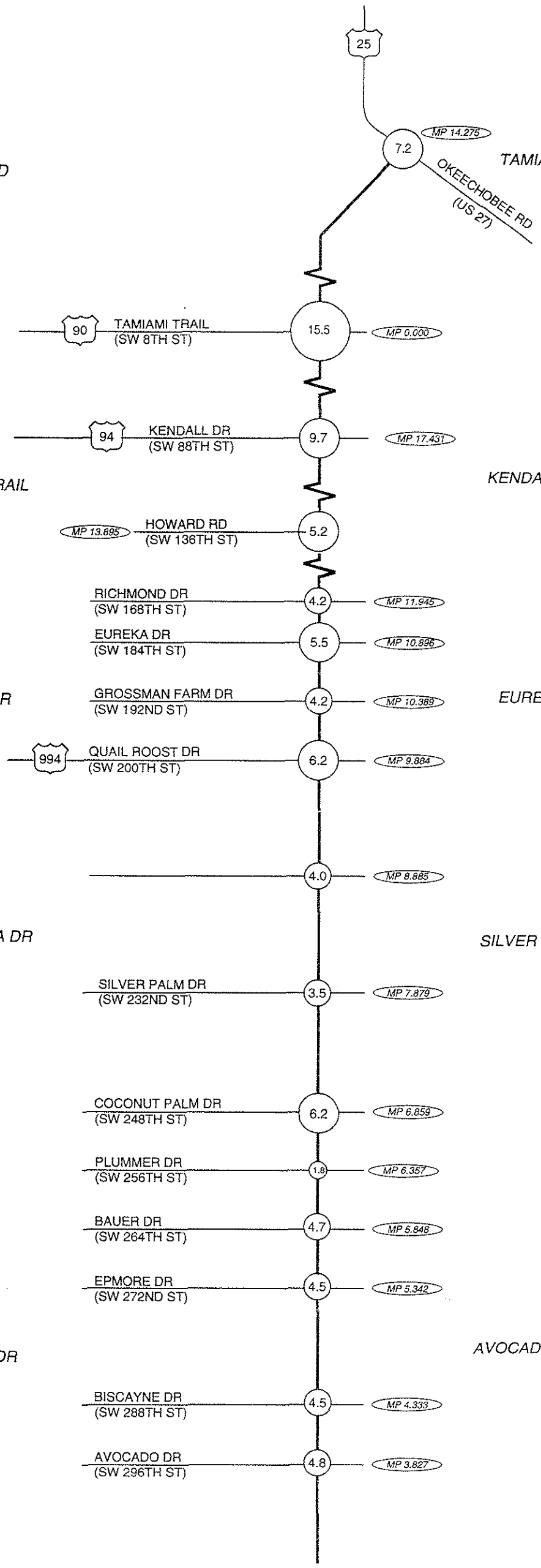
SILVER PALM DR to south of EUREKA DR

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	17.13	17.13
1996	--	--
1997	--	--
1998	--	--
1999	5.64	5.64
2000	5.01	5.01
2001	4.80	9.60

AVOCADO DR to south of SILVER PALM DR
Total Length: 4.05 Miles

Year	Safety Ratio
1995	1.658
1996	1.787
1997	1.920
1998	1.921
1999	1.952
2000	1.384

AVOCADO DR to south of SILVER PALM DR



LEGEND

(4.2) Average Annual Number of Crashes

SUMMARY OF SAFETY ANALYSIS

KROME AVE - EXISTING LOS ANALYSIS
MIAMI-DADE COUNTY, FLORIDA
AUGUST 2002

FIGURE 14

4533KROME-SAFETY

Section 8

Intersection/Arterial Level of Service

Intersection/Arterial Level of Service

Methodology

Level of Service (LOS) analysis was performed for ten signalized intersections using Highway Capacity Software (HCS-Signals). LOS analysis was completed for four unsignalized intersections using HCS-Unsignal. LOS analysis was also performed for the urban section (HCS-Arterials) and for the rural section (HCS Two-lane).

The assumptions are as follows:

- The turning movement counts collected for the morning peak hours were used and an overall intersection peak hour factor was calculated.
- Percentage of heavy vehicles was applied movement-specific.
- Signal timings at the signalized intersections were obtained from FDOT D6 Traffic Engineering Department or its network. All of the signals in the system are semi-actuated. The North-south through movements are the non-actuated movements. The existing timing was used without optimization.
- Lane configurations are as shown in Figures 2A-E
- For the arterial analysis, the free flow speed is assumed to be the posted speed limit.
- For the two-lane highway analysis for the rural segments, the free flow speed is assumed to be 5 mph higher than the average posted speed limit (calibrated to better reflect the field observations).

Analysis Results

Arterial Level of Service

The arterial analysis was performed for both the northbound and southbound directions. Many of the input parameters were imported directly from the signalized intersection analysis. For the analysis purposes, the segment from Avocado Dr/SW 296th Street to Eureka Dr/SW 184th Street was considered "urban" (due to its signal spacing characteristics) and HCS-Arterials was used for the operation analysis. The other three segments, from Eureka Dr/SW 184th St to US 27/Okeechobee Rd were considered "rural" and HCS-Two-Lane was used for analysis. The results are summarized in Table 13:

Table 13: Arterial Level of Service for the Morning Peak Hour

Segment Limits	Free flow Speed (mph)	Travel Speed (mph)	2002 LOS
Avocado Dr/SW 296th Street to Eureka Dr/ SW 184th Street **(NB)**	N/a	37.4	A
Avocado Dr/SW 296th Street to Eureka Dr/ SW 184th Street **(SB)**	N/a	37.7	A
Eureka Dr/ SW 184th Street to Kendall Drive/SW 88th Street	46.9	36.0	E
Kendall Drive/SW 88th Street to Tamiami Trail/SW 8th Street	53.5	41.6	D
Tamiami Trail/SW 8th Street to US27/Okeechobee Road	59.8	51.5	C

Intersection Level of Service

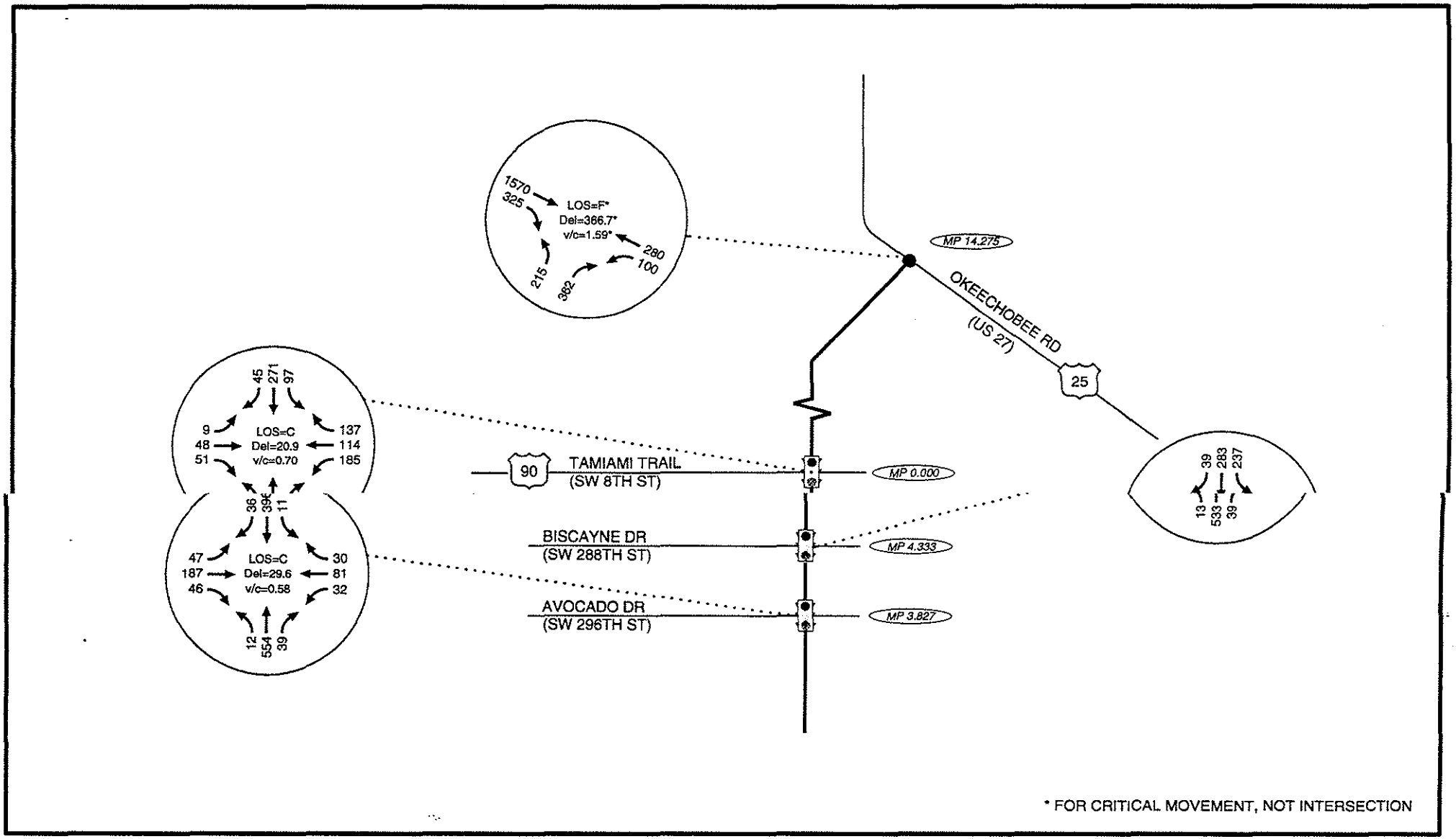
LOS, Control Delay, and Critical v/c ratio for the intersections are presented in Figure 15 as well as in Table 14:

Table 14: Intersection Level of Service for the Morning Peak Hour

Intersection	Critical v/c	Delay (sec)	LOS
Avocado Drive/SW 296th Street	0.58	29.6	C
Biscayne Drive/SW 288 Street	0.74	26.1	C
Epmore Drive/SW 272 Street*	0.73	83.2	F
Bauer Drive/SW 264 Street	0.67	20.0	C
Coconut Palm Drive/SW 248 Street	0.61	19.3	B
Silver Palm Drive/SW 232 Street	0.63	20.0	C
Hainlin Mill Drive/SW 216 Street	0.65	18.7	B
Quail Roost Drive/SW 200 Street	1.02	94.3	F
Grossman Farm Road/SW 192 Street*	0.84	111.0*	F
Eureka Drive/SW 184 Street	0.78	29.6	C
Howard Road/SW 136 Street*	1.69	397.5	F
Kendall Drive/SW 88 Street	1.03	238.0	F
Tamiami Trail/SW 8 Street	0.70	20.9	C
Okeechobee Road/US 27*	1.59	366.7	F

* For unsignalized intersections, the performance measures recorded are for the critical movement and NOT for the intersection. See Figures 3A to 3E for more detail.

Due to the unique geometry at the Krome Ave/US 27 intersection, it was analyzed as if the Krome Ave northbound traffic negotiates with eastbound and westbound on US 27 separately. The critical movement is the northbound left at this intersection. The control delay of this movement is 352.0 seconds due to the southbound/eastbound traffic and is 14.7 seconds due to the northbound/westbound traffic. These delays result in a total movement control delay of 366.7



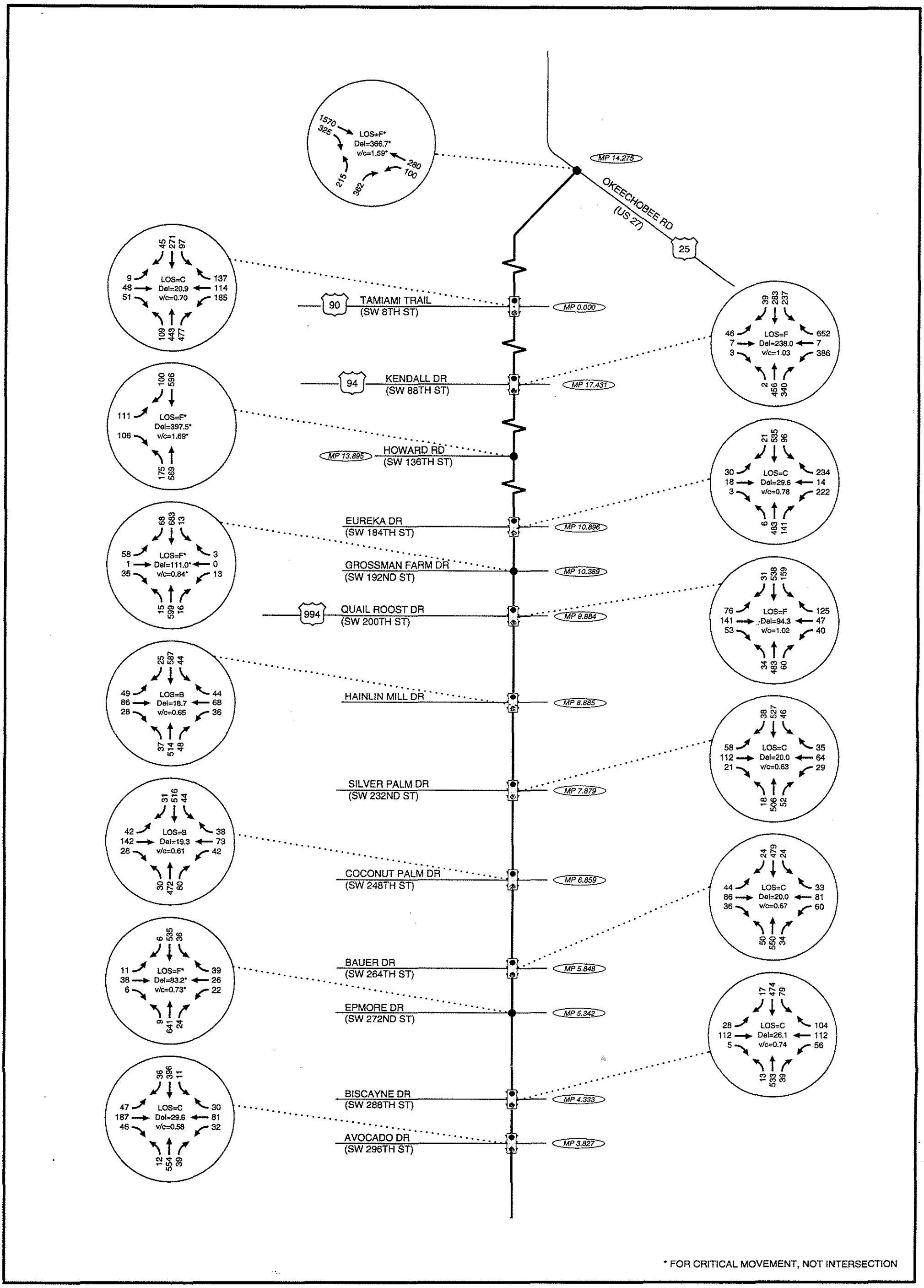
LEGEND

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/
CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

INTERSECTION LEVEL OF SERVICE FOR THE MORNING PEAK HOUR

KROME AVE - EXISTING LOS ANALYSIS MIAMI-DADE COUNTY, FLORIDA AUGUST 2002	FIGURE 15

4533KROME-LOS



LEGEND

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

INTERSECTION LEVEL OF SERVICE FOR THE MORNING PEAK HOUR

KROME AVE - EXISTING LOS ANALYSIS MIAMI-DADE COUNTY, FLORIDA AUGUST 2002	FIGURE 15

4533KROME-LOS

Section 9

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2. *Manual on Uniform Traffic Studies,* Florida Department of Transportation, January 2000

3. *Highway Capacity Manual,* Transportation Research Board, 2000

4. *Manual on Uniform Traffic Control Devices – Millennium Edition,* US Department of Transportation-Federal Highway Administration, 2001

FDOT D6 Systems Planning

Krome Avenue Existing LOS and Safety Analysis

Miami-Dade County, Florida

Prepared For:
Florida Department of Transportation, District Six

Prepared By:
Kittelson & Associates, Inc.
110 E Broward Blvd, Suite 2410
Ft. Lauderdale, FL 33301
(954) 735-1245

Project Manager: John Zegeer
Project Analysts: Thuha Nguyen,
Lei Xu, Marais Lombard, Susan Wright

Project No. 4533.03

August 2002

Table of Contents

Executive Summary I

Section 1 Introduction 2

Section 2 Roadway Inventory 4

Section 3 Traffic Counts 11

Section 4 Traffic Characteristics 19

Section 5 Intersection Inventory 23

Section 6 Travel Time Runs 31

Section 7 Crash Data 35

Section 8 Intersection/Arterial Level of Service 54

Section 9 References 59

List of Figures

Figure E-1: Arterial Level of Service III

Figure E-2: Intersection Level of Service V

Figure E-3: Safety Analysis Results VII

Figure 1: Site Vicinity 2

Figure 2 A-E: Existing Lane Configurations and Traffic Control Devices 5

Figure 3 A-E: Existing Turning Movement Counts and Morning Peak Intersection Level of Service 13

Figure 4: Northbound approach at Eureka Drive/SW 184th Street 24

Figure 5: Southbound approach at Eureka Drive/SW 184th Street 24

Figure 6: Northbound approach at Kendall Drive/SW 88th Street 26

Figure 7: Southbound approach at Kendall Drive/SW 88th Street 26

Figure 8: Northbound approach at Tamiami Trail/SW 8th Street 27

Figure 9: Southbound approach at Tamiami Trail/SW 8th Street 27

Figure 10: Northbound approach at US 27/Okeechobee Road 29

Figure 11: View from North at US 27/Okeechobee Road 29

Figure 12 A-E: Average Annual Intersection and Segment Crashes and Safety Ratio (1995-2000) 39

Figure 13 A-E: Fatal Crashes (1995-March 2002), Segment Fatal Crash and Fatality Rates (1995-2001) 47

Figure 14: Summary of Safety Analysis 52

Figure 15: Intersection Level of Service for the Morning Peak Hour 57

List of Tables

Table E-1: Performance Measures for Intersections with Level of Service of F (Morning Peak Hour) IV

Table E-2: Summary of Fatal Crashes and Fatalities (1995-March 2002) VI

Table 1: Average Daily Traffic for the years 1995 to 2001 11

Table 2: Morning and Afternoon Peak Hour Two-Way Volume Comparison7 12

Table 3: Summary of Directional Distribution Factor (D) 19

Table 4: Summary of K_{100}-Factor 20

Table 5: Morning Peak Hour Percentage of Trucks for the Segment SW 8th Street/Tamiami Trail to US 27/Okeechobee Rd 21

Table 6: Daily Percentage of Trucks (T) for the Segment SW 8th Street/Tamiami Trail to US 27/Okeechobee RD 21

Table 7: Summary of Percentage of Truck (T) 21

Table 8: Northbound Travel Time and Delay Results 32

Table 9: Southbound Travel Time and Delay Results 33

Table 10: Summary of Crashes by Categories 35

Table 11: Summary of Fatal Crashes and Fatalities (January 1995- March 2002) 44

Table 12: Nearby Conditions at Fatal Crashes Locations 45

Table 13: Arterial Level of Service for the Morning Peak Hour 55

Table 14: Intersection Level of Service for the Morning Peak Hour 55

EXECUTIVE SUMMARY

This report presents the conceptual designs and signal warrant analyses performed based on the recommendations made in the Krome Avenue Phase 2 and 3 Studies.

The recommendations from the conceptual design analysis are:

- Hainlin Mill Drive (SW 216 Street): The recommended project should proceed into the design phase.
- Quail Roost Drive (SW 200 Street): The recommended project should proceed into the design phase.
- Eureka Drive (SW 184 Street): The recommended project should proceed into the design phase.
- Kendall Drive (SW 88 Street): The recommended alternative should be further studied as part of a PD&E Study.
- Okeechobee Road (US 27): The maintenance department and the traffic operations division should study the need for and feasibility of the short-term and medium-term alternatives.

The recommendations from the signal warrant analysis are:

- Epmore Drive (SW 272nd Street): Signal not warranted.
- Grossman Farm Road (SW 192nd Street): Signal not warranted.
- Howard Road (SW 136th Street): Signal not warranted.
- Okeechobee Road (US 27): Signal not warranted.

TABLE OF CONTENTS

1.0 INTRODUCTION **1**

2.0 CONCEPTUAL DESIGN AND COST ESTIMATES **2**

2.1 HAINLIN MILL DRIVE (SW 216TH STREET) 2
2.2 QUAIL ROOST DRIVE (SW 200TH STREET) 6
2.3 EUREKA DRIVE (SW 184TH STREET) 9
2.4 KENDALL DRIVE (SW 88TH STREET) 12
2.5 OKEECHOBEE ROAD (US 27) 17

3.0 SIGNAL WARRANT ANALYSIS **22**

3.1 EPMORE DRIVE (SW 272ND STREET) ANALYSIS 24
3.2 GROSSMAN FARM ROAD (SW 192ND STREET) ANALYSIS 25
3.3 HOWARD ROAD (SW 136TH STREET) ANALYSIS 26
3.4 OKEECHOBEE ROAD (US 27) ANALYSIS 27

APPENDIX A: SIGNAL WARRANT ANALYSIS WORKSHEETS

LIST OF TABLES

Table 1. Queue Storage Requirements 2
Table 2. Signal Warrant Analysis Summary 22
Table 3: Crash Summary for Krome Avenue and Epmore Drive 24
Table 4: Crash Summary for Krome Avenue and Grossman Farm Road 25
Table 5: Crash Summary for Krome Avenue and Howard Road 26
Table 6: Crash Summary for Krome Avenue and Okeechobee Road 27

LIST OF FIGURES

Figure 1. Hainlin Mill Drive Conceptual Layout 4
Figure 2. Cost Estimate for Hainlin Mill Drive (SW 216th Street) 5
Figure 3. Quail Roost Drive Conceptual Layout 7
Figure 4. Quail Roost Drive (SW 200th Street) Cost Estimate 8
Figure 5. Eureka Drive Conceptual Layout 10
Figure 6. Eureka Drive (SW 184th Street) Cost Estimate 11
Figure 7. Krome Avenue/Kendall Drive Level of Service Summary 13
Figure 8. Kendall Drive Intersection Conceptual Layout 14
Figure 9. Extent of Impact of Kendall Drive Intersection 15
Figure 10. Kendall Drive (SW 88th Street) Cost Estimate 16
Figure 11. Okeechobee Road Short-Term Alternatives 20
Figure 12. Okeechobee Road Medium-Term Alternatives 21

1.0 INTRODUCTION

The Krome Avenue Phase 4 Study was authorized to provide conceptual designs and cost estimates and signal warrant analyzes at the intersections recommended for further study in the Phase 2 and 3 Studies. Conceptual designs and cost estimates were prepared at the following intersections:

- Hainlin Mill Drive (SW 216 Street);
- Quail Roost Drive (SW 200 Street);
- Eureka Drive (SW 184 Street);
- Kendall Drive (SW 88 Street); and
- Okeechobee Road (US 27).

Signal warrant analyses were conducted at the following intersections:

- Epmore Drive (SW 272nd Street);
- Grossman Farm Road (SW 192nd Street);
- Howard Road (SW 136th Street); and
- Okeechobee Road (US 27).

The results and recommendations contained in this report are based on comments and input received from FDOT representatives in the following departments: Environmental Management, Systems Planning, Traffic Operations, and Design.

2.0 Conceptual Design and Cost Estimates

Conceptual designs and cost estimates were prepared at the following intersections:

- Hainlin Mill Drive (SW 216 Street);
- Quail Roost Drive (SW 200 Street);
- Eureka Drive (SW 184 Street);
- Kendall Drive (SW 88 Street); and
- Okeechobee Road (US 27).

In preparing the conceptual designs, the length of turn lanes on Krome Avenue were increased (where necessary) and proposed turn lanes on the intersection side streets were designed to meet FDOT Standard Index 301. The queue storage requirement for the turn lanes on Krome Avenue were based on the 95th-percentile queue length obtained from the 2020 intersection capacity analysis. The queue storage requirements for the turn lanes on intersection side streets were based on the 90th-percentile queue length (non-FIHS facilities) obtained from the 2020 intersection capacity analysis. Table 1 summarizes the queue storage requirements. It is noted that queue storage lengths were capped at 200 feet due to the fact that lengths greater than 200 feet, when added to the taper and deceleration length of the turn lane, begin to look like additional lanes to drivers.

Table 1. Queue Storage Requirements

Intersection	Side Street			Krome Avenue		
	Eastbound Left-Turn Lane	Westbound Right-Turn Lane	Westbound Left-Turn Lane	Northbound Right-Turn Lane	Northbound Left-Turn Lane	Southbound Left-Turn Lane
Hainlin Mill Drive (216th Street)	100 ft	75 ft	75 ft	N/A	50 ft	50 ft
Quail Roost Drive (200th Street)	100 ft	175 ft	75 ft	N/A	50 ft	200 ft
Eureka Drive (184th Street)	50 ft	200 ft	200 ft	200 ft	50 ft	175 ft

In preparing the conceptual designs, aerial photography and right-of-way information provided by the FDOT was used. Conceptual cost estimates were based on previous cost estimates made by the FDOT on Krome Avenue at the intersections of SW 256th Street, SW 192nd Street, SW 168th Street, and SW 136th Street.

2.1 Hainlin Mill Drive (SW 216th Street)

Several alternative approach lane configurations were analyzed for Hainlin Mill Drive at the Krome Avenue intersection. The recommended configuration is shown in Figure 1. Both the east and west approaches of Hainlin Mill Drive have exclusive left-turn lanes that allow for overlapping left-turn movements. The provision of exclusive left-turn lanes will improve the capacity of the intersection and have a positive effect on safety conditions at the intersection.

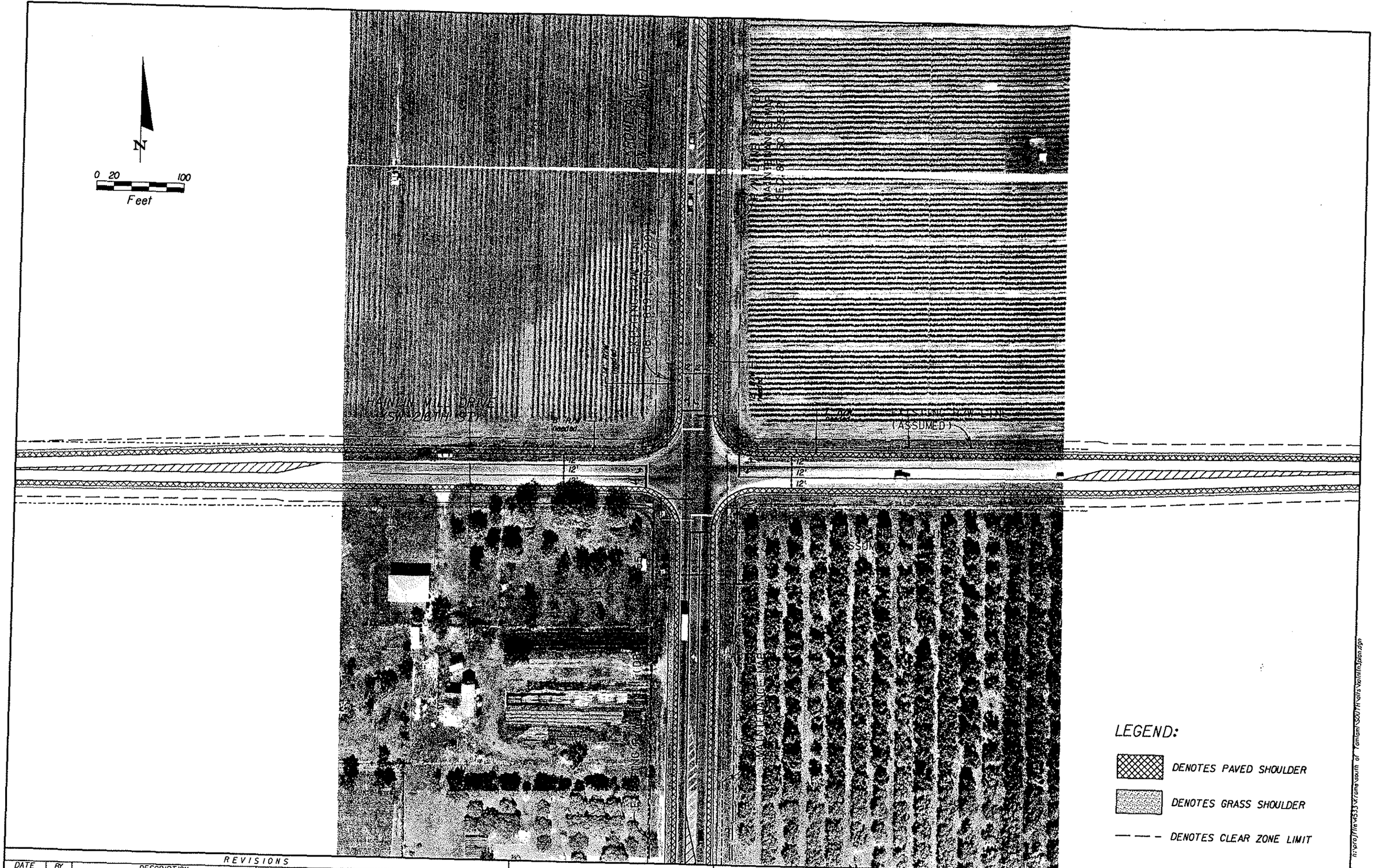
Other features of the recommended design include:

- Increasing the length of the existing left-turn lanes on Krome Avenue to meet the criteria described in FDOT Standard Index 301.
- Providing a 12-foot shoulder on Krome Avenue (5-foot paved, 7-foot grass).
- Providing an 8-foot shoulder on Hainlin Mill Drive (5-foot paved, 3-foot grass).
- The use of 50-foot radius returns at the intersection.
- Showing the impact of a 30-foot clear zone on Krome Avenue. The feasibility of purchasing right-of-way to maintain the clear zone will be decided during the design process.
- Showing the impact of an 18-foot clear zone on Hainlin Mill Drive. The feasibility of purchasing right-of-way to maintain the clear zone will be decided during the design process.

It is noted that the feasibility of using 11-foot lanes and the option of providing offset left-turning movements on Krome Avenue were discussed during the concept evaluation process. It was determined that these issues would be further explored during the design process.

The cost-estimate for the proposed improvement is approximately $734,000. Figure 2 shows a summary of the items used in preparing the cost estimate.

Recommendation: This project should proceed into the design phase.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kittelson & Associates, Inc.
Transportation Planning/Traffic Engineering
110 E. Broward Blvd, Suite 2410
Ft. Lauderdale, FL 33301
Telephone: (954) 765-1245

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

PLAN
KROME AVE & HAINLIN MILL DR
ALTERNATIVE 3

SHEET NO.

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Krome Avenue Phase IV Analysis
Location: Krome Avenue and Hainlin Mill Drive Intersection, Alternative 2
Estimate by: Kittelson & Associates, Inc.
Date: 30-Jan-03

	ITEM NUMBER		ITEM NAME	UNIT	QUANTITY	UNIT PRICE	COST	COMMENT
130	3	2	BORROW	CY	350	$ 6.12	$ 2,142.00	rework shoulders and radius returns
160	4		STAIBIL	SY	6150	$ 2.00	$ 12,300.00	
285	705	7	SHLD BASE	SY	4100	$ 9.00	$ 36,900.00	
285	713	327	WD BASE	SY	2100	$ 23.00	$ 48,300.00	
300	1	3	TACK	GA	4100	$ 1.45	$ 5,945.00	
327	70	5	MILLING	SY	4800	$ 2.50	$ 12,000.00	
334	1	13	SURFACE	TN	500	$ 75.00	$ 37,500.00	
334	1	13	SHLD SUR	TN	400	$ 75.00	$ 30,000.00	
334	1	13	WD SUR	TN	450	$ 75.00	$ 33,750.00	
337	7	5	FC	TN	1150	$ 72.00	$ 82,800.00	
575	1		SOD	SY	3700	$ 1.28	$ 4,736.00	
110	1	1	CLEAR/GRUB	AC	5	$ 20,000.00	$ 100,000.00	(based on previous FDOT estimates)
EX-ITEM			SIGNING, STRIPING, RPMs		1	$ 11,000.00	$ 11,000.00	(based on previous FDOT estimates)
EX-ITEM			WORK ZONE ITEMS		1	$ 51,000.00	$ 51,000.00	(based on previous FDOT estimates)
EX-ITEM			SIGNAL MODIFICATION		1	$ 75,000.00	$ 75,000.00	(two signal poles impacted)
EX-ITEM			MOWING, SEED& MULCH		1	$ 2,500.00	$ 2,500.00	(based on previous FDOT estimates)

TOTAL OF GENERATED ITEM COSTS	$ 545,873.00	
DRAINAGE COSTS	$ 34,000.00	(based on previous FDOT estimates)
TOTAL ROADWAY ITEMS	$ 579,873.00	
TOTAL BRIDGE COSTS	$ -	
SUBTOTAL (PRIOR TO MOT)	$ 579,873.00	
MAINTENANCE OF TRAFFIC (15%)	$ 86,980.95	
SUBTOTAL (PRIOR TO MOBILIZATION)	$ 666,853.95	
MOBILIZATION (10%)	$ 66,685.40	
TOTAL COST OF ESTIMATE	$ 733,539.35	
NEEDED RIGHT-OF-WAY APPROXIMATION	36500 SQ FT	

It is noted that this estimate was prepared using assumptions and values consistent with previous cost estimates made by the FDOT on Krome Avenue. The methodoloy used is based on the Long Range Estimate (LRE) software and a construction cost estimate.
Unit costs are consistent with the previous costestimates made on Krome Avenue (SW 256th St, SW 192nd St, SW 168th St, and SW 136th St).

Figure 2. Cost Estimate for Hainlin Mill Drive (SW 216th Street)

2.2 Quail Roost Drive (SW 200th Street)

The primary recommendations at the intersection of Krome Avenue and Quail Roost Drive are the addition of an exclusive left-turn lane on the west approach and the addition of an exclusive right-turn lane on the east approach of Quail Roost Drive. The recommended configuration is shown in Figure 3. The provision of the exclusive left-turn lane and exclusive right-turn lane will improve the capacity of the intersection and have a positive effect on safety conditions at the intersection.

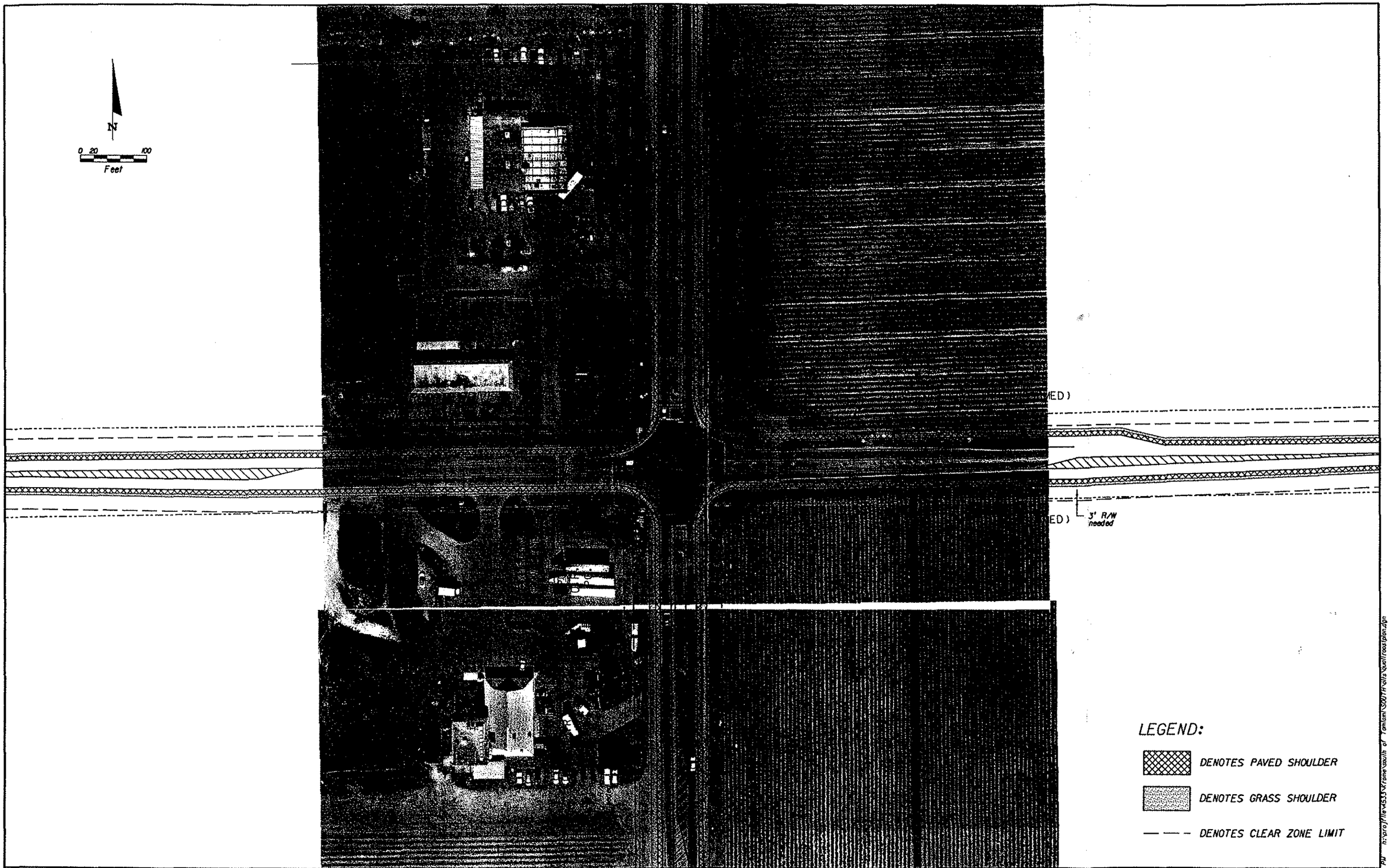
Other features of the recommended design include:

- Increasing the length of the existing left-turn lanes on Krome Avenue to meet the criteria described in FDOT Standard Index 301. This extension resulted in a significantly longer southbound left-turn lane that will be better able to accommodate current and future demand.
- Providing a 12-foot shoulder on Krome Avenue (5-foot paved, 7-foot grass).
- Providing an 8-foot shoulder on Quail Roost Drive (5-foot paved, 3-foot grass).
- The use of 50-foot radius returns at the intersection.
- Showing the impact of a 30-foot clear zone on Krome Avenue. The feasibility of purchasing right-of-way to maintain the clear zone will be decided during the design process.
- Showing the impact of a 24-foot clear zone on Quail Roost Drive. The feasibility of purchasing right-of-way to maintain the clear zone will be decided during the design process.

It is noted that the feasibility of using 11-foot lanes and the option of providing offset left-turning movements on Krome Avenue were discussed during the concept evaluation process. It was determined that these issues would be further explored during the design process.

The cost-estimate for the proposed improvement is approximately $750,000. Figure 4 shows a summary of the items used in preparing the cost estimate.

Recommendation: This project should proceed into the design phase.



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Telephone: (954) 765-1245

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

PLAN
KROME AVE & QUAIL ROOST DR

SHEET NO.

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Krome Avenue Phase IV Analysis
Location: Krome Avenue and Quail Roost Drive
Estimate by: Kittelson & Associates, Inc.
Date: 30-Jan-03

ITEM NUMBER			ITEM NAME	UNIT	QUANTITY	UNIT PRICE	COST	COMMENT
130	3	2	BORROW	CY	370	$ 6.12	$ 2,264.40	rework shoulders and radius returns
160	4		STAIBIL	SY	6000	$ 2.00	$ 12,000.00	
285	705	7	SHLD BASE	SY	4500	$ 9.00	$ 40,500.00	
285	713	327	WD BASE	SY	1600	$ 23.00	$ 36,800.00	
300	1	3	TACK	GA	4100	$ 1.45	$ 5,945.00	
327	70	5	MILLING	SY	6200	$ 2.50	$ 15,500.00	
334	1	13	SURFACE	TN	650	$ 75.00	$ 48,750.00	
334	1	13	SHLD SUR	TN	450	$ 75.00	$ 33,750.00	
334	1	13	WD SUR	TN	350	$ 75.00	$ 26,250.00	
337	7	5	FC	TN	1300	$ 72.00	$ 93,600.00	
575	1		SOD	SY	4500	$ 1.28	$ 5,760.00	
110	1	1	CLEAR/GRUB	AC	5	$ 20,000.00	$ 100,000.00	(based on previous FDOT estimates)
EX-ITEM			SIGNING, STRIPING, RPMs		1	$ 11,000.00	$ 11,000.00	(based on previous FDOT estimates)
EX-ITEM			WORK ZONE ITEMS		1	$ 51,000.00	$ 51,000.00	(based on previous FDOT estimates)
EX-ITEM			SIGNAL MODIFICATION		1	$ 75,000.00	$ 75,000.00	(two signal poles impacted)
EX-ITEM			MOWING, SEED& MULCH		1	$ 2,500.00	$ 2,500.00	(based on previous FDOT estimates)

TOTAL OF GENERATED ITEM COSTS	$ 558,119.40	
DRAINAGE COSTS	$ 34,000.00	(based on previous FDOT estimates)
TOTAL ROADWAY ITEMS	$ 592,119.40	
TOTAL BRIDGE COSTS	$ -	
SUBTOTAL (PRIOR TO MOT)	$ 592,119.40	
MAINTENANCE OF TRAFFIC (15%)	$ 88,817.91	
SUBTOTAL (PRIOR TO MOBILIZATION)	$ 680,937.31	
MOBILIZATION (10%)	$ 68,093.73	
TOTAL COST OF ESTIMATE	$ 749,031.04	
NEEDED RIGHT-OF-WAY APPROXIMATION	23400 SQ FT	

It is noted that this estimate was prepared using assumptions and values consistent with previous cost estimates made by the FDOT on Krome Avenue. The methodoloy used is based on the Long Range Estimate (LRE) software and a construction cost estimate.
Unit costs are consistent with the previous costestimates made on Krome Avenue (SW 256th St, SW 192nd St, SW 168th St, and SW 136th St).

Figure 4. Quail Roost Drive (SW 200th Street) Cost Estimate

2.3 Eureka Drive (SW 184th Street)

The primary recommendations at the intersection of Krome Avenue and Eureka Drive are the addition of an exclusive right-turn lane on the south approach of Krome Avenue (northbound traffic), the addition on an exclusive left-turn lane on the west approach and the addition of an exclusive left-turn lane on the east approach of Eureka Drive. The recommended configuration is shown in Figure 5. The provision of the exclusive right-turn lane on the south approach of Krome Avenue will increase the capacity of the intersection. Adding left-turn lanes on Eureka Drive and realigning the intersection so that the left-turn movements overlap will improve the capacity and overall safety of the intersection.

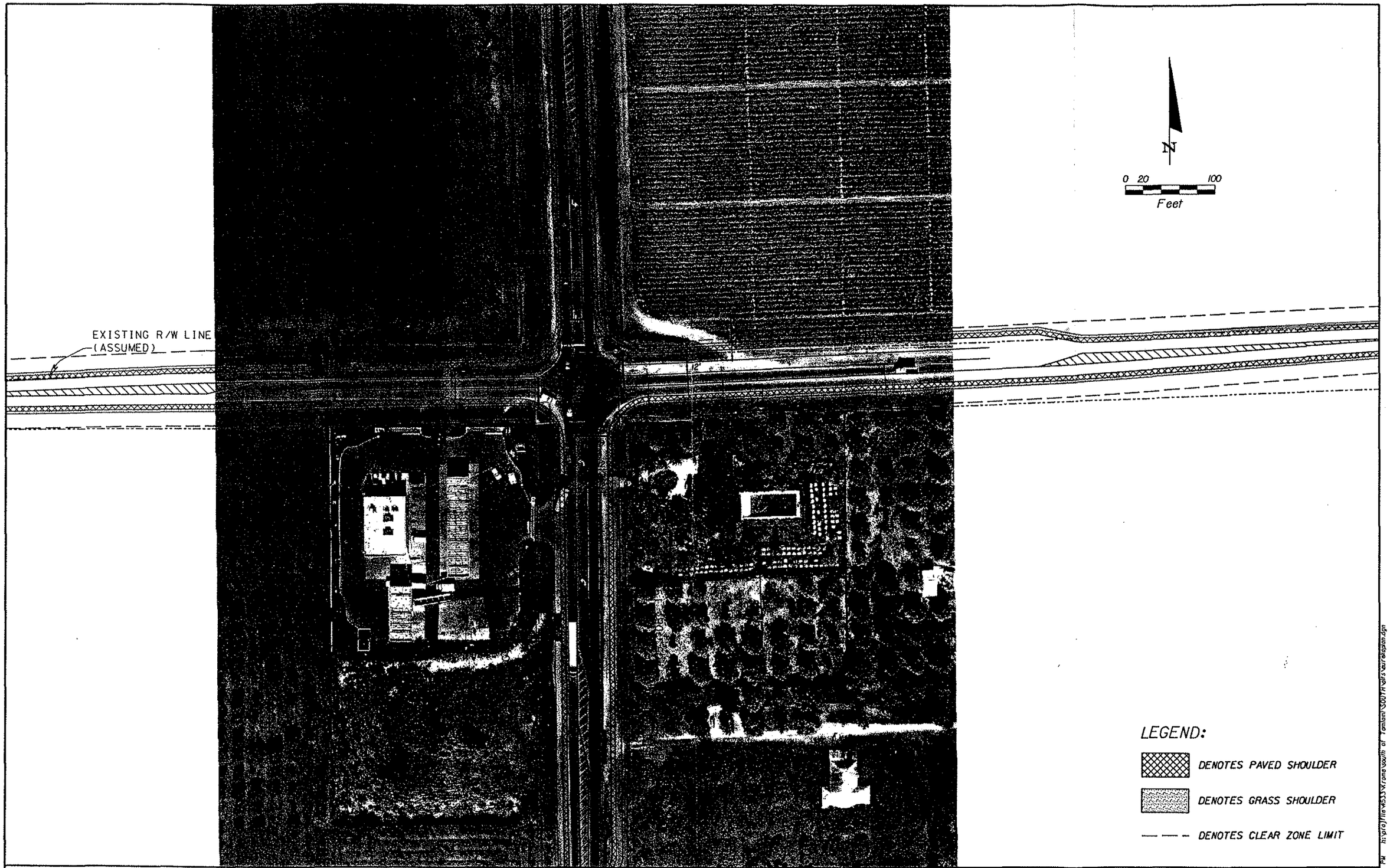
Other features of the recommended design include:

- Increasing the length of the existing left-turn lanes on Krome Avenue to meet the criteria described in FDOT Standard Index 301. This extension resulted in a significantly longer southbound left-turn lane that will be better able to accommodate current and future demand.
- Providing a 12-foot shoulder on Krome Avenue (5-foot paved, 7-foot grass).
- Providing an 8-foot shoulder on Eureka Drive (5-foot paved, 3-foot grass).
- The use of 50-foot radius returns at the intersection.
- Showing the impact of a 30-foot clear zone on Krome Avenue. The feasibility of purchasing right-of-way to maintain the clear zone will be decided during the design process.
- Showing the impact of a 24-foot clear zone on Eureka Drive. The feasibility of purchasing right-of-way to maintain the clear zone will be decided during the design process.

It is noted that the feasibility of using 11-foot lanes and the option of providing offset left-turning movements on Krome Avenue were discussed during the concept evaluation process. It was determined that these issues would be further explored during the design process.

The cost-estimate for the proposed improvement is approximately $917,000. Figure 6 shows a summary of the items used in preparing the cost estimate.

Recommendation: This project should proceed into the design phase.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kittelson & Associates, Inc.
Transportation Planning/Traffic Engineering
110 E. Broward Blvd, Suite 2410
Ft. Lauderdale, FL 33301
Telephone: (954) 765-1245

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

PLAN
KROME AVE & EUREKA DR

SHEET NO.

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Krome Avenue Phase IV Analysis
Location: Krome Avenue and Euraka Drive
Estimate by: Kittelson & Associates, Inc.
Date: 30-Jan-03

	ITEM NUMBER		ITEM NAME	UNIT	QUANTITY	UNIT PRICE	COST	COMMENT
130	3	2	BORROW	CY	400	$ 6.12	$ 2,448.00	rework shoulders and radius returns
160	4		STAIBIL	SY	7600	$ 2.00	$ 15,200.00	
285	705	7	SHLD BASE	SY	4300	$ 9.00	$ 38,700.00	
285	713	327	WD BASE	SY	3300	$ 23.00	$ 75,900.00	
300	1	3	TACK	GA	5100	$ 1.45	$ 7,395.00	
327	70	5	MILLING	SY	5100	$ 2.50	$ 12,750.00	
334	1	13	SURFACE	TN	550	$ 75.00	$ 41,250.00	
334	1	13	SHLD SUR	TN	450	$ 75.00	$ 33,750.00	
334	1	13	WD SUR	TN	650	$ 75.00	$ 48,750.00	
337	7	5	FC	TN	1350	$ 72.00	$ 97,200.00	
575	1		SOD	SY	4300	$ 1.28	$ 5,504.00	
110	1	1	CLEAR/GRUB	AC	5	$ 20,000.00	$ 100,000.00	(based on previous FDOT estimates)
EX-ITEM			SIGNING, STRIPING, RPMs		1	$ 11,000.00	$ 11,000.00	(based on previous FDOT estimates)
EX-ITEM			WORK ZONE ITEMS		1	$ 51,000.00	$ 51,000.00	(based on previous FDOT estimates)
EX-ITEM			SIGNAL MODIFICATION		1	$ 150,000.00	$ 150,000.00	(four signal poles impacted)
EX-ITEM			MOWING, SEED& MULCH		1	$ 2,500.00	$ 2,500.00	(based on previous FDOT estimates)

TOTAL OF GENERATED ITEM COSTS	$ 690,847.00	
DRAINAGE COSTS	$ 34,000.00	(based on previous FDOT estimates)
TOTAL ROADWAY ITEMS	$ 724,847.00	
TOTAL BRIDGE COSTS	$ -	
SUBTOTAL (PRIOR TO MOT)	$ 724,847.00	
MAINTENANCE OF TRAFFIC (15%)	$ 108,727.05	
SUBTOTAL (PRIOR TO MOBILIZATION)	$ 833,574.05	
MOBILIZATION (10%)	$ 83,357.41	
TOTAL COST OF ESTIMATE	$ 916,931.46	
NEEDED RIGHT-OF-WAY APPROXIMATION	48400 SQ FT	

It is noted that this estimate was prepared using assumptions and values consistent with previous cost estimates made by the FDOT on Krome Avenue. The methodoloy used is based on the Long Range Estimate (LRE) software and a construction cost estimate.
Unit costs are consistent with the previous costestimates made on Krome Avenue (SW 256th St, SW 192nd St, SW 168th St, and SW 136th St).

Figure 6. Eureka Drive (SW 184th Street) Cost Estimate

2.4 Kendall Drive (SW 88th Street)

Due to the significant impacts associated with many of the alternatives proposed at this intersection during previous stages of the overall Krome Avenue study, an analysis was conducted to determine the alternative that would improve the capacity of the intersection without requiring major changes to the existing cross section of Krome Avenue. The results of this analysis are shown in Figure 7. As shown in the figure, alternative two consists of the conversion of the north approach (southbound traffic) from a right-turn lane, a through lane, and a left-turn lane to a shared through-right lane and two exclusive left-turn lanes. This provides the most effective increase in capacity while eliminating the need to widen Krome Avenue to a four-lane section through the intersection influence area.

Figure 8 shows the proposed configuration of the intersection and Figure 9 shows the length of the impacted area along Krome Avenue of the alternative (due to the need to transition the through-right lane and shadow the left-turn lanes). The estimated cost of the intersection improvement is approximately $1,011,000 (shown in Figure 10). Due to the potential impacts in the vicinity of the intersection (drainage canal, grade issues, wildlife), it was determined that this alternative should be further studied during a Project Development and Environment (PD&E) Study. It was also noted during the review process that the right-of-way boundaries being shown should be confirmed during the PD&E Study process.

Recommendation: This project should be further studied during a PD&E Study.

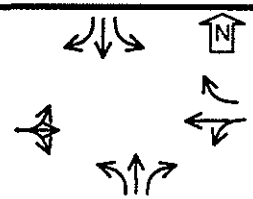
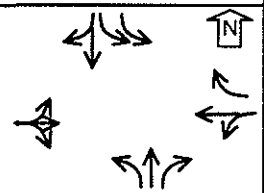
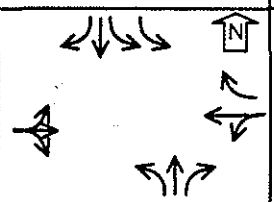
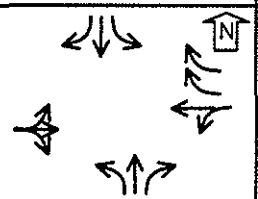
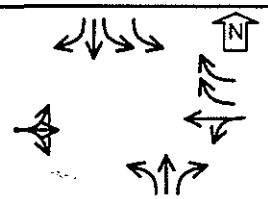
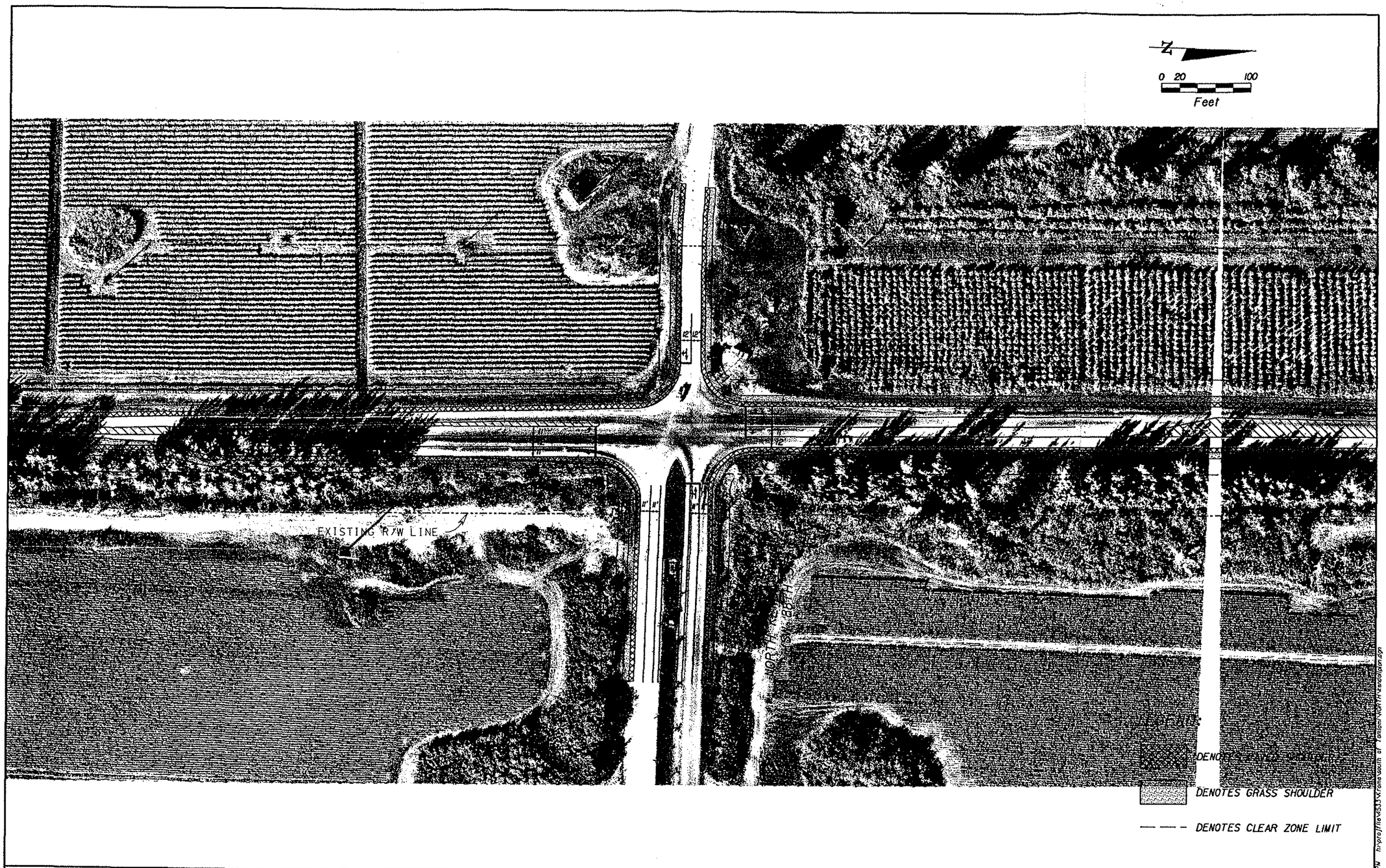
Alternative #	Added lanes or Improvements	Configuration	2010		2020		Construction Needs / Impacts
			Critical v/c	LOS	Critical v/c	LOS	
1	None		1.14	D	1.2	F	None
2	Double SB left-turns. Merge southbound through- and right-turn lane.		0.94	C	0.99	D	Realign southbound lane configurations. Add double southbound left-turn lanes. Combine southbound through lane with right-turn lane and construct southbound departure lane.
3	Double SB left-turns		0.94	C	0.98	D	Construct double southbound left turns. Realign intersection.
4	Double WB right-turns		1.11	D	1.21	E	Construct double westbound right turns. Add northbound departure lane.
5	Double SB left-turns. Double WB right-turns		0.81	C	0.89	C	Construct double southbound left turns. Construct double westbound right turns. Add northbound departure lane, realign intersection

Figure 7. Krome Avenue/Kendall Drive Level of Service Summary



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Kittelson & Associates, Inc.
Transportation Planning/Traffic Engineering
110 E. Broward Blvd, Suite 2410
Ft. Lauderdale, FL 33301
Telephone: (954) 765-1245

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

PLAN
KROME AVE & N. KENDALL DR

SHEET NO.

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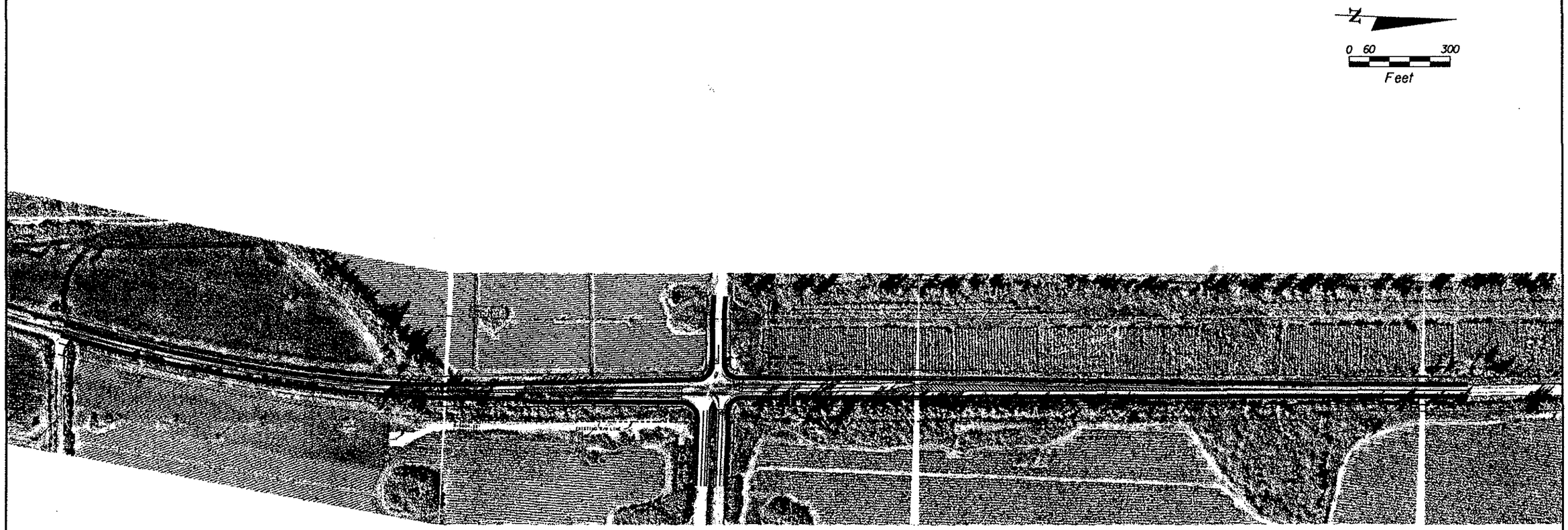

LEGEND:

DENOTES PAVED SHOULDER

DENOTES GRASS SHOULDER

— — — DENOTES CLEAR ZONE LIMIT

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Ft. Lauderdale, FL 33301
Telephone: (954) 765-1245

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

PLAN
KROME AVE & N. KENDALL DR

SHEET NO.

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Krome Avenue Phase IV Analysis
Location: Krome Avenue and Kendall Drive
Estimate by: Kittelson & Associates, Inc.
Date: 30-Jan-03

	ITEM NUMBER		ITEM NAME	UNIT	QUANTITY	UNIT PRICE	COST	COMMENT
130	3	2	BORROW	CY	450	$ 6.12	$ 2,754.00	rework shoulders and radius returns
160	4		STABIL	SY	6250	$ 2.00	$ 12,500.00	
285	705	7	SHLD BASE	SY	5100	$ 9.00	$ 45,900.00	
285	713	327	WD BASE	SY	1150	$ 23.00	$ 26,450.00	
300	1	3	TACK	GA	4200	$ 1.45	$ 6,090.00	
327	70	5	MILLING	SY	17300	$ 2.50	$ 43,250.00	
334	1	13	SURFACE	TN	1750	$ 75.00	$ 131,250.00	
334	1	13	SHLD SUR	TN	550	$ 75.00	$ 41,250.00	
334	1	13	WD SUR	TN	250	$ 75.00	$ 18,750.00	
337	7	5	FC	TN	3000	$ 72.00	$ 216,000.00	
575	1		SOD	SY	7200	$ 1.28	$ 9,216.00	
110	1	1	CLEAR/GRUB	AC	5	$ 20,000.00	$ 100,000.00	(based on previous FDOT estimates)
EX-ITEM			SIGNING, STRIPING, RPMs		1	$ 11,000.00	$ 11,000.00	(based on previous FDOT estimates)
EX-ITEM			WORK ZONE ITEMS		1	$ 51,000.00	$ 51,000.00	(based on previous FDOT estimates)
EX-ITEM			SIGNAL MODIFICATION		1	$ 50,000.00	$ 50,000.00	(singal head and phasing modification)
EX-ITEM			MOWING, SEED& MULCH		1	$ 2,500.00	$ 2,500.00	(based on previous FDOT estimates)

TOTAL OF GENERATED ITEM COSTS	$ 765,410.00	
DRAINAGE COSTS	$ 34,000.00	(based on previous FDOT estimates)
TOTAL ROADWAY ITEMS	$ 799,410.00	
TOTAL BRIDGE COSTS	$ -	
SUBTOTAL (PRIOR TO MOT)	$ 799,410.00	
MAINTENANCE OF TRAFFIC (15%)	$ 119,911.50	
SUBTOTAL (PRIOR TO MOBILIZATION)	$ 919,321.50	
MOBILIZATION (10%)	$ 91,932.15	
TOTAL COST OF ESTIMATE	$ 1,011,253.65	
NEEDED RIGHT-OF-WAY APPROXIMATION	3100 SQ FT	

It is noted that this estimate was prepared using assumptions and values consistent with previous cost estimates made by the FDOT on Krome Avenue. The methodoloy used is based on the Long Range Estimate (LRE) software and a construction cost estimate.
Unit costs are consistent with the previous costestimates made on Krome Avenue (SW 256th St, SW 192nd St, SW 168th St, and SW 136th St).

Figure 10. Kendall Drive (SW 88th Street) Cost Estimate

2.5 Okeechobee Road (US 27)

A signal warrant analysis at the Krome Avenue/Okeechobee Road intersection was conducted for this study and is presented in Section 3.4 of this report. Due to the significant geometric and driver related issues associated with the Krome Avenue/Okeechobee Road intersection, this analysis considered a series of short-term alternatives that improve the visibility of the intersection and midterm alternatives that alert drivers to the presence of the intersection through the use of physical and visual queues. The recommended short-term alternatives are shown in Figure 11 and the recommended medium-term alternatives are shown in Figure 12. The remainder of this section describes the assumptions used in determining the placement of recommended treatments.

2.5.1 Short Term Alternatives

The purpose of the following treatments is to improve the visibility of the existing intersection. Treatments include:

- Flashing signage warning of approaching intersection
    1. Detector based (activated by passing motorists at a distance upstream of the intersection)
    2. Solar powered for independent operation.
- Striping
    1. Verify that existing striping is suitable and in adequate repair. Consider raised pavement markers.

Flashing Warning Signs

For sign placement, assume a travel speed of 60 mph (conservative for speeding or wandering attention) along US 27. This gives a deceleration-to-stop distance of 530 feet. Therefore, signs should be placed a minimum of 530 feet in advance of the intersection. If the distance of 530 feet is located in a turn lane or taper, the sign may be moved further upstream. Each sign will cost approximately $5000 (including installation). This relatively high cost is due to the solar power source being included.

From the North on US 27

The distance at which to locate the flashing warning sign is measured from the intersection of Krome Avenue (the left turn lane) from the south on US 27 with the southbound through lane of US 27. A distance of 530 feet back from this point is in the right turn lane taper on US 27 and also within the influence area of the T-intersection upstream of the Krome Avenue intersection. Therefore, the flashing sign should be located 1,200 feet north of the intersection of the left-turn roadway into Krome Avenue and the southbound lanes of US 27.

From the South on US 27

Again, the 530 feet is located in the turn lane taper from US 27 (the left-turn lane to Krome Avenue). Therefore, the sign should be located in the nearest typical section approximately 800 feet from the Krome Avenue intersection.

On Krome Avenue
A distance of 530 feet from the intersection of the left-turning roadway of Krome Avenue and US 27 will be on a curved section of roadway. To ensure an undistracted viewpoint, the sign should be located 750 feet south west of the intersection.

Loop Detectors
Assuming 3 seconds between the activation of the sign and the perception of the sign by the driver. The travel speed of 60 mph is equivalent to 88 feet/second and so the distance required to perceive the sign is approximately 300 feet. Therefore, the loop detector should be set 300 feet upstream of the warning sign it will trigger on all three legs of the intersection. Each loop detector will cost approximately $3000.

Striping
The necessity of enhanced striping will depend on the actual site conditions, especially at night. If the existing striping is not highly reflective, conventional high reflectivity striping may suffice to treat the problem. Consideration should also be given to using raised pavement markers through the intersection area. US 27 has priority for enhanced striping since that road has a straight, high-speed alignment compared to the t-intersection encountered by Krome Avenue.

From the South on US 27
The enhanced striping should commence at the same location as the proposed loop detector for the flashing warning signs and should continue through to the northern side of the minor road t-junction

From the North on US 27
The enhanced striping should again commence at the loop detector but should continue to the end of the additional lane to the south. (Note - The exact distance to the end of that lane is not known from the aerial available).

2.5.2 Medium-term Alternatives

Lighting
Lighting would be placed on all roadway approaches. Full illumination should commence at the flashing intersection warning signs with appropriate advance illumination to provide lighting transition. A detailed lighting analysis should be performed to determine the luminaries and spacing needs for this alternative. Costs could not be determined due to the uncertain requirements of the site.

Rumble Strips
Rumble strips should be placed in sets comprised of at least 5 individual strips to differentiate them from isolated imperfections in the road surface. These sets should be placed on all approaches at the loop detectors for the warning signs and 300 feet (approximately 3 seconds traveling time at 60 mph) upstream of these loop detectors. The cost of the rumble strips is approximately $1000 per strip ($5000+ per set)

Cross-sectional Treatments

Visual Gateway

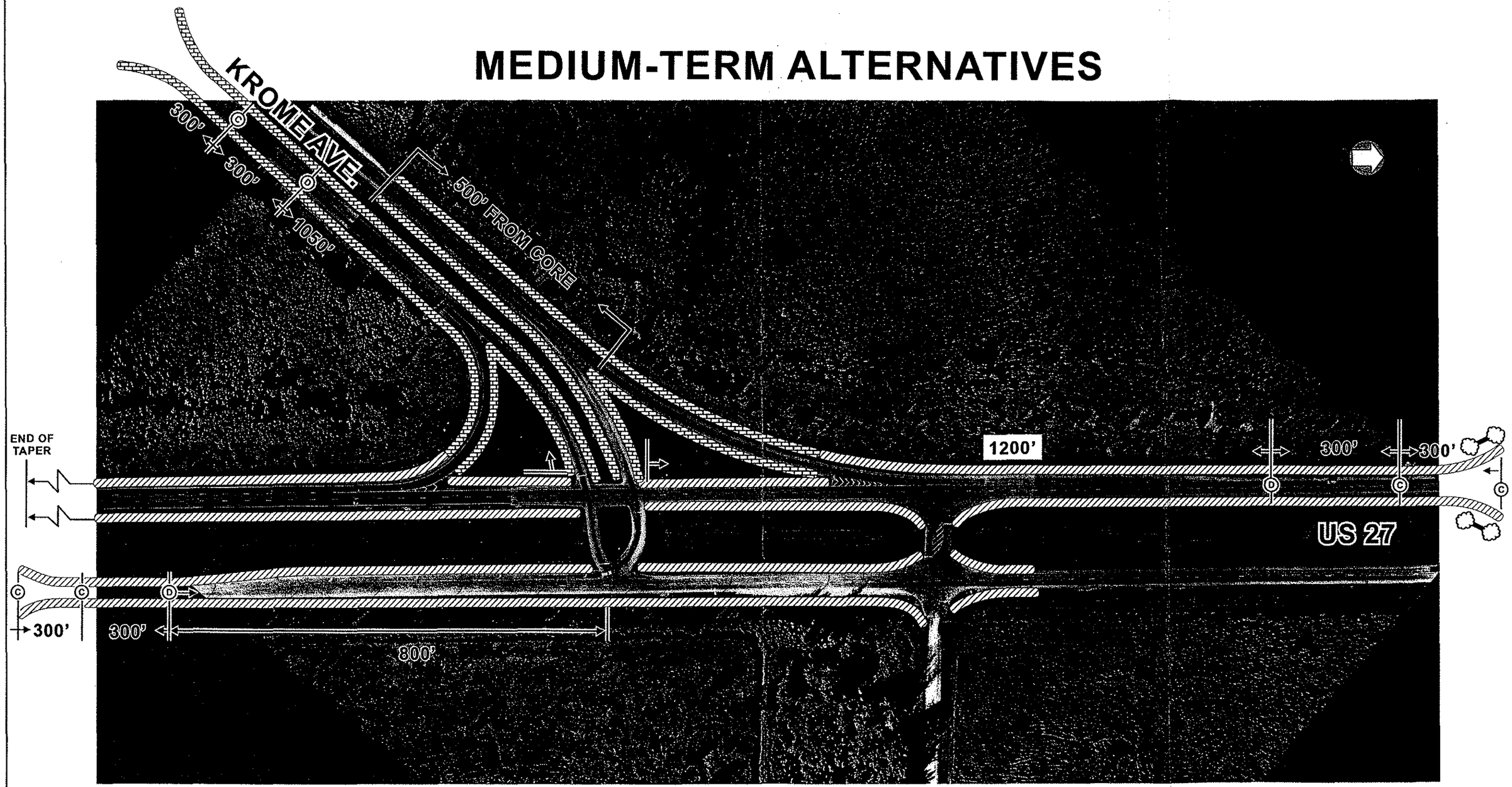
The visual gateway treatment comprising landscaping and signage should be located at the edge of "clear zone" of the roadway without intruding into it. This treatment is most useful for signaling the end of a lengthy stretch of rural roadway conditions on a through road. As such, this treatment is recommended only for the southbound carriageway on US 27. Therefore, a visual gateway should be placed at the location of the first rumble strip on the northern approach (300 feet upstream of loop detectors) to the intersection. The cost of the gateway treatment will be approximately $5000 (it is noted that the cost of a gateway treatment is very dependent on the materials used and vegetation planted).

Visual Funnel

The visual funnel effect created by the introduction of curbing is appropriate for both US 27 and Krome Avenue, although priority should be given to US 27. To achieve the desired visual funnel effect, the curbing is required on both sides of the roadway. For all approaches, the curbing should commence at the upstream set of rumble strips. At the upstream end the curbing should be flared from the edge of the clear zone to the edge of the shoulder. Over the remainder of the curb length the alignment will abut the shoulder lane.

Recommendation: The maintenance department and the traffic operations division should study the need for and feasibility of the short-term and medium-term alternatives.

MEDIUM-TERM ALTERNATIVES



(C) = RUMBLE STRIP SET

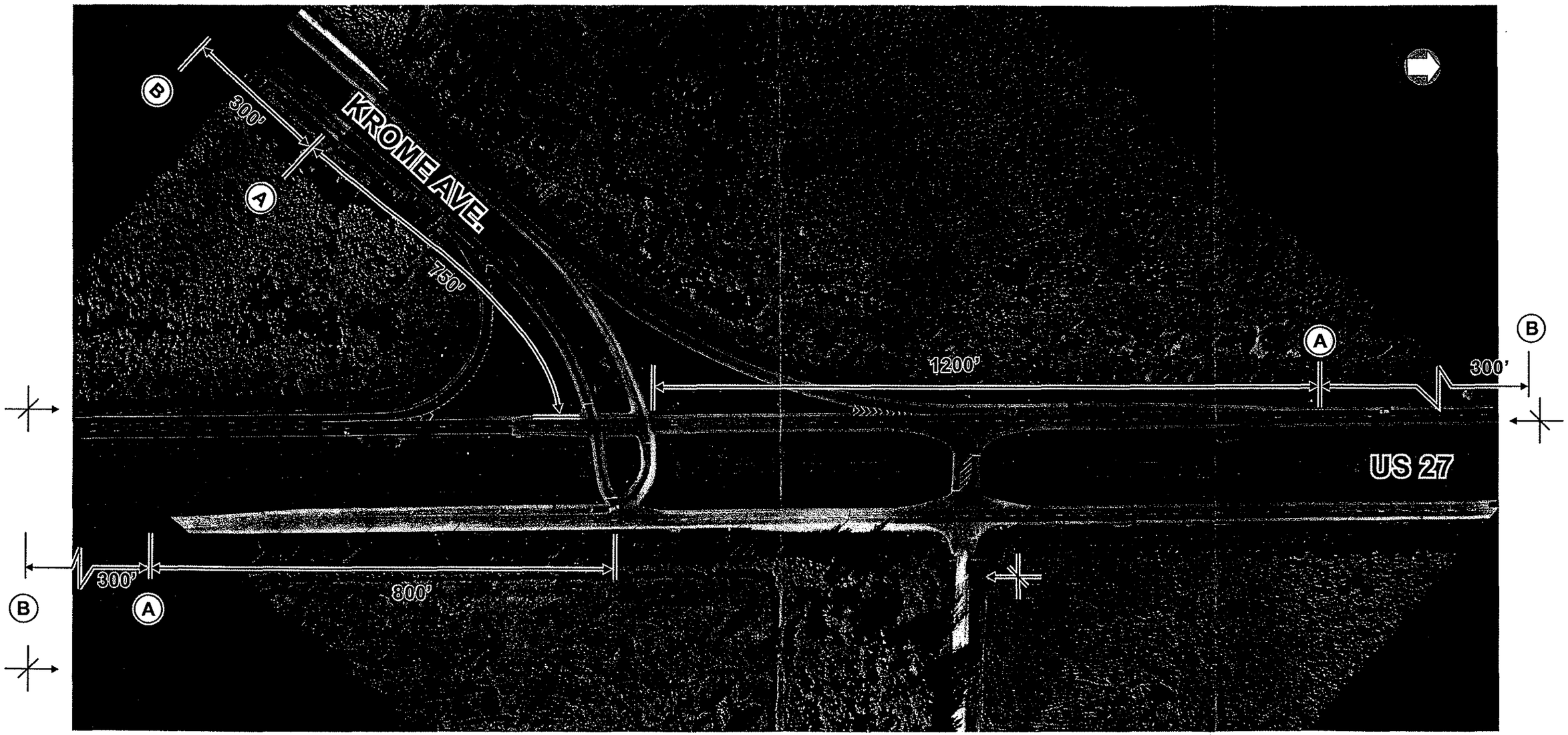
(D) = EDGE OF FULL ILLUMINATION ZONE

= HIGH PRIORITY CURBING

= LOW PRIORITY CURBING

= GATEWAY TREATMENT

SHORT-TERM ALTERNATIVES



(A) = INTERSECTION WARNING SIGN WITH FLASHERS

(B) = LOOP DETECTOR

= BEGINNING/END OF REFLECTIVE STRIPING/ RAISED PAVEMENT MARKERS

3.0 SIGNAL WARRANT ANALYSIS

Based on the recommendations made in the Krome Avenue Phase 2 and 3 reports, signal warrant analyses were conducted at the following intersections:

- Epmore Drive (SW 272nd Street);
- Grossman Farm Road (SW 192nd Street);
- Howard Road (SW 136th Street); and
- Okeechobee Road (US 27).

The signal warrant methodology as outlined in the year *2000 Manual of Uniform Traffic Control Devices* (MUTCD) was used for the signal warrant analysis. The methodology is a guideline to assist traffic engineers in determining when a traffic signal should be installed or removed. The warrant analyses considered traffic volumes and crash experience at the study intersections that were based on conditions found during an average day. It is noted that the FDOT Manual on Uniform Traffic Studies (MUTS) was also used to provide guidance in conducting this study.

Table 2 provides a summary of the results of the applicable signal warrants that were analyzed at the study intersections. For the purpose of this study, Krome Avenue was considered the major road except at its intersection with Okeechobee Road, where Okeechobee Road was considered the major road.

As shown in Table 2, the four-hour warrant was met for all of the intersections, whereas the eight-hour warrant was only met for the Krome Avenue/ Okeechobee Road intersection. None of the intersections met the warrant for a signal based on crash experience. Appendix A contains the signal warrant analysis worksheets and crash diagrams for each of the study intersections.

Table 2. Signal Warrant Analysis Summary

Warrant #	Description	Epmore Drive/ SW 272nd	Grossman Farm Road/ SW 192nd	Howard Drive/ SW 136th	Okeechobee Road/ US27
1	8-Hour Vehicular Volume	No*	No*	No*	Yes*
2	4-Hour Vehicular Volume	Yes	Yes	Yes	Yes
7	Crash Experience	No	No	No	No
Overall	**Recommendation for a traffic signal**	**No**	**No**	**No**	**No**

*Condition A was analyzed for 100%, 80%, and 70% conditions.

The following is a summary of the potential signal warrants and their applicability to the Krome Avenue Corridor:

Warrant 1, Eight-Hour Vehicular Volume:

Warrant 1 requires that a certain level of traffic be maintained on the major and minor street for each of any 8 hours of an average day. The major street and minor-street volumes shall be the same 8 hours for each condition. The two conditions relevant to this study is as follows:

- Condition A is intended for application where a large volume of intersecting traffic is the principle reason to consider installing a traffic control signal.
- Condition B is intended for application where the traffic volume on the major street is so heavy that traffic on the minor street suffers excessive delay or conflict in entering the major stream.

Warrant 2, Four-Hour Vehicular Volume:

Warrant 2 requires that a certain level of traffic be maintained on the major and minor street for each of any 4 hours of an average day. Warrant 2 states that 80 vehicles per hour (vph) apply as the lower threshold volume for a minor street approach.

Warrant 3, Peak Hour:

Warrant 3 is intended for use at a location where traffic conditions are such that for a minimum of one hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. The MUTCD states, "*this signal warrant shall be applied only in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.*" Warrant 3 is not applicable to the study intersections along Krome Avenue.

Warrant 4, Pedestrian Volume:

This warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street. Warrant 4 is not applicable to the study intersections along Krome Avenue.

Warrant 5, School Warrant:

This warrant is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic control signal. Warrant 5 is not applicable to the study intersections along Krome Avenue.

Warrant 6, Coordinated Signal System:

Progressive movement in a coordinated system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles. Warrant 6 is not applicable to the study intersections along Krome Avenue.

Warrant 7, Crash Experience:

The Crash Experience conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal. Criteria for this warrant include the types of crashes (five crashes within 12 months) susceptible to correction by a traffic signal.

Warrant 8, Roadway Network:

Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network. Warrant 8 is not applicable to the study intersections along Krome Avenue.

3.1 Epmore Drive (SW 272nd Street) Analysis

3.1.1 Eight-Hour Vehicular Volume

As shown in Appendix A, the intersection of Krome Avenue and Epmore Drive does not meet the warrant for a signal based on the eight-hour vehicular volume. This is based on the warrant analysis conducted for Condition A. Condition B was not analyzed because the delay suffered by the minor street approaches was not considered significant. This finding was based on field reviews as well as peak hour level of service analyses conducted at the intersection.

3.1.2 Four-Hour Vehicular Volume

The warrant based on the four-hour vehicular volume is met for a total of four hours during the day. The worksheet for the four-hour vehicular volume warrant is summarized in Appendix A.

3.1.3 Crash Experience

As indicated in Table 3, the intersection of Krome Avenue and Epmore Drive did not experience five or more crashes susceptible to correction by a traffic signal within a 12-month period. Crashes susceptible to correction by a traffic signal typically include angle and left-turn crashes. Appendix A contains a detailed crash diagram for the Krome Avenue and Epmore Drive intersection.

Table 3: Crash Summary for Krome Avenue and Epmore Drive

Crash Type	Analysis Year				
	1995	1996	1997	1998	1999
Rear End			3		
Angle	1	2	2	3	3
Left Turn			1		
Sideswipe	1			1	
Others				1	1
Total	**2**	**2**	**6**	**5**	**4**

3.1.4 Signal Warrant Conclusion

A signal is not recommended at the intersection of Krome Avenue and Epmore Drive. This conclusion was based on the fact that signal warrants were not met for the eight-hour and crash experience analyses.

3.2 Grossman Farm Road (SW 192nd Street) Analysis

3.2.1 Eight-Hour Vehicular Volume

As shown in Appendix A, the intersection of Krome Avenue and Grossman Farm Road does not meet the warrant for a signal based on the eight-hour vehicular volumes. This is based on the warrant analysis conducted for Condition A. Condition B was not analyzed because the delay suffered by the minor street approaches was not considered significant. This finding was based on field reviews as well as peak hour level of service analyses conducted at the intersection.

3.2.2 Four-Hour Vehicular Volume

The warrant based on the four-hour vehicular volumes is met for a total of thirteen hours during the day. The worksheet for the four-hour vehicular volume warrant is summarized in Appendix A.

3.2.3 Crash Experience

As indicated in Table 4, the intersection of Krome Avenue and Grossman Farm Road did not experience five or more crashes susceptible to correction by a traffic signal within a 12-month period. Crashes susceptible to correction by a traffic signal typically include angle and left-turn crashes. Appendix A contains a detailed crash diagram for the Krome Avenue and Grossman Farm Road intersection.

Table 4: Crash Summary for Krome Avenue and Grossman Farm Road

Crash Type	Analysis Year				
	1995	1996	1997	1998	1999
Rear End	1	1		1	
Angle		1		1	2
Left Turn			1		1
Right Turn			1		
Sideswipe			1	1	
Others	1	1			2
Total	**2**	**3**	**3**	**3**	**5**

3.2.4 Signal Warrant Conclusion

A signal is not recommended at the intersection of Krome Avenue and Grossman Farm Road. This conclusion was principally based on the fact that the signal warrants were not met for the eight-hour and crash experience analyses.

3.3 Howard Road (SW 136th Street) Analysis

3.3.1 Eight-Hour Vehicular Volume

As shown in Appendix A, the intersection of Krome Avenue and Howard Road does not meet the warrant for a signal based on the eight-hour vehicular volumes. This is based on the warrant analysis conducted for Condition A. Condition B was not analyzed because the delay suffered by the minor street approaches was not considered significant. This finding was based on field reviews as well as peak hour level of service analyses conducted at the intersection.

3.3.2 Four-Hour Vehicular Volume

The warrant based on the four-hour vehicular volumes is met for a total of thirteen hours during the day. The worksheet for the four-hour vehicular volume warrant is summarized in Appendix A.

3.3.3 Crash Experience

As indicated in Table 5, the intersection of Krome Avenue and Howard Road did not experience five or more crashes susceptible to correction by a traffic signal within a 12-month period. Crashes susceptible to correction by a traffic signal typically include angle and left-turn crashes. Appendix A contains a detailed crash diagram for the Krome Avenue and Howard Road intersection.

Table 5: Crash Summary for Krome Avenue and Howard Road

Crash Type	Analysis Year				
	1995	1996	1997	1998	1999
Rear End	2				
Angle	1	2	1		1
Left Turn	1	1			
Sideswipe					1
Others	1			1	1
Total	**5**	**3**	**1**	**1**	**3**

3.3.4 Signal Warrant Conclusion

A signal is not recommended at the intersection of Krome Avenue and Howard Road. This conclusion was principally based on the fact that the signal warrants were not met for the eight-hour and crash experience analyses.

3.4 Okeechobee Road (US 27) Analysis

3.4.1 Eight-Hour Vehicular Volume

For the analysis of Krome Avenue and Okeechobee Road, the vehicles performing a right turn from Krome Avenue to go east on Okeechobee Road as well as the vehicles making a right turn from Okeechobee Road to travel south on Krome Avenue were removed from the analysis. This is based on the geometric layout of the intersection that contains separate right-turn lanes at the intersection. As shown in Appendix A, the intersection of Krome Avenue and Okeechobee Road / US 27 meets the warrant for a signal based on the eight-hour vehicular volumes.

3.4.2 Four-Hour Vehicular Volume

The warrant based on the four-hour vehicular volumes is also met for a total of fifteen hours during the day.

3.4.3 Crash Experience

As indicated in Table 6, the intersection of Krome Avenue and Okeechobee Road did not experience five or more crashes susceptible to correction by a traffic signal within a 12-month period. Crashes susceptible to correction by a traffic signal typically include angle and left-turn crashes. Appendix A contains a detailed crash diagram for the Krome Avenue and Okeechobee Road intersection.

Table 6: Crash Summary for Krome Avenue and Okeechobee Road

Crash Type	Analysis Year				
	1995	1996	1997	1998	1999
Rear End	1	2	1	3	1
Angle		3	1	1	2
Left Turn					1
Sideswipe					1
Others					4
Total	1	5	2	4	9

3.4.4 Signal Warrant Conclusion

A signal is not recommended at the intersection of Krome Avenue and Okeechobee Road. The following is a list of rationale for justifying the recommendation not to install a traffic signal:

- The crash warrant is not met. A signal at Krome Avenue and Okeechobee Road may increase the number of crashes;
- Unusual geometric layout of the intersection;
- Rural environment of the intersection;
- High speeds along Okeechobee Road;
- Driver expectancy along Okeechobee Road; and
- Infrequent presence of signals along Okeechobee Road

Appendix A
Signal Warrant Analysis Worksheets

Krome Avenue &
Epmore Drive (SW 272nd Street)

KITTELSON & ASSOCIATES, INC.
110 E Broward Blvd, Suite 2410
Ft Lauderdale, Fl, 33301
Tel: (954) 735 1245
Fax: (954) 735 9025

Project #: 4533/7
Project Name: Krome Avenue Phase IV
Analyst: Marais Lombard
Date: 2/11/2003
File: H:\PROJFILE\4533\Task 7 - Krome Phase 4\Task1-Signal Warrant Analysis\Signal Warrants\[Howard_15th]Warrant Summary
Intersection: Krome Avenue & Epmore Drive (SW 272nd Dr)
Scenario: Existing - January 15, 2003

Warrant Summary

Warrant	Name	Analyzed?	Met?
#1	Eight-Hour Vehicular Volume	Yes	No
#2	Four-Hour Vehicular volume	Yes	Yes
#3	Peak Hour	No	-
#4	Pedestrian Volume	No	-
#5	School Crossing	No	-
#6	Coordinated Signal System	No	-
#7	Crash Experience	Yes	No
#8	Roadway Network	No	-

Input Parameters

Volume Adjustment Factor =	1.0
North-South Approach =	Major
East-West Approach =	Minor
Major Street Thru Lanes =	1
Minor Street Thru Lanes =	1
Speed > 40 mph?	Yes
Population < 10,000?	Yes
Warrant Factor	70%
Peak Hour or Daily Count?	Daily

Raw Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	26	40	2	3
1:00 AM	2:00 AM	7	30	3	3
2:00 AM	3:00 AM	27	18	0	3
3:00 AM	4:00 AM	14	30	2	4
4:00 AM	5:00 AM	47	47	1	5
5:00 AM	6:00 AM	148	85	7	9
6:00 AM	7:00 AM	665	236	19	55
7:00 AM	8:00 AM	658	608	47	92
8:00 AM	9:00 AM	460	559	45	60
9:00 AM	10:00 AM	388	439	21	42
10:00 AM	11:00 AM	390	381	30	41
11:00 AM	12:00 PM	446	524	24	47
12:00 PM	1:00 PM	499	486	29	47
1:00 PM	2:00 PM	476	511	37	51
2:00 PM	3:00 PM	554	470	32	95
3:00 PM	4:00 PM	509	570	44	92
4:00 PM	5:00 PM	550	716	34	82
5:00 PM	6:00 PM	491	798	72	72
6:00 PM	7:00 PM	382	587	43	59
7:00 PM	8:00 PM	238	285	15	26
8:00 PM	9:00 PM	216	248	16	30
9:00 PM	10:00 PM	158	143	11	27
10:00 PM	11:00 PM	109	121	10	15
11:00 PM	12:00 AM	64	81	1	17

Analysis Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	26	40	2	3
1:00 AM	2:00 AM	7	30	3	3
2:00 AM	3:00 AM	27	18	0	3
3:00 AM	4:00 AM	14	30	2	4
4:00 AM	5:00 AM	47	47	1	5
5:00 AM	6:00 AM	148	85	7	9
6:00 AM	7:00 AM	665	236	19	55
7:00 AM	8:00 AM	658	608	47	92
8:00 AM	9:00 AM	460	559	45	60
9:00 AM	10:00 AM	388	439	21	42
10:00 AM	11:00 AM	390	381	30	41
11:00 AM	12:00 PM	446	524	24	47
12:00 PM	1:00 PM	499	486	29	47
1:00 PM	2:00 PM	476	511	37	51
2:00 PM	3:00 PM	554	470	32	95
3:00 PM	4:00 PM	509	570	44	92
4:00 PM	5:00 PM	550	716	34	82
5:00 PM	6:00 PM	491	798	72	72
6:00 PM	7:00 PM	382	587	43	59
7:00 PM	8:00 PM	238	285	15	26
8:00 PM	9:00 PM	216	248	16	30
9:00 PM	10:00 PM	158	143	11	27
10:00 PM	11:00 PM	109	121	10	15
11:00 PM	12:00 AM	64	81	1	17

Warrant # 1- Eight Hour Volume

Traffic Volumes

Hour		Major Street		Minor Street		
Begin	End	NB	SB	EB	WB	
12:00 AM	1:00 AM	26	40	2	3	
1:00 AM	2:00 AM	7	30	3	3	
2:00 AM	3:00 AM	27	18	0	3	
3:00 AM	4:00 AM	14	30	2	4	
4:00 AM	5:00 AM	47	47	1	5	
5:00 AM	6:00 AM	148	85	7	9	
6:00 AM	7:00 AM	665	236	19	55	
[redacted]						
8:00 AM	9:00 AM	460	559	45	60	
9:00 AM	10:00 AM	388	439	21	42	
10:00 AM	11:00 AM	390	381	30	41	
11:00 AM	12:00 PM	446	524	24	47	
12:00 PM	1:00 PM	499	486	29	47	
1:00 PM	2:00 PM	476	511	37	51	
[redacted]						
5:00 PM	6:00 PM	491	798	72	72	
6:00 PM	7:00 PM	382	587	43	59	
7:00 PM	8:00 PM	238	285	15	26	
8:00 PM	9:00 PM	216	248	16	30	
9:00 PM	10:00 PM	158	143	11	27	
10:00 PM	11:00 PM	109	121	10	15	[redacted]
11:00 PM	12:00 AM	64	81	1	17	70% Warrant Met

Calculations

Combined Major Street	Higher Minor Street	Major Plus Minor	Hourly Rank	Condition A 100%	Condition A 80%	Condition A 70%	Condition B 100%	Condition B 80%	Condition B 70%
66	3	69	21	N	N	N	N	N	N
37	3	40	24	N	N	N	N	N	N
45	3	48	22	N	N	N	N	N	N
44	4	48	22	N	N	N	N	N	N
94	5	99	20	N	N	N	N	N	N
233	9	242	18	N	N	N	N	N	N
901	55	956	11	N	N	N	N	N	Yes
1266	92	1358	2	N	N	N	Yes	Yes	Yes
1019	60	1079	6	N	N	N	N	Yes	Yes
827	42	869	12	N	N	N	N	N	N
771	41	812	13	N	N	N	N	N	N
970	47	1017	10	N	N	N	N	N	N
985	47	1032	8	N	N	N	N	N	N
987	51	1038	7	N	N	N	N	N	N
1024	95	1119	5	N	N	N	Yes	Yes	Yes
1079	92	1171	4	N	N	N	Yes	Yes	Yes
1266	82	1348	3	N	N	N	Yes	Yes	Yes
1289	72	1361	1	N	N	N	N	Yes	Yes
969	59	1028	9	N	N	N	N	N	Yes
523	26	549	14	N	N	N	N	N	N
464	30	494	15	N	N	N	N	N	N
301	27	328	16	N	N	N	N	N	N
230	15	245	17	N	N	N	N	N	N
145	17	162	19	N	N	N	N	N	N
				0	0	0	4	6	8

Number of lanes for moving traffic on each approach (Major Street)	1
Number of lanes for moving traffic on each approach (Minor Street)	1
Warrant Factor	70%
Row Index for VLOOKUP	1

Lookup Table

Condition A - Minimum Vehicular Volume

	Lanes		Combined Major Street			Higher Minor Street		
Index	Major Street	Minor Street	100%	80%	70%	100%	80%	70%
1	1	1	500	400	350	150	120	105
2	2 or more	1	600	480	420	150	120	105
3	2 or more	2 or more	600	480	420	200	160	140
4	1	2 or more	500	400	350	200	160	140

Condition B - Interruption of Continuous Traffic

	Lanes		Combined Major Street			Higher Minor Street		
Index	Major Street	Minor Street	100%	80%	70%	100%	80%	70%
1	1	1	750	600	525	75	60	53
2	2 or more	1	900	720	630	75	60	53
3	2 or more	2 or more	900	720	630	100	80	70
4	1	2 or more	750	600	525	100	80	70

Vehicles per hour on major street (100% Volume)	500	Vehicles per hour on major street (100% Volume)	750
Vehicles per hour on major street (80% Volume)	400	Vehicles per hour on major street (80% Volume)	600
Vehicles per hour on major street (70% Volume)	350	Vehicles per hour on major street (70% Volume)	525
Vehicles per hour on higher-volume minor-street approach (100% Volume)	150	Vehicles per hour on higher-volume minor-street approach (100% Volume)	75
Vehicles per hour on higher-volume minor-street approach (80% Volume)	120	Vehicles per hour on higher-volume minor-street approach (80% Volume)	60
Vehicles per hour on higher-volume minor-street approach (70% Volume)	105	Vehicles per hour on higher-volume minor-street approach (70% Volume)	53

Warrant Summary

Warrant Factor	Condition	Major Street Requirement	Minor Street Requirement	Hours That Condition Is Met	Threshold	Condition for Warrant Factor Met?	Signal Warrant Met?
100%	A	500	150	0	8	No	No
	B	750	75	4	8	No	
80%	A	400	120	0	8	No	No
	B	600	60	6	8	No	
70%	A	350	105	0	8	No	Yes
	B	525	53	8	8	Yes	

Is Warrant #1 met based on the applicable warrant factor? **NO**

Warrant #2- Four Hour Volume

Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	26	40	2	3
1:00 AM	2:00 AM	7	30	3	3
2:00 AM	3:00 AM	27	18	0	3
3:00 AM	4:00 AM	14	30	2	4
4:00 AM	5:00 AM	47	47	1	5
5:00 AM	6:00 AM	148	85	7	9
6:00 AM	7:00 AM	665	236	19	55
7:00 AM	8:00 AM	658	608	47	92
8:00 AM	9:00 AM	460	559	45	60
9:00 AM	10:00 AM	388	439	21	42
10:00 AM	11:00 AM	390	381	30	41
11:00 AM	12:00 PM	446	524	24	47
12:00 PM	1:00 PM	499	486	29	47
1:00 PM	2:00 PM	476	511	37	51
2:00 PM	3:00 PM	554	470	32	95
3:00 PM	4:00 PM	509	570	44	92
4:00 PM	5:00 PM	550	716	34	82
5:00 PM	6:00 PM	491	798	72	72
6:00 PM	7:00 PM	382	587	43	59
7:00 PM	8:00 PM	238	285	15	26
8:00 PM	9:00 PM	216	248	16	30
9:00 PM	10:00 PM	158	143	11	27
10:00 PM	11:00 PM	109	121	10	15
11:00 PM	12:00 AM	64	81	1	17

Calculations

Combined Major Street	Higher Minor Street	Threshold	Is Threshold Met?
66	3	348	No
37	3	369	No
45	3	363	No
44	4	364	No
94	5	328	No
233	9	241	No
901	55	60	No
1266	92	60	Yes
1019	60	60	No
827	42	60	No
771	41	65	No
970	47	60	No
985	47	60	No
987	51	60	No
1024	95	60	Yes
1079	92	60	Yes
1266	82	60	Yes
1289	72	60	Yes
969	59	60	No
523	26	115	No
464	30	135	No
301	27	205	No
230	15	243	No
145	17	295	No
			5

Number of lanes for moving traffic on each approach (Major Street)	1
Number of lanes for moving traffic on each approach (Minor Street)	1
Warrant Factor	70%
Row Index for VLOOKUP	5

Lookup Table

Index	Major Street	Minor Street	Break Point	x^2	x	c	alt
1	1	1	1110	0.00027	0.73003	557.978	80
2	2 or more	1	1310	0.00023	0.73144	643.445	80
3	2 or more	2 or more	1280	0.00031	0.97877	858.973	115
4	1	2 or more	1110	0.00023	0.73144	643.445	115
5	1	1	790	0.00044	0.76930	396.803	60
6	2 or more	1	930	0.00037	0.76954	457.134	60
7	2 or more	2 or more	860	0.00049	1.03083	614.734	80
8	1	2 or more	790	0.00037	0.76954	457.134	80

100% Factor

70% Factor

Is Warrant #2 met based on the applicable warrant factor?

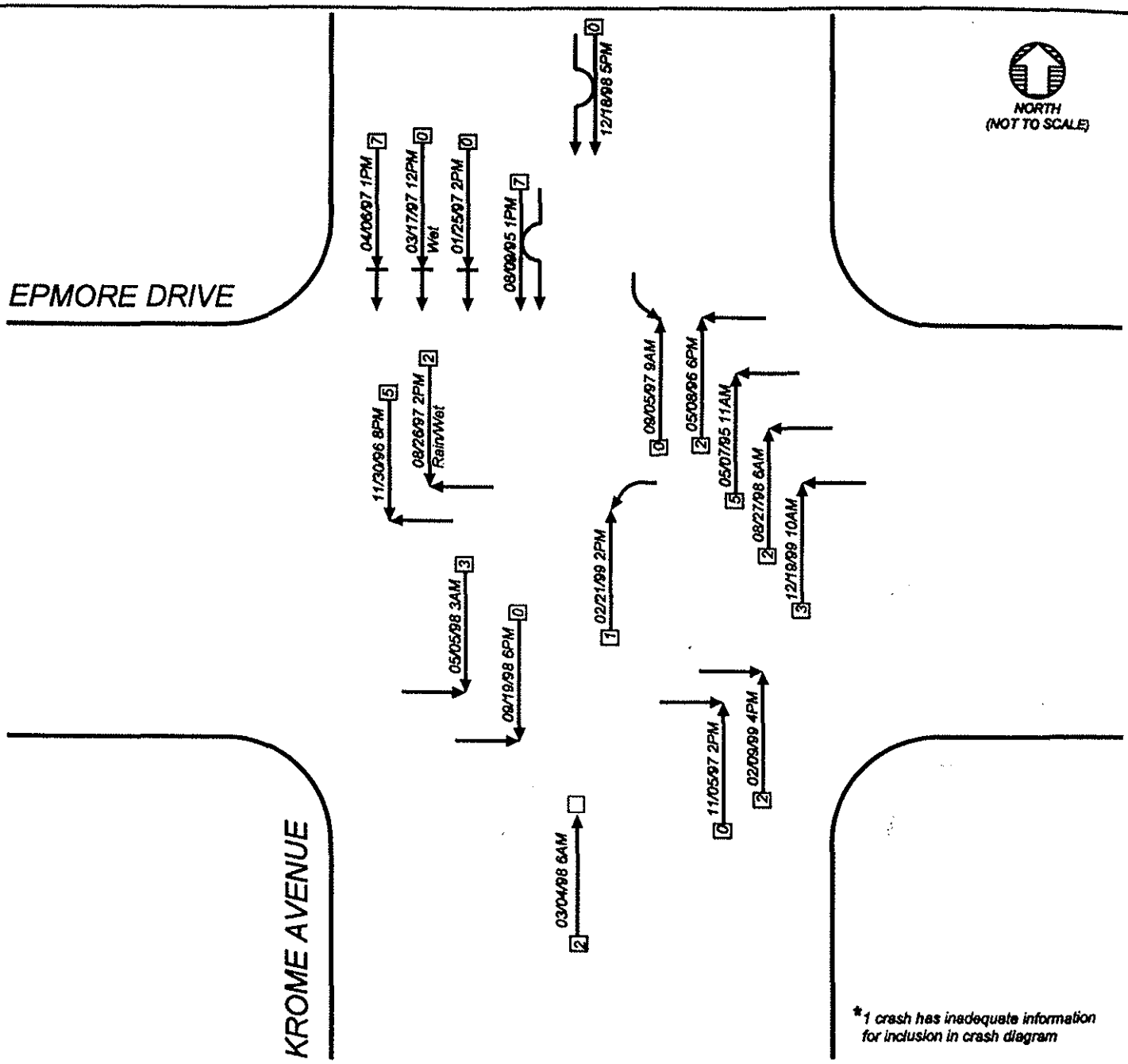
Yes

COLLISION DIAGRAM

INTERSECTION: Krome Avenue & Epmore Drive

PERIOD: 1995-1999 FROM: 1 Jan 1995 TO: 31 Dec 1999

CITY: Miami-Dade PREPARED BY: Thuha Nguyen DATE: 01/28/03



*1 crash has inadequate information for inclusion in crash diagram

NUMBER OF CRASHES	SYMBOLS	TYPE OF COLLISIONS	SHOW FOR EACH CRASH
6 PROPERTY DAMAGE ONLY	MOVING VEHICLE	REAR END	1 TIME DAY DATE
13 INJURY CRASHES	BACKING VEHICLE	HEAD ON	2 WEATHER AND ROAD SURFACE - IF UNUSUAL CONDITIONS EXISTED
0 FATAL CRASHES	NON-INVOLVED VEHICLE	SIDE SWIPE	
19* TOTAL CRASHES	PEDESTRIAN	OVERTURNED	
	PARKED VEHICLE	LEFT TURN	
	FIXED OBJECT	RIGHT ANGLE	
	BICYCLE/MOTORCYCLE		
	NUMBER OF INJURIES		

FIGURE: X.X

01/30/2003 06:04:31 PM

$FILEABBREV$

Krome Avenue &
Grossman Farm Road (SW 192nd Street)

KITTELSON & ASSOCIATES, INC.
110 E Broward Blvd, Suite 2410
Ft Lauderdale, Fl, 33301
Tel: (954) 735 1245
Fax: (954) 735 9025

Project #:	4533/7
Project Name:	Krome Avenue Phase IV
Analyst:	Marais Lombard
Date:	2/11/2003
File:	H:\PROJFILE\4533\Task 7 - Krome Phase 4\Task1-Signal Warrant Analysis\Signal Warrants\(Howard_15th)Warrant Summary
Intersection:	Grossman Farm Road (SW 192nd St)
Scenario:	Existing - January 15, 2003

Warrant Summary

Warrant	Name	Analyzed?	Met?
#1	Eight-Hour Vehicular Volume	Yes	No
#2	Four-Hour Vehicular volume	Yes	Yes
#3	Peak Hour	No	-
#4	Pedestrian Volume	No	-
#5	School Crossing	No	-
#6	Coordinated Signal System	No	-
#7	Crash Experience	Yes	No
#8	Roadway Network	No	-

Input Parameters

Volume Adjustment Factor =	1.0
North-South Approach =	Major
East-West Approach =	Minor
Major Street Thru Lanes =	1
Minor Street Thru Lanes =	1
Speed > 40 mph?	Yes
Population < 10,000?	Yes
Warrant Factor	70%
Peak Hour or Daily Count?	Daily

Raw Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	38	68	6	2
1:00 AM	2:00 AM	17	45	5	0
2:00 AM	3:00 AM	27	45	4	0
3:00 AM	4:00 AM	33	30	4	0
4:00 AM	5:00 AM	71	51	9	3
5:00 AM	6:00 AM	237	103	32	4
6:00 AM	7:00 AM	690	368	81	7
7:00 AM	8:00 AM	665	775	125	14
8:00 AM	9:00 AM	656	698	102	19
9:00 AM	10:00 AM	536	586	97	12
10:00 AM	11:00 AM	573	543	87	14
11:00 AM	12:00 PM	570	640	109	19
12:00 PM	1:00 PM	596	623	114	12
1:00 PM	2:00 PM	511	643	101	7
2:00 PM	3:00 PM	607	560	81	11
3:00 PM	4:00 PM	621	747	121	13
4:00 PM	5:00 PM	665	815	83	17
5:00 PM	6:00 PM	750	859	116	17
6:00 PM	7:00 PM	537	610	106	7
7:00 PM	8:00 PM	305	392	57	7
8:00 PM	9:00 PM	246	303	45	6
9:00 PM	10:00 PM	203	257	32	14
10:00 PM	11:00 PM	135	214	22	2
11:00 PM	12:00 AM	71	162	13	5

Analysis Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	38	68	6	2
1:00 AM	2:00 AM	17	45	5	0
2:00 AM	3:00 AM	27	45	4	0
3:00 AM	4:00 AM	33	30	4	0
4:00 AM	5:00 AM	71	51	9	3
5:00 AM	6:00 AM	237	103	32	4
6:00 AM	7:00 AM	690	368	81	7
7:00 AM	8:00 AM	665	775	125	14
8:00 AM	9:00 AM	656	698	102	19
9:00 AM	10:00 AM	536	586	97	12
10:00 AM	11:00 AM	573	543	87	14
11:00 AM	12:00 PM	570	640	109	19
12:00 PM	1:00 PM	596	623	114	12
1:00 PM	2:00 PM	511	643	101	7
2:00 PM	3:00 PM	607	560	81	11
3:00 PM	4:00 PM	621	747	121	13
4:00 PM	5:00 PM	665	815	83	17
5:00 PM	6:00 PM	750	859	116	17
6:00 PM	7:00 PM	537	610	106	7
7:00 PM	8:00 PM	305	392	57	7
8:00 PM	9:00 PM	246	303	45	6
9:00 PM	10:00 PM	203	257	32	14
10:00 PM	11:00 PM	135	214	22	2
11:00 PM	12:00 AM	71	162	13	5

Warrant #2- Four Hour Volume

Traffic Volumes

Hour		Major Street		Minor Street		Calculations			
Begin	End	NB	SB	EB	WB	Combined Major Street	Higher Minor Street	Threshold	Is Threshold Met?
12:00 AM	1:00 AM	38	68	6	2	106	6	320	No
1:00 AM	2:00 AM	17	45	5	0	62	5	351	No
2:00 AM	3:00 AM	27	45	4	0	72	4	344	No
3:00 AM	4:00 AM	33	30	4	0	63	4	350	No
4:00 AM	5:00 AM	71	51	9	3	122	9	309	No
5:00 AM	6:00 AM	237	103	32	4	340	32	186	No
6:00 AM	7:00 AM	690	368	81	7	1058	81	60	Yes
7:00 AM	8:00 AM	665	775	125	14	1440	125	60	Yes
8:00 AM	9:00 AM	656	698	102	19	1354	102	60	Yes
9:00 AM	10:00 AM	536	586	97	12	1122	97	60	Yes
10:00 AM	11:00 AM	573	543	87	14	1116	87	60	Yes
11:00 AM	12:00 PM	570	640	109	19	1210	109	60	Yes
12:00 PM	1:00 PM	596	623	114	12	1219	114	60	Yes
1:00 PM	2:00 PM	511	643	101	7	1154	101	60	Yes
2:00 PM	3:00 PM	607	560	81	11	1167	81	60	Yes
3:00 PM	4:00 PM	621	747	121	13	1368	121	60	Yes
4:00 PM	5:00 PM	665	815	83	17	1480	83	60	Yes
5:00 PM	6:00 PM	750	859	116	17	1609	116	60	Yes
6:00 PM	7:00 PM	537	610	106	7	1147	106	60	Yes
7:00 PM	8:00 PM	305	392	57	7	697	57	74	No
8:00 PM	9:00 PM	246	303	45	6	549	45	107	No
9:00 PM	10:00 PM	203	257	32	14	460	32	136	No
10:00 PM	11:00 PM	135	214	22	2	349	22	182	No
11:00 PM	12:00 AM	71	162	13	5	233	13	241	No
									13

Number of lanes for moving traffic on each approach (Major Street)	1
Number of lanes for moving traffic on each approach (Minor Street)	1
Warrant Factor	70%
Row Index for VLOOKUP	5

Lookup Table

Index	Major Street	Minor Street	Break Point	x^2	x	c	alt
1	1	1	1110	0.00027	0.73003	557.978	80
2	2 or more	1	1310	0.00023	0.73144	643.445	80
3	2 or more	2 or more	1280	0.00031	0.97877	858.973	115
4	1	2 or more	1110	0.00023	0.73144	643.445	115
5	1	1	790	0.00044	0.76930	396.803	60
6	2 or more	1	930	0.00037	0.76954	457.134	60
7	2 or more	2 or more	860	0.00049	1.03083	614.734	80
8	1	2 or more	790	0.00037	0.76954	457.134	80

100% Factor

70% Factor

Is Warrant #2 met based on the applicable warrant factor? **Yes**

Warrant # 1- Eight Hour Volume

Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	38	68	6	2
1:00 AM	2:00 AM	17	45	5	0
2:00 AM	3:00 AM	27	45	4	0
3:00 AM	4:00 AM	33	30	4	0
4:00 AM	5:00 AM	71	51	9	3
5:00 AM	6:00 AM	237	103	32	4
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7:00 PM	8:00 PM	305	392	57	7
8:00 PM	9:00 PM	246	303	45	6
9:00 PM	10:00 PM	203	257	32	14
10:00 PM	11:00 PM	135	214	22	2
11:00 PM	12:00 AM	71	162	13	5

Calculations

Combined Major Street	Higher Minor Street	Major Plus Minor	Hourly Rank	Condition A 100%	Condition A 80%	Condition A 70%	Condition B 100%	Condition B 80%	Condition B 70%
106	6	112	21	N	N	N	N	N	N
62	5	67	23	N	N	N	N	N	N
72	4	76	22	N	N	N	N	N	N
63	4	67	23	N	N	N	N	N	N
122	9	131	20	N	N	N	N	N	N
340	32	372	17	N	N	N	N	N	N
1058	81	1139	13	N	N	N	Yes	Yes	Yes
1440	125	1565	2	N	Yes	Yes	Yes	Yes	Yes
1354	102	1456	5	N	N	N	Yes	Yes	Yes
1122	97	1219	11	N	N	N	Yes	Yes	Yes
1116	87	1203	12	N	N	N	Yes	Yes	Yes
1210	109	1319	7	N	N	Yes	Yes	Yes	Yes
1219	114	1333	6	N	N	Yes	Yes	Yes	Yes
1154	101	1255	8	N	N	N	Yes	Yes	Yes
1167	81	1248	10	N	N	N	Yes	Yes	Yes
1368	121	1489	4	N	Yes	Yes	Yes	Yes	Yes
1480	83	1563	3	N	N	N	Yes	Yes	Yes
1609	116	1725	1	N	N	Yes	Yes	Yes	Yes
1147	106	1253	9	N	N	Yes	Yes	Yes	Yes
697	57	754	14	N	N	N	N	N	Yes
549	45	594	15	N	N	N	N	N	N
460	32	492	16	N	N	N	N	N	N
349	22	371	18	N	N	N	N	N	N
233	13	246	19	N	N	N	N	N	N
				0	2	6	13	13	14

70% Warrant Met

Number of lanes for moving traffic on each approach (Major Street)	1
Number of lanes for moving traffic on each approach (Minor Street)	1
Warrant Factor	70%
Row Index for VLOOKUP	1

Lookup Table

Condition A - Minimum Vehicular Volume

Lanes			Combined Major Street			Higher Minor Street		
Index	Major Street	Minor Street	100%	80%	70%	100%	80%	70%
1	1	1	500	400	350	150	120	105
2	2 or more	1	600	480	420	150	120	105
3	2 or more	2 or more	600	480	420	200	160	140
4	1	2 or more	500	400	350	200	160	140

Condition B - Interruption of Continuous Traffic

Lanes			Combined Major Street			Higher Minor Street		
Index	Major Street	Minor Street	100%	80%	70%	100%	80%	70%
1	1	1	750	600	525	75	60	53
2	2 or more	1	900	720	630	75	60	53
3	2 or more	2 or more	900	720	630	100	80	70
4	1	2 or more	750	600	525	100	80	70

Vehicles per hour on major street (100% Volume)	500	Vehicles per hour on major street (100% Volume)	750
Vehicles per hour on major street (80% Volume)	400	Vehicles per hour on major street (80% Volume)	600
Vehicles per hour on major street (70% Volume)	350	Vehicles per hour on major street (70% Volume)	525
Vehicles per hour on higher-volume minor-street approach (100% Volume)	150	Vehicles per hour on higher-volume minor-street approach (100% Volume)	75
Vehicles per hour on higher-volume minor-street approach (80% Volume)	120	Vehicles per hour on higher-volume minor-street approach (80% Volume)	60
Vehicles per hour on higher-volume minor-street approach (70% Volume)	105	Vehicles per hour on higher-volume minor-street approach (70% Volume)	53

Warrant Summary

Warrant Factor	Condition	Major Street Requirement	Minor Street Requirement	Hours That Condition Is Met	Threshold	Condition for Warrant Factor Met?	Signal Warrant Met?
100%	A	500	150	0	8	No	Yes
	B	750	75	13	8	Yes	
80%	A	400	120	2	8	No	No
	B	600	60	13	8	Yes	
70%	A	350	105	6	8	No	Yes
	B	525	53	14	8	Yes	

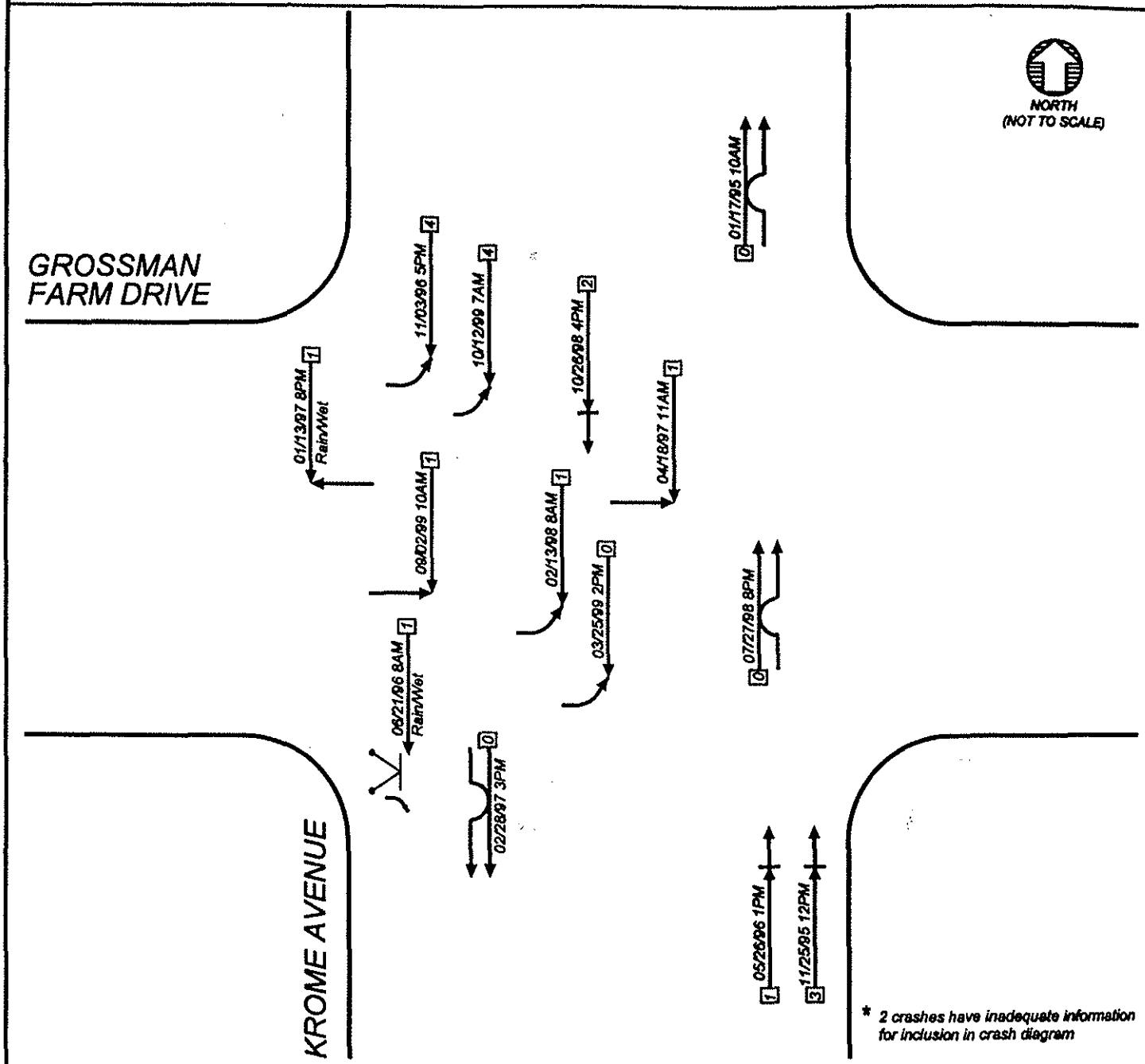
Is Warrant #1 met based on the applicable warrant factor? NO

COLLISION DIAGRAM

INTERSECTION: Krome Avenue & Grossman Farm Drive

PERIOD: 1995-1999 FROM: 1 Jan 1995 TO: 31 Dec 1999

CITY: Miami-Dade PREPARED BY: Thuha Nguyen DATE: 01/28/03



* 2 crashes have inadequate information for inclusion in crash diagram

NUMBER OF CRASHES	SYMBOLS	TYPE OF COLLISIONS	SHOW FOR EACH CRASH
5 PROPERTY DAMAGE ONLY	MOVING VEHICLE	REAR END	1 TIME DAY DATE
11 INJURY CRASHES	BACKING VEHICLE	HEAD ON	2 WEATHER AND ROAD SURFACE - IF UNUSUAL CONDITIONS EXISTED
0 FATAL CRASHES	NON-INVOLVED VEHICLE	SIDE SWIPE	
16* TOTAL CRASHES	PEDESTRIAN	OVERTURNED	
	PARKED VEHICLE	LEFT TURN	
	FIXED OBJECT	RIGHT ANGLE	
	BICYCLE/MOTORCYCLE		
	NUMBER OF INJURIES		

FIGURE: X.X

Krome Avenue & Howard Road (SW 136th Street)

KITTELSON & ASSOCIATES, INC.
110 E Broward Blvd, Suite 2410
Ft Lauderdale, Fl, 33301
Tel: (954) 735 1245
Fax: (954) 735 9025

Project #:	4533/7
Project Name:	Krome Avenue Phase IV
Analyst:	Marais Lombard
Date:	2/11/2003
File:	H:\PROJFILE\4533\Task 7 - Krome Phase 4\Task1-Signal Warrant Analysis\Signal Warrants\[Howard_15th]Warrant Summary
Intersection:	Howard Road (SW 136th St)
Scenario:	Existing - January 15, 2003

Warrant Summary

Warrant	Name	Analyzed?	Met?
#1	Eight-Hour Vehicular Volume	Yes	No
#2	Four-Hour Vehicular volume	Yes	#REF!
#3	Peak Hour	No	-
#4	Pedestrian Volume	No	-
#5	School Crossing	No	-
#6	Coordinated Signal System	No	-
#7	Crash Experience	Yes	No
#8	Roadway Network	No	-

Input Parameters

Volume Adjustment Factor =	1.0
North-South Approach =	Major
East-West Approach =	Minor
Major Street Thru Lanes =	1
Minor Street Thru Lanes =	1
Speed > 40 mph?	Yes
Population < 10,000?	Yes
Warrant Factor	70%
Peak Hour or Daily Count?	Daily

Raw Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	45	63	10	0
1:00 AM	2:00 AM	13	49	0	0
2:00 AM	3:00 AM	28	43	0	0
3:00 AM	4:00 AM	34	30	1	0
4:00 AM	5:00 AM	88	55	7	0
5:00 AM	6:00 AM	236	108	30	0
6:00 AM	7:00 AM	621	334	110	0
7:00 AM	8:00 AM	790	657	110	0
8:00 AM	9:00 AM	643	515	94	0
9:00 AM	10:00 AM	519	502	89	0
10:00 AM	11:00 AM	487	451	81	0
11:00 AM	12:00 PM	527	518	79	0
12:00 PM	1:00 PM	471	513	93	0
1:00 PM	2:00 PM	500	550	93	0
2:00 PM	3:00 PM	514	513	79	0
3:00 PM	4:00 PM	550	695	101	0
4:00 PM	5:00 PM	601	762	102	0
5:00 PM	6:00 PM	677	720	121	0
6:00 PM	7:00 PM	459	565	124	0
7:00 PM	8:00 PM	298	349	75	0
8:00 PM	9:00 PM	194	212	66	0
9:00 PM	10:00 PM	168	185	92	0
10:00 PM	11:00 PM	109	219	32	0
11:00 PM	12:00 AM	78	134	14	0

Analysis Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	45	63	10	0
1:00 AM	2:00 AM	13	49	0	0
2:00 AM	3:00 AM	28	43	0	0
3:00 AM	4:00 AM	34	30	1	0
4:00 AM	5:00 AM	88	55	7	0
5:00 AM	6:00 AM	236	108	30	0
6:00 AM	7:00 AM	621	334	110	0
7:00 AM	8:00 AM	790	657	110	0
8:00 AM	9:00 AM	643	515	94	0
9:00 AM	10:00 AM	519	502	89	0
10:00 AM	11:00 AM	487	451	81	0
11:00 AM	12:00 PM	527	518	79	0
12:00 PM	1:00 PM	471	513	93	0
1:00 PM	2:00 PM	500	550	93	0
2:00 PM	3:00 PM	514	513	79	0
3:00 PM	4:00 PM	550	695	101	0
4:00 PM	5:00 PM	601	762	102	0
5:00 PM	6:00 PM	677	720	121	0
6:00 PM	7:00 PM	459	565	124	0
7:00 PM	8:00 PM	298	349	75	0
8:00 PM	9:00 PM	194	212	66	0
9:00 PM	10:00 PM	168	185	92	0
10:00 PM	11:00 PM	109	219	32	0
11:00 PM	12:00 AM	78	134	14	0

Warrant # 1- Eight Hour Volume

Traffic Volumes

Hour		Major Street		Minor Street		Combined Major Street	Higher Minor Street	Major Plus Minor	Hourly Rank	Condition A			Condition B		
Begin	End	NB	SB	EB	WB					100%	80%	70%	100%	80%	70%
12:00 AM	1:00 AM	45	63	10	0	108	10	118	21	N	N	N	N	N	N
1:00 AM	2:00 AM	13	49	0	0	62	0	62	24	N	N	N	N	N	N
2:00 AM	3:00 AM	28	43	0	0	71	0	71	22	N	N	N	N	N	N
3:00 AM	4:00 AM	34	30	1	0	64	1	65	23	N	N	N	N	N	N
4:00 AM	5:00 AM	88	55	7	0	143	7	150	20	N	N	N	N	N	N
5:00 AM	6:00 AM	236	108	30	0	344	30	374	17	N	N	N	N	N	N
[redacted]						955	110	1065	12	N	N	Yes	Yes	Yes	Yes
						1447	110	1557	1	N	N	Yes	Yes	Yes	Yes
						1158	94	1252	5	N	N	N	Yes	Yes	Yes
						1021	89	1110	9	N	N	N	Yes	Yes	Yes
						938	81	1019	13	N	N	N	Yes	Yes	Yes
						1045	79	1124	8	N	N	N	Yes	Yes	Yes
						984	93	1077	11	N	N	N	Yes	Yes	Yes
						1050	93	1143	7	N	N	N	Yes	Yes	Yes
						1027	79	1106	10	N	N	N	Yes	Yes	Yes
						1245	101	1346	4	N	N	N	Yes	Yes	Yes
						1363	102	1465	3	N	N	N	Yes	Yes	Yes
						1397	121	1518	2	N	Yes	Yes	Yes	Yes	Yes
						1024	124	1148	6	N	Yes	Yes	Yes	Yes	Yes
7:00 PM	8:00 PM	298	349	75	0	647	75	722	14	N	N	N	N	Yes	Yes
8:00 PM	9:00 PM	194	212	66	0	406	66	472	15	N	N	N	N	N	N
9:00 PM	10:00 PM	168	185	92	0	353	92	445	16	N	N	N	N	N	N
10:00 PM	11:00 PM	109	219	32	0	328	32	360	18	N	N	N	N	N	N
11:00 PM	12:00 AM	78	134	14	0	212	14	226	19	N	N	N	N	N	N
										0	2	4	13	14	14

[redacted]

70% Warrant Met

Number of lanes for moving traffic on each approach (Major Street)	1
Number of lanes for moving traffic on each approach (Minor Street)	1
Warrant Factor	70%
Row Index for VLOOKUP	1

Lookup Table

Condition A - Minimum Vehicular Volume

Lanes			Combined Major Street			Higher Minor Street		
Index	Major Street	Minor Street	100%	80%	70%	100%	80%	70%
1	1	1	500	400	350	150	120	105
2	2 or more	1	600	480	420	150	120	105
3	2 or more	2 or more	600	480	420	200	160	140
4	1	2 or more	500	400	350	200	160	140

Condition B - Interruption of Continuous Traffic

Lanes			Combined Major Street			Higher Minor Street		
Index	Major Street	Minor Street	100%	80%	70%	100%	80%	70%
1	1	1	750	600	525	75	60	53
2	2 or more	1	900	720	630	75	60	53
3	2 or more	2 or more	900	720	630	100	80	70
4	1	2 or more	750	600	525	100	80	70

Vehicles per hour on major street (100% Volume)	500	Vehicles per hour on major street (100% Volume)	750
Vehicles per hour on major street (80% Volume)	400	Vehicles per hour on major street (80% Volume)	600
Vehicles per hour on major street (70% Volume)	350	Vehicles per hour on major street (70% Volume)	525
Vehicles per hour on higher-volume minor-street approach (100% Volume)	150	Vehicles per hour on higher-volume minor-street approach (100% Volume)	75
Vehicles per hour on higher-volume minor-street approach (80% Volume)	120	Vehicles per hour on higher-volume minor-street approach (80% Volume)	60
Vehicles per hour on higher-volume minor-street approach (70% Volume)	105	Vehicles per hour on higher-volume minor-street approach (70% Volume)	53

Warrant Summary

Warrant Factor	Condition	Major Street Requirement	Minor Street Requirement	Hours That Condition Is Met	Threshold	Condition for Warrant Factor Met?	Signal Warrant Met?
100%	A	500	150	0	8	No	Yes
	B	750	75	13	8	Yes	
80%	A	400	120	2	8	No	No
	B	600	60	14	8	Yes	
70%	A	350	105	4	8	No	Yes
	B	525	53	14	8	Yes	

Is Warrant #1 met based on the applicable warrant factor? **NO**

Warrant #2- Four Hour Volume

Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	NB	SB	EB	WB
12:00 AM	1:00 AM	45	63	10	0
1:00 AM	2:00 AM	13	49	0	0
2:00 AM	3:00 AM	28	43	0	0
3:00 AM	4:00 AM	34	30	1	0
4:00 AM	5:00 AM	88	55	7	0
5:00 AM	6:00 AM	236	108	30	0
6:00 AM	7:00 AM	621	334	110	0
7:00 AM	8:00 AM	790	657	110	0
8:00 AM	9:00 AM	643	515	94	0
9:00 AM	10:00 AM	519	502	89	0
10:00 AM	11:00 AM	487	451	81	0
11:00 AM	12:00 PM	527	518	79	0
12:00 PM	1:00 PM	471	513	93	0
1:00 PM	2:00 PM	500	550	93	0
2:00 PM	3:00 PM	514	513	79	0
3:00 PM	4:00 PM	550	695	101	0
4:00 PM	5:00 PM	601	762	102	0
5:00 PM	6:00 PM	677	720	121	0
6:00 PM	7:00 PM	459	565	124	0
7:00 PM	8:00 PM	298	349	75	0
8:00 PM	9:00 PM	194	212	66	0
9:00 PM	10:00 PM	168	185	92	0
10:00 PM	11:00 PM	109	219	32	0
11:00 PM	12:00 AM	78	134	14	0

Calculations

Combined Major Street	Higher Minor Street	Threshold	Is Threshold Met?
108	10	319	No
62	0	351	
71	0	344	
64	1	349	No
143	7	296	No
344	30	184	No
955	110	60	Yes
1447	110	60	Yes
1158	94	60	Yes
1021	89	60	Yes
938	81	60	Yes
1045	79	60	Yes
984	93	60	Yes
1050	93	60	Yes
1027	79	60	Yes
1245	101	60	Yes
1363	102	60	Yes
1397	121	60	Yes
1024	124	60	Yes
647	75	83	No
406	66	157	No
353	92	180	No
328	32	192	No
212	14	253	No
			13

Number of lanes for moving traffic on each approach (Major Street)	1
Number of lanes for moving traffic on each approach (Minor Street)	1
Warrant Factor	70%
Row Index for VLOOKUP	5

Lookup Table

Index	Major Street	Minor Street	Break Point	x^2	x	c	alt
1	1	1	1110	0.00027	0.73003	557.978	80
2	2 or more	1	1310	0.00023	0.73144	643.445	80
3	2 or more	2 or more	1280	0.00031	0.97877	858.973	115
4	1	2 or more	1110	0.00023	0.73144	643.445	115
5	1	1	790	0.00044	0.76930	396.803	60
6	2 or more	1	930	0.00037	0.76954	457.134	60
7	2 or more	2 or more	860	0.00049	1.03083	614.734	80
8	1	2 or more	790	0.00037	0.76954	457.134	80

100% Factor

70% Factor

Is Warrant #2 met based on the applicable warrant factor?

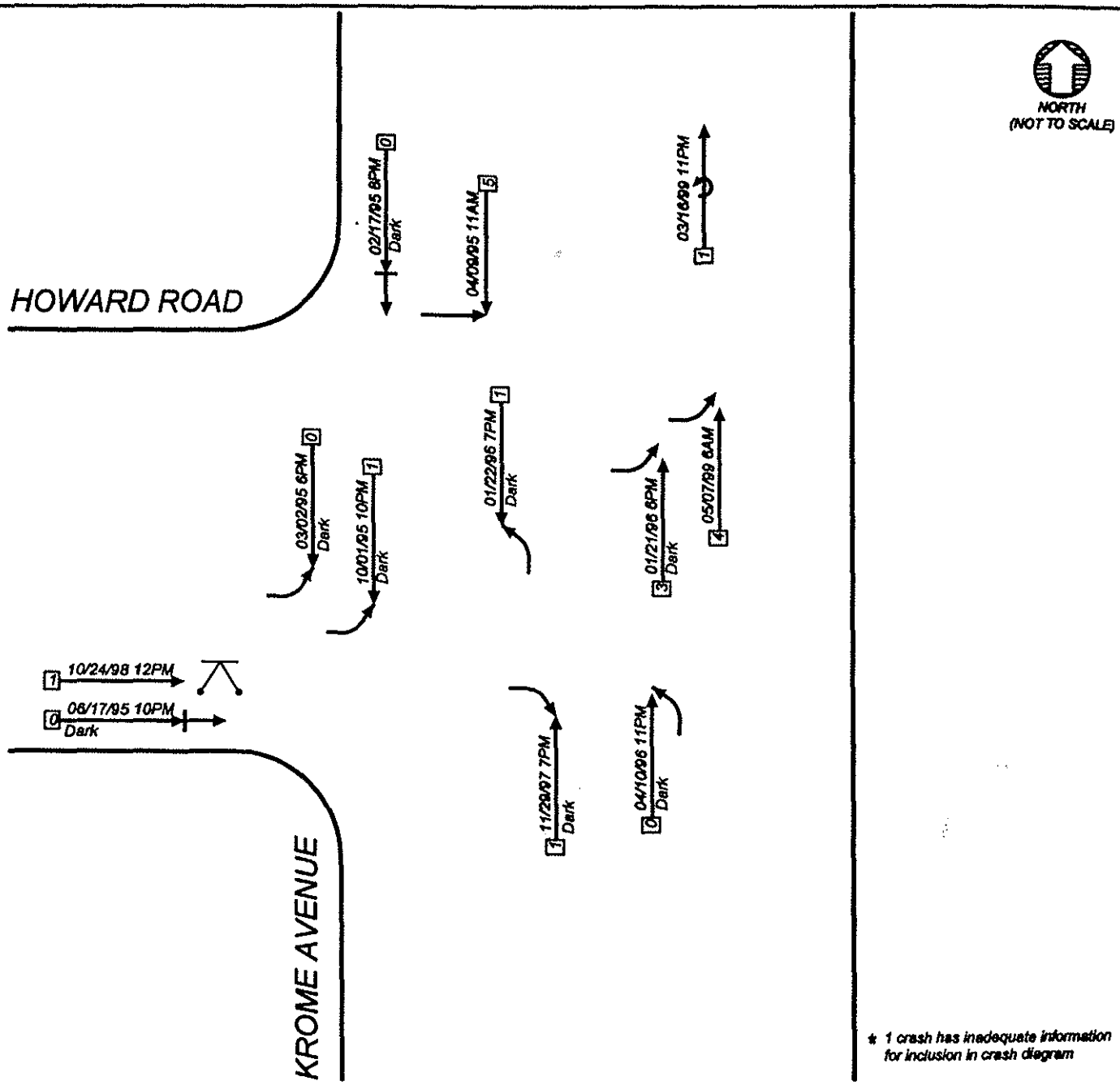
Yes

COLLISION DIAGRAM

INTERSECTION: Krome Avenue & Howard Road

PERIOD: 1995-1999 FROM: 1 Jan 1995 TO: 31 Dec 1999

CITY: Miami-Dade PREPARED BY: Thuha Nguyen DATE: 01/28/03



* 1 crash has inadequate information for inclusion in crash diagram

NUMBER OF CRASHES	SYMBOLS	TYPE OF COLLISIONS	SHOW FOR EACH CRASH
4 PROPERTY DAMAGE ONLY	MOVING VEHICLE	REAR END	1 TIME DAY DATE
9 INJURY CRASHES	BACKING VEHICLE	HEAD ON	2 WEATHER AND ROAD SURFACE - IF UNUSUAL CONDITIONS EXISTED
0 FATAL CRASHES	NON-INVOLVED VEHICLE	SIDE SWIPE	
13* TOTAL CRASHES	PEDESTRIAN	OVERTURNED	
	PARKED VEHICLE	LEFT TURN	
	FIXED OBJECT	RIGHT ANGLE	
	BICYCLE/MOTORCYCLE		
	NUMBER OF INJURIES		FIGURE: X.X

01/30/2003 06:40:33 PM

@FILENAME

Krome Avenue & Okeechobee Road (US 27)

KITTELSON & ASSOCIATES, INC.
110 E Broward Blvd, Suite 2410
Ft Lauderdale, Fl, 33301
Tel: (954) 735 1245
Fax: (954) 735 9025

Project #: 4533/7
Project Name: Krome Avenue Phase IV
Analyst: Marais Lombard
Date: 2/11/2003
File: H:\PROJFILE\4533\Task 7 - Krome Phase 4\Task1-Signal Warrant Analysis\Signal Warrants\[Howard_15th]Warrant Summary
Intersection: Okeechobee Road (US 27)
Scenario: Existing - January 15, 2003

Warrant Summary

Warrant	Name	Analyzed?	Met?
#1	Eight-Hour Vehicular Volume	Yes	Yes
#2	Four-Hour Vehicular volume	Yes	Yes
#3	Peak Hour	No	-
#4	Pedestrian Volume	No	-
#5	School Crossing	No	-
#6	Coordinated Signal System	No	-
#7	Crash Experience	Yes	No
#8	Roadway Network	No	-

Input Parameters

Volume Adjustment Factor =	1.0
North-South Approach =	Minor
East-West Approach =	Major
Major Street Thru Lanes =	2
Minor Street Thru Lanes =	2
Speed > 40 mph?	Yes
Population < 10,000?	Yes
Warrant Factor	70%
Peak Hour or Daily Count?	Daily

Raw Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	EB	WB	NB	SB
12:00 AM	1:00 AM	79	138	26	0
1:00 AM	2:00 AM	100	66	13	0
2:00 AM	3:00 AM	59	124	12	0
3:00 AM	4:00 AM	101	119	17	0
4:00 AM	5:00 AM	167	234	32	0
5:00 AM	6:00 AM	318	323	86	0
6:00 AM	7:00 AM	326	459	163	0
7:00 AM	8:00 AM	1400	445	268	0
8:00 AM	9:00 AM	1188	494	317	0
9:00 AM	10:00 AM	734	427	197	0
10:00 AM	11:00 AM	734	524	174	0
11:00 AM	12:00 PM	523	501	145	0
12:00 PM	1:00 PM	501	491	135	0
1:00 PM	2:00 PM	540	490	133	0
2:00 PM	3:00 PM	580	520	150	0
3:00 PM	4:00 PM	597	706	183	0
4:00 PM	5:00 PM	653	815	184	0
5:00 PM	6:00 PM	622	1219	202	0
6:00 PM	7:00 PM	453	934	171	0
7:00 PM	8:00 PM	309	512	86	0
8:00 PM	9:00 PM	219	289	65	0
9:00 PM	10:00 PM	1851	265	42	0
10:00 PM	11:00 PM	143	156	45	0
11:00 PM	12:00 AM	106	113	43	43

Analysis Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	EB	WB	NB	SB
12:00 AM	1:00 AM	79	138	26	0
1:00 AM	2:00 AM	100	66	13	0
2:00 AM	3:00 AM	59	124	12	0
3:00 AM	4:00 AM	101	119	17	0
4:00 AM	5:00 AM	167	234	32	0
5:00 AM	6:00 AM	318	323	86	0
6:00 AM	7:00 AM	326	459	163	0
7:00 AM	8:00 AM	1400	445	268	0
8:00 AM	9:00 AM	1188	494	317	0
9:00 AM	10:00 AM	734	427	197	0
10:00 AM	11:00 AM	734	524	174	0
11:00 AM	12:00 PM	523	501	145	0
12:00 PM	1:00 PM	501	491	135	0
1:00 PM	2:00 PM	540	490	133	0
2:00 PM	3:00 PM	580	520	150	0
3:00 PM	4:00 PM	597	706	183	0
4:00 PM	5:00 PM	653	815	184	0
5:00 PM	6:00 PM	622	1219	202	0
6:00 PM	7:00 PM	453	934	171	0
7:00 PM	8:00 PM	309	512	86	0
8:00 PM	9:00 PM	219	289	65	0
9:00 PM	10:00 PM	1851	265	42	0
10:00 PM	11:00 PM	143	156	45	0
11:00 PM	12:00 AM	106	113	43	43

Warrant # 1- Eight Hour Volume

Traffic Volumes

Hour Begin	Hour End	Major Street EB	Major Street WB	Minor Street NB	Minor Street SB
12:00 AM	1:00 AM	79	138	26	0
1:00 AM	2:00 AM	100	66	13	0
2:00 AM	3:00 AM	59	124	12	0
3:00 AM	4:00 AM	101	119	17	0
4:00 AM	5:00 AM	167	234	32	0
5:00 AM	6:00 AM	318	323	86	0
6:00 AM	7:00 AM	326	459	163	0
[redacted]					
7:00 PM	8:00 PM	309	512	86	0
8:00 PM	9:00 PM	219	289	65	0
9:00 PM	10:00 PM	1851	265	42	0
10:00 PM	11:00 PM	143	156	45	0
11:00 PM	12:00 AM	106	113	43	43

[redacted]

70% Warrant Met

Calculations

Combined Major Street	Higher Minor Street	Major Plus Minor	Hourly Rank	Condition A 100%	Condition A 80%	Condition A 70%	Condition B 100%	Condition B 80%	Condition B 70%
217	26	243	21	N	N	N	N	N	N
166	13	179	24	N	N	N	N	N	N
183	12	195	23	N	N	N	N	N	N
220	17	237	22	N	N	N	N	N	N
401	32	433	18	N	N	N	N	N	N
641	86	727	16	N	N	N	N	N	Yes
785	163	948	14	N	Yes	Yes	N	Yes	Yes
1845	268	2113	2	Yes	Yes	Yes	Yes	Yes	Yes
1682	317	1999	4	Yes	Yes	Yes	Yes	Yes	Yes
1161	197	1358	9	N	Yes	Yes	Yes	Yes	Yes
1258	174	1432	8	N	Yes	Yes	Yes	Yes	Yes
1024	145	1169	11	N	N	Yes	Yes	Yes	Yes
992	135	1127	13	N	N	N	Yes	Yes	Yes
1030	133	1163	12	N	N	N	Yes	Yes	Yes
1100	150	1250	10	N	N	Yes	Yes	Yes	Yes
1303	183	1486	7	N	Yes	Yes	Yes	Yes	Yes
1468	184	1652	5	N	Yes	Yes	Yes	Yes	Yes
1841	202	2043	3	Yes	Yes	Yes	Yes	Yes	Yes
1387	171	1558	6	N	Yes	Yes	Yes	Yes	Yes
821	86	907	15	N	N	N	N	Yes	Yes
508	65	573	17	N	N	N	N	N	N
2116	42	2158	1	N	N	N	N	N	N
299	45	344	19	N	N	N	N	N	N
219	43	262	20	N	N	N	N	N	N
				3	9	11	12	14	15

Number of lanes for moving traffic on each approach (Major Street)	2
Number of lanes for moving traffic on each approach (Minor Street)	2
Warrant Factor	70%
Row Index for VLOOKUP	3

Lookup Table

Condition A - Minimum Vehicular Volume

Index	Lanes: Major Street	Lanes: Minor Street	Combined Major Street 100%	Combined Major Street 80%	Combined Major Street 70%	Higher Minor Street 100%	Higher Minor Street 80%	Higher Minor Street 70%
1	1	1	500	400	350	150	120	105
2	2 or more	1	600	480	420	150	120	105
3	2 or more	2 or more	600	480	420	200	160	140
4	1	2 or more	500	400	350	200	160	140

Condition B - Interruption of Continuous Traffic

Index	Lanes: Major Street	Lanes: Minor Street	Combined Major Street 100%	Combined Major Street 80%	Combined Major Street 70%	Higher Minor Street 100%	Higher Minor Street 80%	Higher Minor Street 70%
1	1	1	750	600	525	75	60	53
2	2 or more	1	900	720	630	75	60	53
3	2 or more	2 or more	900	720	630	100	80	70
4	1	2 or more	750	600	525	100	80	70

Vehicles per hour on major street (100% Volume)	600	Vehicles per hour on major street (100% Volume)	900
Vehicles per hour on major street (80% Volume)	480	Vehicles per hour on major street (80% Volume)	720
Vehicles per hour on major street (70% Volume)	420	Vehicles per hour on major street (70% Volume)	630
Vehicles per hour on higher-volume minor-street approach (100% Volume)	200	Vehicles per hour on higher-volume minor-street approach (100% Volume)	100
Vehicles per hour on higher-volume minor-street approach (80% Volume)	160	Vehicles per hour on higher-volume minor-street approach (80% Volume)	80
Vehicles per hour on higher-volume minor-street approach (70% Volume)	140	Vehicles per hour on higher-volume minor-street approach (70% Volume)	70

Warrant Summary

Warrant Factor	Condition	Major Street Requirement	Minor Street Requirement	Hours That Condition Is Met	Threshold	Condition for Warrant Factor Met?	Signal Warrant Met?
100%	A	600	200	3	8	No	Yes
	B	900	100	12	8	Yes	
80%	A	480	160	9	8	Yes	Yes
	B	720	80	14	8	Yes	
70%	A	420	140	11	8	Yes	Yes
	B	630	70	15	8	Yes	

Is Warrant #1 met based on the applicable warrant factor? **Yes**

Warrant #2- Four Hour Volume

Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	EB	WB	NB	SB
12:00 AM	1:00 AM	79	138	26	0
1:00 AM	2:00 AM	100	66	13	0
2:00 AM	3:00 AM	59	124	12	0
3:00 AM	4:00 AM	101	119	17	0
4:00 AM	5:00 AM	167	234	32	0
5:00 AM	6:00 AM	318	323	86	0
6:00 AM	7:00 AM	326	459	163	0
7:00 AM	8:00 AM	1400	445	268	0
8:00 AM	9:00 AM	1188	494	317	0
9:00 AM	10:00 AM	734	427	197	0
10:00 AM	11:00 AM	734	524	174	0
11:00 AM	12:00 PM	523	501	145	0
12:00 PM	1:00 PM	501	491	135	0
1:00 PM	2:00 PM	540	490	133	0
2:00 PM	3:00 PM	580	520	150	0
3:00 PM	4:00 PM	597	706	183	0
4:00 PM	5:00 PM	653	815	184	0
5:00 PM	6:00 PM	622	1219	202	0
6:00 PM	7:00 PM	453	934	171	0
7:00 PM	8:00 PM	309	512	86	0
8:00 PM	9:00 PM	219	289	65	0
9:00 PM	10:00 PM	1851	265	42	0
10:00 PM	11:00 PM	143	156	45	0
11:00 PM	12:00 AM	106	113	43	43

Calculations

Combined Major Street	Higher Minor Street	Threshold	Is Threshold Met?
217	26	414	No
166	13	457	No
183	12	443	No
220	17	412	No
401	32	280	No
641	86	155	No
785	163	107	Yes
1845	268	80	Yes
1682	317	80	Yes
1161	197	80	Yes
1258	174	80	Yes
1024	145	80	Yes
992	135	80	Yes
1030	133	80	Yes
1100	150	80	Yes
1303	183	80	Yes
1468	184	80	Yes
1841	202	80	Yes
1387	171	80	Yes
821	86	99	No
508	65	218	No
2116	42	80	No
299	45	350	No
219	43	412	No
			13

Number of lanes for moving traffic on each approach (Major Street)	2
Number of lanes for moving traffic on each approach (Minor Street)	2
Warrant Factor	70%
Row Index for VLOOKUP	7

Lookup Table

Index	Major Street	Minor Street	Break Point	x^2	x	c	alt
1	1	1	1110	0.00027	0.73003	557.978	80
2	2 or more	1	1310	0.00023	0.73144	643.445	80
3	2 or more	2 or more	1280	0.00031	0.97877	858.973	115
4	1	2 or more	1110	0.00023	0.73144	643.445	115
5	1	1	790	0.00044	0.76930	396.803	60
6	2 or more	1	930	0.00037	0.76954	457.134	60
7	2 or more	2 or more	860	0.00049	1.03083	614.734	80
8	1	2 or more	790	0.00037	0.76954	457.134	80

100% Factor

70% Factor

Is Warrant #2 met based on the applicable warrant factor?

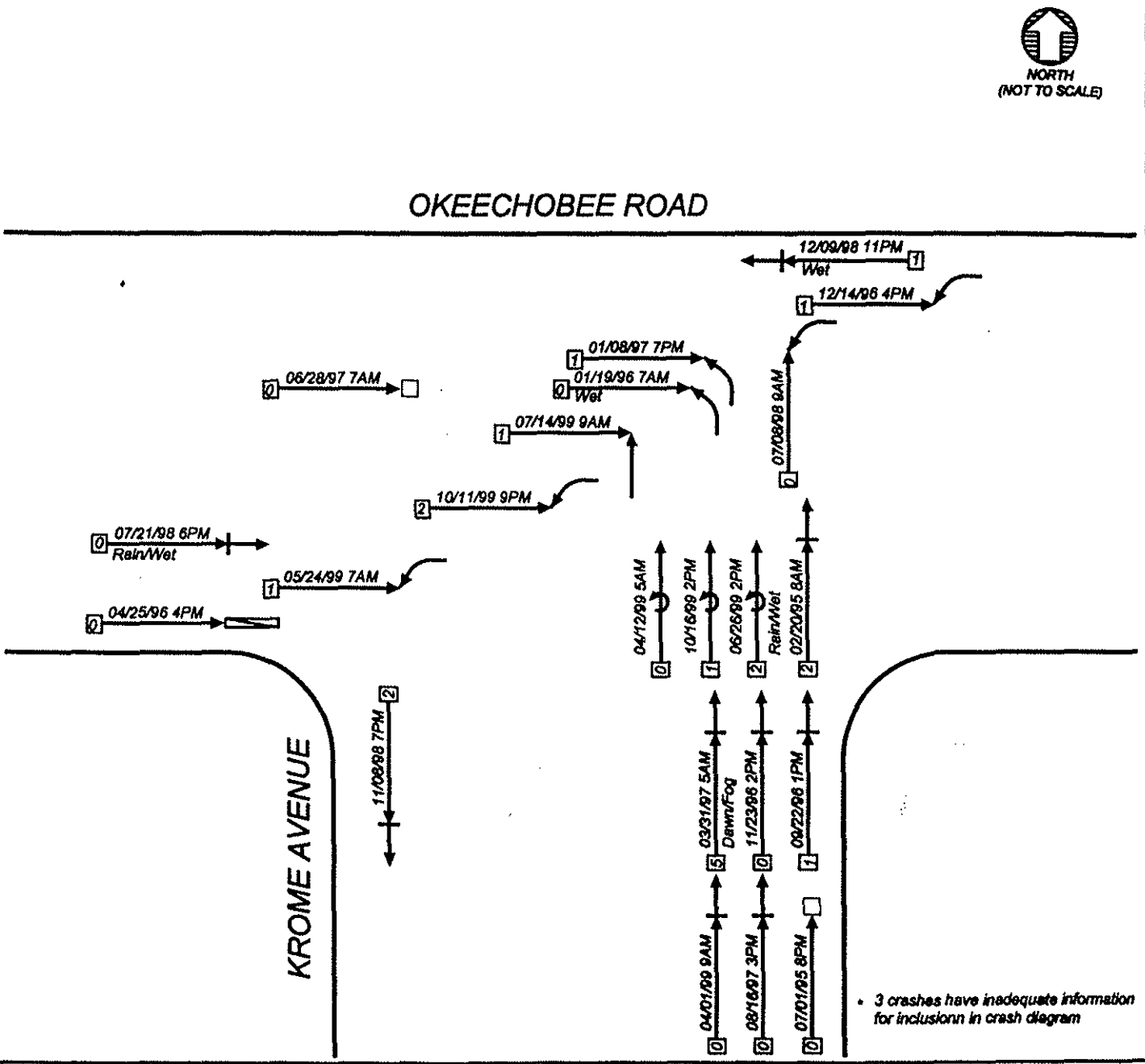
Yes

COLLISION DIAGRAM

INTERSECTION: Okeechobee Road & Krome Avenue

PERIOD: 1995-1999 FROM: 1 Jan 1995 TO: 31 Dec 1999

CITY: Miami-Dade PREPARED BY: Thuha Nguyen DATE: 01/28/03



NUMBER OF CRASHES	SYMBOLS	TYPE OF COLLISIONS	SHOW FOR EACH CRASH
10 PROPERTY DAMAGE ONLY	MOVING VEHICLE	REAR END	1 TIME DAY DATE
15 INJURY CRASHES	BACKING VEHICLE	HEAD ON	2 WEATHER AND ROAD SURFACE - IF UNUSUAL CONDITIONS EXISTED
0 FATAL CRASHES	NON-INVOLVED VEHICLE	SIDE SWIPE	
25* TOTAL CRASHES	PEDESTRIAN	OVERTURNED	
	PARKED VEHICLE	LEFT TURN	
	FIXED OBJECT	RIGHT ANGLE	
	BICYCLE/MOTORCYCLE		
	NUMBER OF INJURIES		

FIGURE: X.X

01/30/2003 06:12:43 PM

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APPENDIX B

SR 997/Krome Avenue Future Conditions Analysis and Mitigation Measures

FDOT D6 Systems Planning

Krome Avenue

Future Conditions Analysis and Mitigation Measures

Miami-Dade County, Florida

Prepared For:
Florida Department of Transportation, District Six

Prepared By:
Kittelson & Associates, Inc.
110 E Broward Blvd, Suite 2410
Ft. Lauderdale, FL 33301
(954) 735-1245

Project Manager: John Zegeer
Project Analysts: Karl Pasetti, Thuha Nguyen,
Lei Xu, Susan Wright, Tracie Fong

Project No. 4533.04

October 2002

Table of Contents

Executive Summary E-1

Section 1 1. Introduction 1

Section 2 2. Traffic Volume Projections 4

Section 3 3. Roadway Improvements 10

Section 4 4. Operational Analysis 15

Section 5 5. Safety Analysis 25

Section 6 6. Potential Crash Counter Measures 34

Section 7 7. Conclusions 77

Section 8 8. References 81

Appendices 82

Appendix A: HCS Runs for 2002 Existing Conditions

Appendix B1: HCS Runs for 2010 Conditions

Appendix B2: HCS Runs for 2010 Conditions with Potential Improvements

Appendix C1: HCS Runs for 2020 Conditions

Appendix C2: HCS Runs for 2020 Conditions with Potential Improvements

List of Figures

Figure 1-1: Site Vicinity 2

Figure 2-1: Traffic Volume Projections, Avocado Drive to Silver Palm Drive 5

Figure 2-2: Traffic Volume Projections, Silver Palm Drive to Eureka Drive 5

Figure 2-3: Traffic Volume Projections, Eureka Drive to Kendall Drive 6

Figure 2-4: Traffic Volume Projections, Kendall Drive to Tamiami Trail 6

Figure 2-5: Traffic Volume Projections, Tamiami Trail to US 27 7

Figure 3-1: Existing Lane Configurations and Traffic Control Devices 11

Figure 3-2: Krome Avenue Action Plan 12

Figure 3-3: Year 2010 Lane Configurations and Traffic Control Devices 13

Figure 4-1: Existing Traffic Conditions 16

Figure 4-2: Year 2010 Traffic Conditions 17

Figure 4-3: Year 2020 Traffic Conditions 18

Figure 5-1: Summary of Safety Analysis 27

Figure 5-2: Total Number of Crashes by Contributing Cause 28

Figure 5-3: Severe Injury and Fatal Crash Locations 31

Figure 6-1: Countermeasure Identification Methodology 34

Figure 6-2: Edgeline Drop-Off Example: Krome Avenue South of Epmore Intersection 41

Figure 6-3: Edgeline Drop-Off Example: Krome Avenue in the vicinity of Howard Road 41

Figure 6-4: Edgeline Drop-Off Example: Krome Avenue North of Kendall Drive Intersection 42

Figure 6-5: FDOT S.I. 105: Shoulder Sodding and Reworking on Existing Facilities 43

Figure 6-6: South Approach, Avocado Drive and Krome Avenue 45

Figure 6-7: South Approach, Biscayne Drive and Krome Avenue 47

Figure 6-8: West Approach, Epmore Drive and Krome Avenue 49

Figure 6-9: South Approach, Bauer Drive and Krome Avenue 51

Figure 6-10: North Approach, Plummer Drive and Krome Avenue 53

Figure 6-11: West Approach, Coconut Palm Drive and Krome Avenue 55

Figure 6-12: View from West Approach towards East, Silver Palm Drive and Krome Avenue 57

Figure 6-13: South Approach, Hainlin Mill Drive and Krome Avenue 60

Figure 6-14: East Approach, Quail Roost Drive and Krome Avenue 62

Figure 6-15: South Approach, Eureka Drive and Krome Avenue 64

Figure 6-16: North Approach, Howard Road and Krome Avenue 66

Figure 6-17: North Approach, Kendall Drive and Krome Avenue 68

Figure 6-18: South Approach towards North, Tamiami Trail and Krome Avenue 71

Figure 6-19: South Approach of Eureka Drive/SW 184th Street 75

List of Tables

Table 2-1: Historical ADTs and Best Fit Linear Annual Growth Rate 4

Table 2-2: Applied Growth Rates By Segment 8

Table 2-3: Applied Growth Rates by Intersection 8

Table 4-1: Intersection Levels of Service with Committed Improvements 19

Table 4-2:Intersection Level of Service with Potential Improvements 22

Table 4-3: Segment Levels of Service for the Morning Peak Hour 23

Table 5-1: Summary of Crashes by Category 26

Table 5-2: Summary of Fatal Crashes and Fatalities (Jan 1995-Jul 2002) 29

Table 5-3: Summary of Severe Injury and Fatal Crashes 30

Table 5-4: Nearby Conditions at Fatal Crash Locations 32

Table 6-1: Controlled Access Facility Standards for Class 2 and Class 3 39

Executive Summary

Executive Summary

Krome Avenue is a north-south highway in southwestern Miami-Dade County, Florida. It begins at US 1 in Florida City and extends north to its intersection with Okeechobee Road (US 27). The southern portion of Krome Avenue (from US 1 to Avocado Drive) is the subject of a Project Development and Environment (PD&E) Study by the Florida Department of Transportation. This report presents the results of a corridor study that covers approximately 33 miles of Krome Avenue that begins at Avocado Drive and ends at Okeechobee Road. The corridor study was conducted for two reasons: 1) to determine the extent to which continued traffic volume growth can be mitigated by intersection and roadway segment (i.e., midblock) improvements and 2) to develop a set of actions that could reduce the number and severity of crashes that have occurred along this two-lane highway.

Traffic Volume Projections

From Avocado Drive to Eureka Drive (the southern 7.1 miles), Krome Avenue is suburban in character and has a traffic signal located at one-mile intervals on average. The northern 25.8 miles in this corridor is much more rural in character with long distances between traffic signals and lower levels of land-use development within the corridor. In 2001, weekday traffic volumes were between 14,000 and 15,000 vehicles south of Tamiami Trail and 9,000 vehicles north of Tamiami Trail.

Throughout the corridor, traffic volumes have grown at a rate of over 10% per year over the past six years. This rate of growth is not anticipated to continue for three reasons: 1) a linear rate of traffic growth is not physically possible to sustain for an indefinite period of time, 2) the historical ADT data from 2000 and 2001 already shows a trend that is starting to level off (rate of growth is decreasing), and 3) as roadways become more congested, the rate of traffic growth decreases. In addition, the future land-use plan for the corridor does not indicate a significant change over the existing land-uses to warrant a continuation of the observed historical growth rates. This is verified by the Long-Range Transportation Plan model traffic projections. By the year 2020, weekday traffic volumes are anticipated to be between 18,000 and 21,000 vehicles south of Tamiami Trail and slightly less than 12, 000 vehicles north of Tamiami Trail.

Roadway Improvements

In October 1999, an Action Plan was completed for the entire length of Krome Avenue – from US 1 to Okeechobee Road. This Action Plan was prepared in recognition that Krome Avenue is on the Florida Intrastate Highway System (FIHS) and that FIHS standards require that roadways on the FIHS system be designated as controlled-access facilities with a cross-section that provides for at least four lanes with a restrictive median. A series of safety and operational enhancements were recommended for the roadway. They included intersection lane additions and traffic signal installations, access management and shoulder enhancements, the provision of passing zones, the addition of pedestrian and bicycle facilities, the provision of pavement marking and signage improvements, and the addition of clear recovery zones.

The Action Plan also recommended a land-use overlay district for adoption to clarify parameters for development, to strengthen preservation measures, and to enhance the corridor's scenic qualities. This overlay district has not been established. In addition, none of the new traffic signals

recommended for installation along the corridor are planned for installation. However, seven intersections are programmed for turn lane additions, improved return radii, signing and pavement markings, and lighting improvements. Five of these seven intersections are included in this analysis.

Operational Analysis

The intersection capacity analysis showed that today, six of the 14 intersections that were analyzed operate with an unacceptable level of delay (including all four of the unsignalized intersections that were analyzed). The Level of Service (LOS) standard for Krome Ave is LOS C north of SW 272nd Street and LOS D from SW 272nd Street to SW 296th Street. By 2010, seven of the 14 intersections will operate with an unacceptable level of delay. By 2020, nine of the 14 intersections will operate at an unacceptable level of delay. To achieve a Level of Service C or better at each of the 14 intersections in 2010 and 2020, a series of potential improvements were considered. These improvements included consideration for installing traffic signals at the four unsignalized intersections, the adjustment of traffic signal timing at several existing signalized intersections, and the addition of intersection approach turn lanes at three intersections (beyond those intersections turn lanes that are already committed for implementation).

If these improvements were to be implemented, all of the intersections along Krome Avenue - except for the intersection with Okeechobee Road – would operate at an acceptable level of service in the year 2020. However, the addition of traffic signals at the four unsignalized intersections could add delay (and a resulting increase in travel time) for north-south travel along Krome Avenue. Thus, a traffic signal warrant analysis should be conducted and an evaluation of potential negative impacts to installing new traffic signals should be considered before committing to the installation of these new traffic signals.

The highway level of service analysis along Krome Avenue showed that the two southernmost segments (from Avocado Drive to Eureka Drive) operate at an acceptable level of service while the three northernmost segments (from Eureka Drive to Okeechobee Road) operate at an unacceptable level of service. This difference in results is due to the different methodologies applied. There are two conclusions that were drawn from this analysis.

- The travel speeds for the three northernmost segments <u>between</u> traffic signals are close to the posted speed limits. However, delay at the signalized intersections significantly reduces the overall segment travel speeds. Thus, improved traffic signal timing and the addition of intersection approach turn lanes north of Eureka Drive (SW 184th Street) could improve the level of service performance of these three segments. However, the addition of traffic signals at Howard Street (SW 136th Street) and Okeechobee Road (US 27) could counteract this improvement in travel speed by adding delay to motorists traveling along Krome Avenue.

- Motorists spend a large percentage of time following other vehicles that prevent them from traveling at their desired speed. This is also true due to the limited passing opportunities that occur because many vehicles are traveling in the opposite direction. This impact on motorist travel is called percent time-spent-following. It is 66.7% under the existing conditions and is expected to be greater beginning in 2010. This is the primary reason for

the unacceptable segment levels of service in 2010 and 2020. Thus, either passing lanes or four-lane sections could be considered to reduce or eliminate this situation.

Safety Analysis

There are a number of intersections along the corridor that have abnormally high crash experience indicated by a safety ratio of greater than 1.0 (Safety ratios were calculated by comparing the calculated actual crash rates and the documented Florida critical crash rates). These high crash locations are:

- Coconut Palm Drive/SW 248th Street: with a safety ratio of 1.019 in 1998
- Howard Road/SW 136th Street: with a safety ratio of 1.187 in 2000
- Kendall Drive/SW 88th Street: with a safety ratio of 1.866 in 1996
- Tamiami Trail/SW 8th Street: with safety ratios ranging from 1.493 in 1996 to 2.251 in 1999
- Okeechobee Road/US27: with safety ratios of 1.327 in 1996 and 1.393 in 1999

In addition, the safety ratios for each of the five segments were above 1.0 for at least three years of the five years analyzed. This indicates that crash experience on Krome Avenue exceeds the statewide average for this type of roadway. For all the crashes documented from 1995 to 1999, the top five crash types were angle, rear-end, head-on, left turn, and hit tree/shrub.

On a daily basis, the percentage of trucks traveling on Krome Avenue ranges from 26% to 32% of the total number of vehicles. Of all the vehicles involved in the crashes, 3.5% involved medium trucks (4 rear wheels), 3.2% involved heavy trucks (2 or more rear axles), and 5.3% involved truck tractor (cab-bobtail). In some cases, trucks may have had an influence on crashes, but were not directly involved in the crash.

The number of fatal crashes increased significantly beginning in the year 2000. For the first seven months of the year 2002, the data indicates a similar trend in an increasing number of fatal crashes experienced in the corridor. The segment from Eureka Drive to south of Kendall Drive had the highest fatal crash rate. In a length of less than 5 miles, there were 14 fatal crashes from 1996 to 2001.

There were 122 crashes that resulted in severe injuries (106 crashes) or fatalities (16 crashes) for the years 1995 to 1999. About 44% of all head-on crashes resulted in a severe injury or fatality, followed by hit pole (21%), angle (19%), and overturned vehicle (19%). All of these crashes and the additional 26 fatal crashes that occurred from January 2000 to July 2002 were plotted by milepost (Figure 5-3).

Potential Crash Counter Measures

The historical crash data from 1995 to 2000 was sorted and classified into four crash types: intersection, roadway, roadside, or other crash type. Once classified, potential countermeasures were identified. A field review was then conducted at the candidate locations to check the applicability of the countermeasures and final recommendations were made. The detailed crash data obtained on fatal crashes from 1995 to June 2002 was reviewed to determine the contributing causes and possible countermeasures.

System Countermeasures

Based on this analysis, a set of potential countermeasures to respond to for system issues was developed. These system wide countermeasures are divided into short-term and long-term actions in the list below:

Short-Term

- Raised pavement markers (RPMs) and improved pavement markings. This treatment will have the lowest cost and can likely be implemented in the shortest period of time.
- Provide a smooth transition to the clear zone. This treatment can be part of a roadway maintenance program.
- Improve the condition of existing shoulders/clear zone.

Long-Term

- Evaluate the feasibility of changing the existing two-lane undivided Krome Avenue corridor to include:
  - Four-lane median separated sections;
  - Passing lanes; and/or
  - A median Separated Two-Lane Section.
- Provision of the widest feasible clear zone and improved shoulder design.
- Upgrade Krome Avenue to controlled access facility standards.
- Provision of a roadway lighting system in the corridor.

Intersection Countermeasures

A field review of 14 intersections was conducted to determine short-term and long-term countermeasures to enhance safety at those points along Krome Avenue. In summary, the intersection countermeasures recommended included the following:

Short Term

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Cut back foliage boundary
- Install back plates on traffic signals to improve visibility
- Remove yield signs from intersection and have right turns operate through the signal (right-turn on red) at the Kendall Drive intersection
- Level transition from travel way to clear zone at the Howard Road intersection

Long Term

- Increase lighting at the intersections
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections

- Provide improved drainage at intersections
- Improve intersection warning and visibility through advanced warning signs and flashing lights where necessary
- Either relocate the utility pole or provide guardrail or other crash shield for the utility pole on the north side of the east approach at the Quail Roost Drive intersection.

Conclusions

In summary, it is clear that traffic volume growth and increasing levels of congestion have contributed to driver frustration and attempts to make risky passing maneuvers on Krome Avenue. This has probably led to an increase in the number and severity of crashes in the corridor. Short of widening the highway to a four lane divided section, there are a number of congestion and safety countermeasures that could be considered in the short-term and long-term that will enhance mobility and safety in the corridor. (Some of these improvements are consistent with the previously approved Action Plan and some of them are in addition to the Action Plan improvements.) However, there are four factors that, in combination, argue for the consideration of widening Krome Avenue to a four lane divided section:

- The fact that Krome Avenue is on the Florida Intrastate Highway System and the requirement that it be designated as controlled-access facility with a cross-section that provides for at least four lanes with a restrictive median.
- The likelihood that the high percentage of trucks that use the entire length of the corridor contribute to an increase in crash severity when trucks are involved in crashes.
- The increasing levels of roadway and intersection congestion and the difficulty in mitigating these levels of congestion short of providing for additional north-south through movement capacity.
- The crash experience on Krome Avenue exceeds the statewide average for this type of roadway. The high number of crashes and the increase in crash severity (as demonstrated by an increase in the number of fatal crashes largely due to head-on and angle collisions) that likely would be mitigated by physically separating the directions of travel with a median.

For these reasons, it is recommended that a Project Development and Environment process be conducted to consider the range of solutions for improving the operational and safety characteristics of Krome Avenue. This PD&E study should consider the potential improvements that have been suggested by this corridor study (including the possibility of traffic signals) and additional improvements that may come from the public involvement effort that occurs during the PD&E study.

Section 1

Introduction

1. Introduction

The Krome Avenue Phase 2 Corridor study was authorized to provide for an analysis of existing and future conditions along this highway in southwest Miami-Dade County, Florida. The corridor location is shown in Figure 1-1. The portion of Krome Avenue that was analyzed begins at Avocado Drive (SW 296th Street) at the northern boundary of the City of Homestead and extends for almost 33 miles to its northern terminus at Okeechobee Road (US 27).

There are two purposes for this corridor study:

- To develop short-term (year 2010) and long-term (year 2020) traffic forecasts and to conduct highway and intersection capacity analyses for these future conditions. This analysis will allow for a determination of the extent to which levels of congestion will increase (despite the commitment that has been made to construct some intersection capacity improvements). An analysis of potential segment and intersection improvements will be suggested to mitigate these future levels of congestion.

- To conduct a safety analysis of prior crash (accident) history and to conduct field investigations to identify short-term and long-term actions that could mitigate the unacceptably high number and severity of crashes that have occurred.

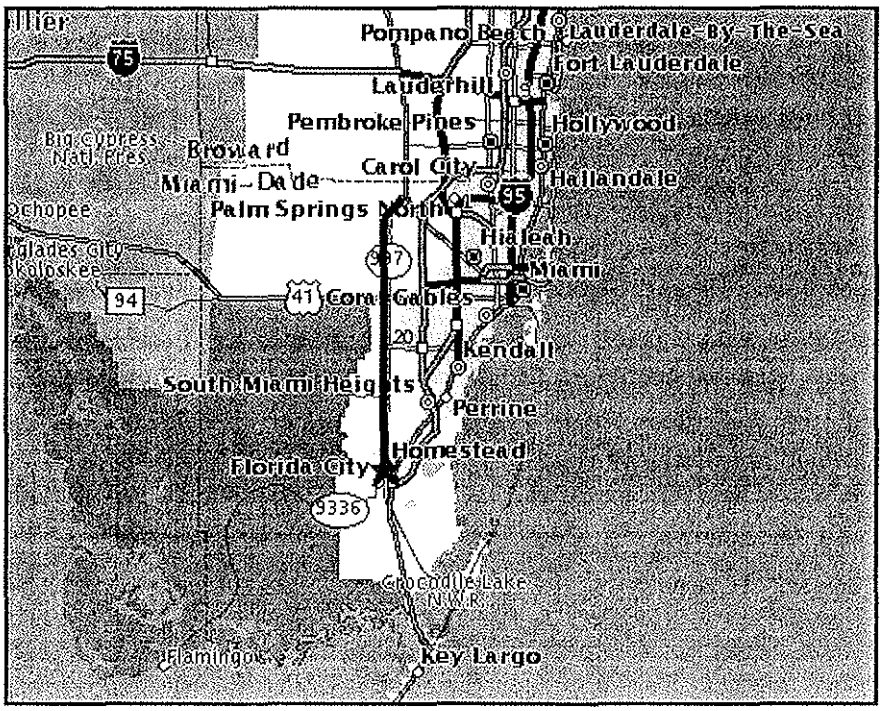
This study area is divided into five segments for analysis purposes:

- SW 296th Street (Avocado Drive) to SW 232nd Street (Silver Palm Drive) – 4.052 miles
- SW 232nd Street (Silver Palm Drive) to SW 184th Street (Eureka Drive) – 3.017 miles
- SW 184th Street (Eureka Drive) to SW 88th Street (Kendall Drive) – 6.535 miles
- SW 88th Street (Kendall Drive) to SW 8th Street (Tamiami Trail) – 4.999 miles
- SW 8th Street (Tamiami Trail) to US 27 (Okeechobee Road) – 14.275 miles

There are ten signalized intersections along this 33-mile section. Exclusive left turn lanes are provided at most of the signalized intersections in both northbound and southbound directions. The signal density (i.e., number of signals per mile) varies significantly on the five segments listed above. From south to north, the five segment signal densities are: 0.99 per mile, 0.99 per mile, 0.15 per mile, 0.20 per mile, and 0.04 per mile, respectively. Thus, the two southernmost segments (7.1 miles) are more suburban in character. The third and fourth segments (11.5 miles) have experienced traffic growth due to the westward expansion of development along the Kendall Drive and Tamiami Trail corridors. The northernmost segment (14.3 miles) is the most rural in character and accommodates primarily long-distance trips between Okeechobee Road (US 27) and the Homestead/Florida City area.

The remainder of this report is divided into five sections: traffic volume projections, roadway improvements, operational analysis, safety analysis, and potential crash counter measures.

Figure 1-1: Site Vicinity



Section 2

Traffic Volume Projections

2. Traffic Volume Projections

Traffic volume growth factors for the future conditions analysis were determined by an evaluation of historical Average Daily Traffic (ADT) volumes from 1996 to 2001 and the Long-Range Transportation Plan Model's base year (1999), year 2015, and year 2025 traffic volume projections.

Historical Growth and Traffic Projections

Annual Daily Traffic (ADT) counts for the last six years (1996-2001) were obtained from the Florida Department of Transportation (FDOT). A regression analysis was performed on the six data points to find the best-fit linear and logarithmic traffic projections. Using the best-fit linear traffic projection, annual linear growth rates for each study area roadway segment were determined. The six years of ADT counts and the best-fit linear annual growth rates are shown in Table 2-1.

Table 2-1: Historical ADTs and Best Fit Linear Annual Growth Rate

Segment Limits	Average Daily Traffic (ADT)						Linear Annual Growth Rate*
	1996	1997	1998	1999	2000	2001	
Avocado Drive (SW 296th Street) to Silver Palm Drive (SW 232nd Street)	7,700	10,700	10,900	12,000	13,500	14,100	13.92%
Silver Palm Drive (SW 232nd Street) to Eureka Drive (SW 184th Street)	8,400	10,900	10,900	12,500	15,100	14,600	14.61%
Eureka Drive (SW 184th Street) to Kendall Drive (SW 88th Street)	8,500	10,700	11,400	10,900	11,500	14,500	10.15%
Kendall Drive (SW 88th Street) to Tamiami Trail (SW 8th Street)	8,400	10,700	11,400	13,300	16,400	14,800	16.45%
Tamiami Trail (SW 8th Street) to US 27 (Okeechobee Rd)	5,500	6,700	7,200	7,600	8,300	9,000	11.26%

* Linear Annual Growth Rate is based on the best-fit linear regression for the ADT data from 1996 to 2001.

The linear and logarithmic traffic projections for each study area roadway segment are shown in Figure 2-1 through Figure 2-5. The equations and R-squared values shown on the figures are from the logarithmic traffic projections.

Long-Range Transportation Plan

The linear and logarithmic regression traffic projections were compared to the traffic projections from the Long-Range Transportation Plan (LRTP) Model. Also plotted with the regression traffic projections shown in Figure 2-1 through Figure 2-5 are the ADT's for each study area roadway segment from the LRTP model years 1999, 2015, and 2025.

As shown in Figure 2-1 and Figure 2-4, the logarithmic traffic projections for the segments from Avocado Drive to Silver Palm Drive and from Kendall Drive to Tamiami Trial are similar in year 2025 to the Long-Range Transportation Plan (LRTP) Model projections. As shown in Figure 2-2 and

Figure 2-3 neither of the two regression lines for these two segments fit with the LRTP model for the Silver Palm Drive to Eureka Drive and Eureka Drive to Kendall Drive roadway segments. However, the logarithmic traffic projection is better than the linear projection from Silver Palm Drive to Eureka Drive considering both the 2015 and 2025 LRTP model points and from Eureka Drive to Kendall Drive considering both the 1999 and 2015 LRTP model points. The LRTP model data from Tamiami Trail to US 27 shown in Figure 2-5 cannot be used to help determine a future traffic projection for that segment given how low the ADTs from the LRTP are compared to the historical data.

Figure 2-1: Traffic Volume Projections, Avocado Drive to Silver Palm Drive

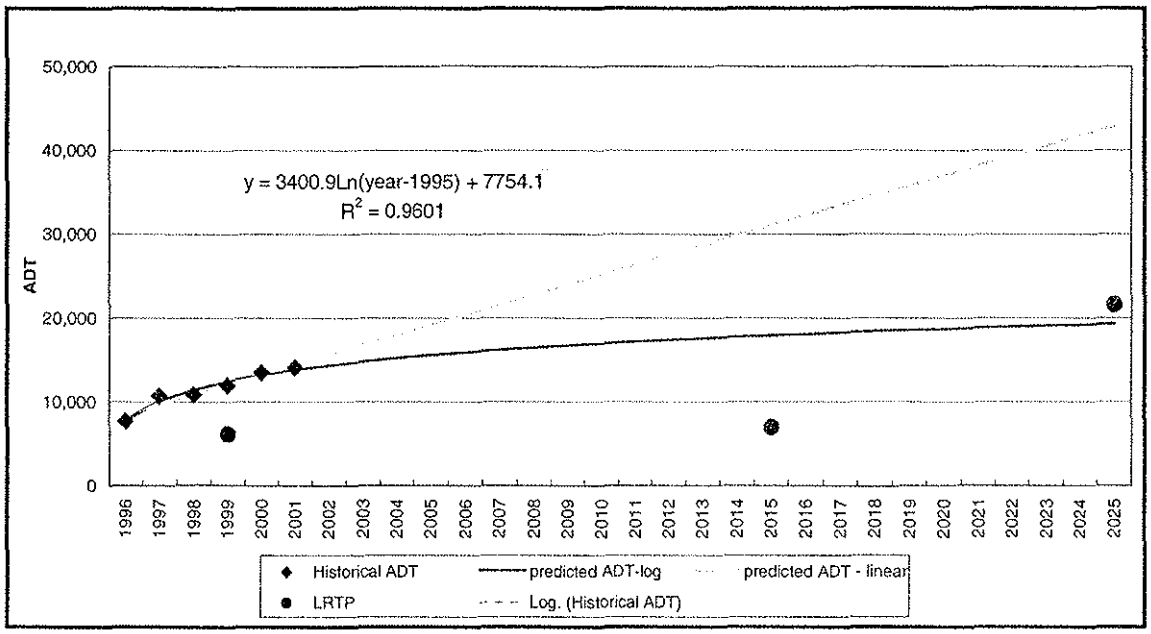


Figure 2-2: Traffic Volume Projections, Silver Palm Drive to Eureka Drive

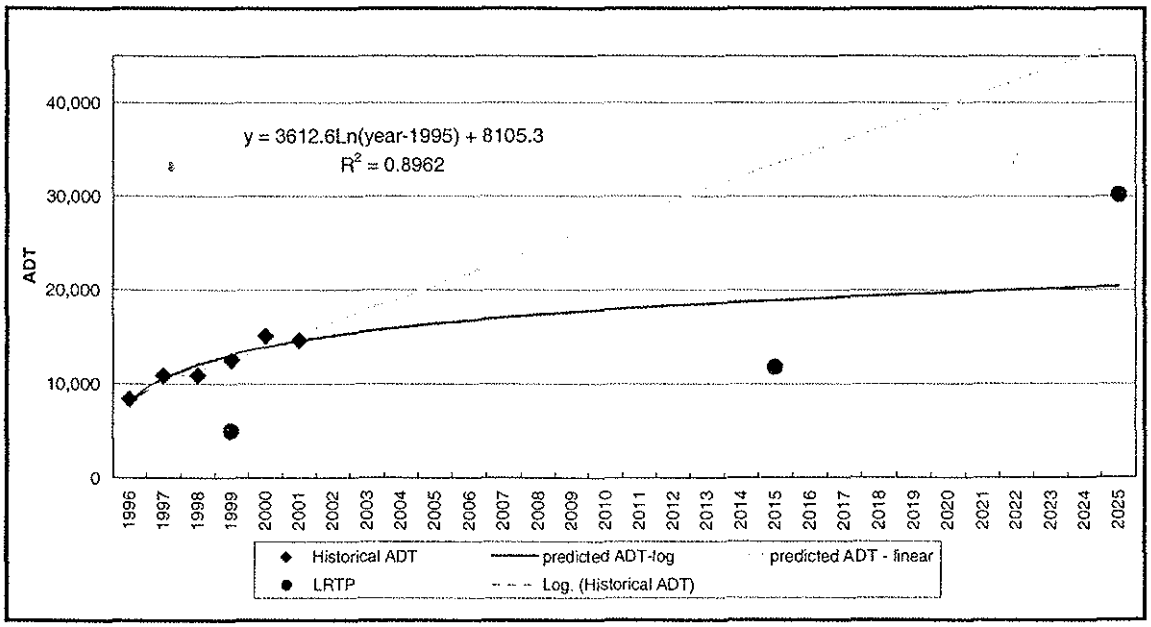


Figure 2-3: Traffic Volume Projections, Eureka Drive to Kendall Drive

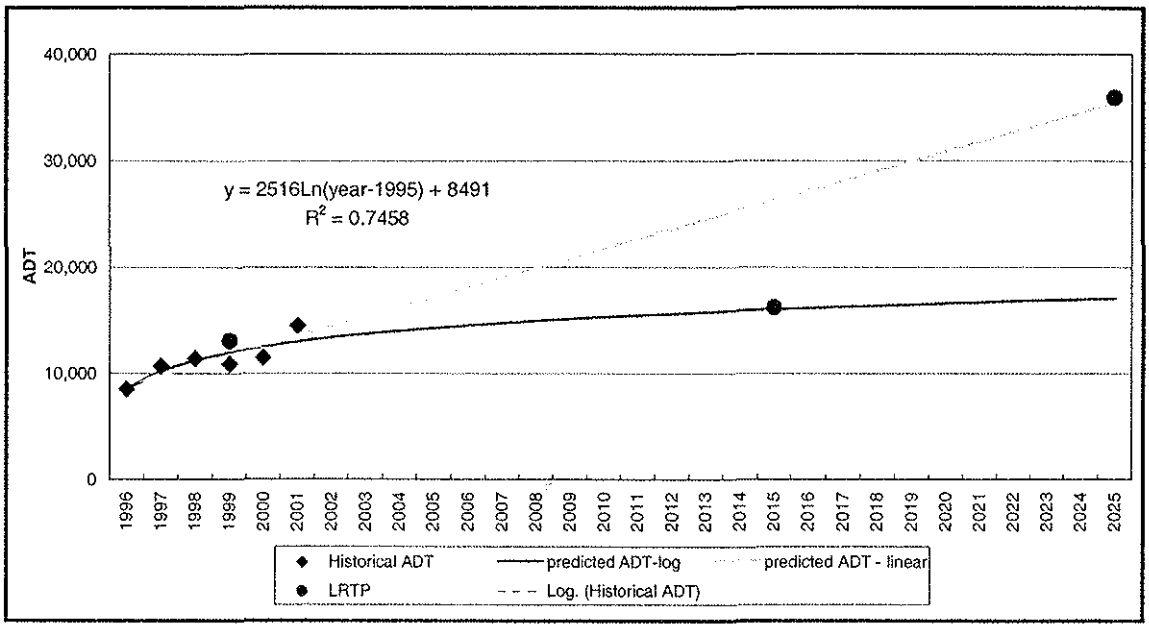


Figure 2-4: Traffic Volume Projections, Kendall Drive to Tamiami Trail

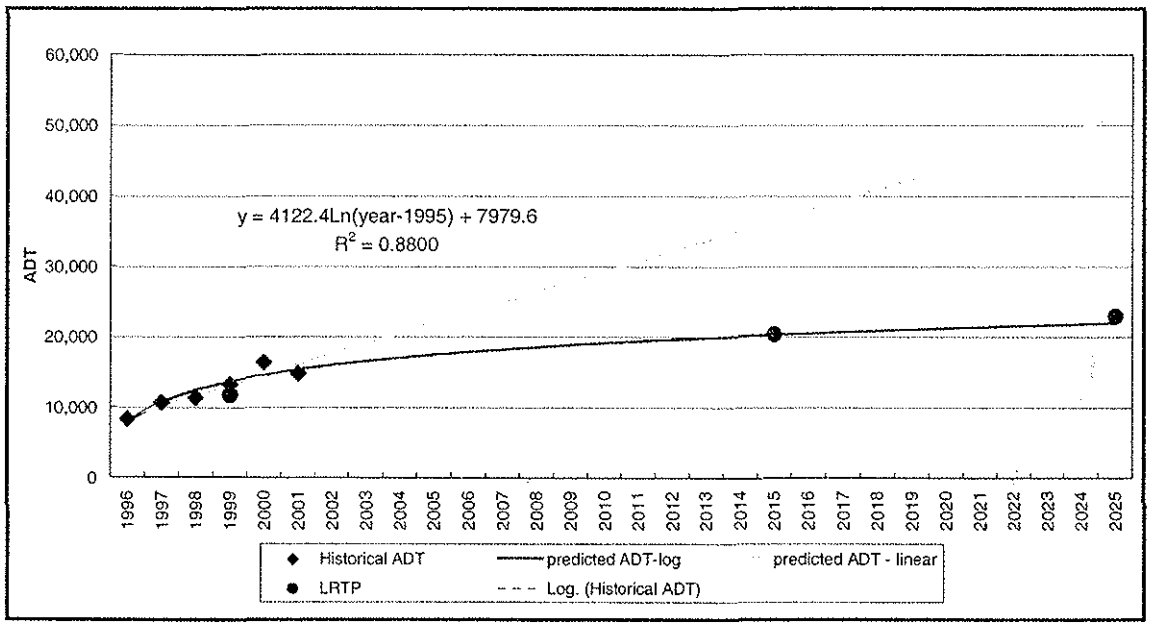
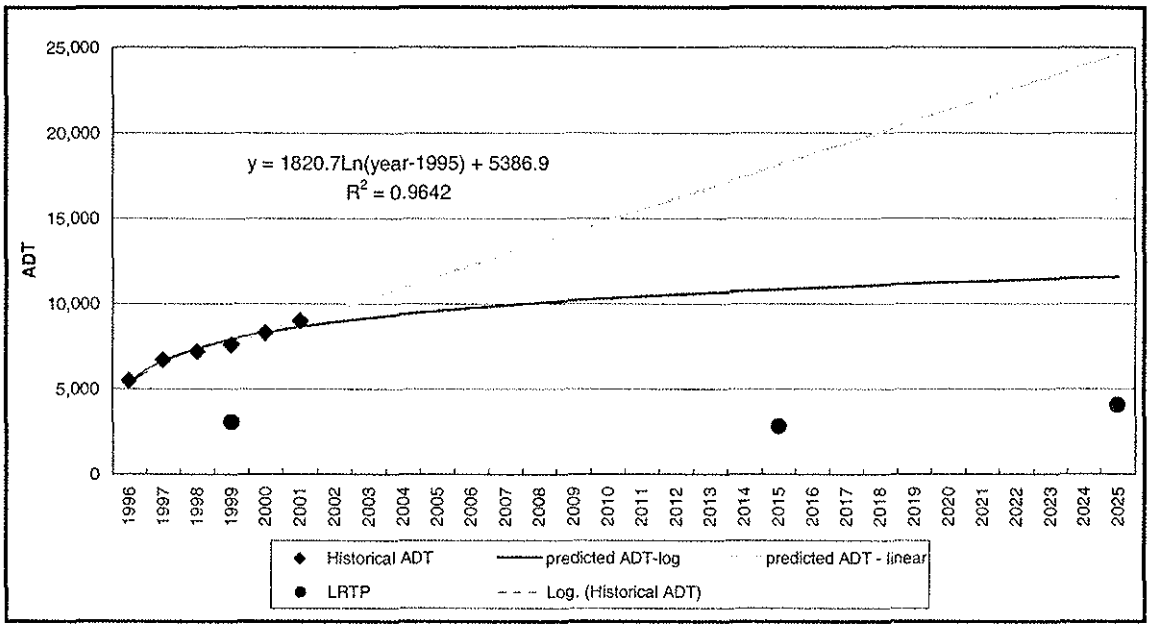


Figure 2-5: Traffic Volume Projections, Tamiami Trail to US 27



Projections: Linear vs. Logarithmic Regression Traffic Projections

Overall, the logarithmic regression traffic projections for each roadway segment were chosen as the better projection to determine the future analysis year traffic volumes. The logarithmic projection is more realistic of future growth for three reasons 1) a linear rate of traffic growth is not physically possible to sustain for an indefinite period of time, 2) the historical ADT data from 2000 and 2001 in some cases already shows a trend that is starting to level off (rate of growth is decreasing), and 3) as roadways become more congested, the rate of traffic growth decreases. In addition, the future land-use plan for the corridor does not indicate a significant change over the existing land-uses to warrant a continuation of the observed historical growth rates.

Applied Growth Rates

The logarithmic growth rates for each segment were applied to the year 2002 traffic volumes to obtain the year 2010 and year 2020 traffic volume projections. They are shown in Table 2-2.

The growth rate for the segment between Eureka Drive to Kendall Drive was lower than the growth rates for the adjacent segments. Thus, to be conservative, the growth rate for this segment was based on the average growth rates of the segments directly to the north and south. The growth rate for the Kendall Drive to Tamiami Trail segment was applied to the Tamiami Trail to US 27 segment because the traffic volume projections for the Tamiami Trail to US 27 segment was the least reliable and because traffic volumes at the Krome Avenue/US 27 intersection must balance with the Krome Avenue/Tamiami Trail intersection.

The growth rate for US 27 (Okeechobee Road) from the LRTP model was applied to the through movements on US 27 at the Krome Avenue/US 27 intersection. The growth rate for Kendall Drive was applied to all turning movements in and out of Krome Avenue. These growth rates provide a very conservative volume projection for the intersection. Growth rates applied to each of the intersections are shown in Table 2-3.

Table 2-2: Applied Growth Rates By Segment

Segment Limits	Growth From 2002 to 2010	Growth from 2002 to 2020	Projected ADT		
			2002	2010	2020
Avocado Drive (SW 296th Street) to Silver Palm Drive (SW 232nd Street)	18.03%	30.12%	14,372	16,964	18,701
Silver Palm Drive (SW 232nd Street) to Eureka Drive (SW 184th Street)	18.19%	30.38%	15,135	17,888	19,734
Eureka Drive (SW 184th Street) to Kendall Drive (SW 88th Street)	18.91%	31.59%	13,387	15,919	17,616
Kendall Drive (SW 88th Street) to Tamiami Trail (SW 8th Street)	19.63%	32.80%	16,001	19,143	21,249
Tamiami Trail (SW 8th Street) to US 27 (Okeechobee Rd)	19.63%	32.80%	8,930	10,683	11,858

Table 2-3: Applied Growth Rates by Intersection

Intersection	2002 to 2010	2002 to2020
Avocado Dr (SW 296 St)	18.0%	30.1%
Biscayne Dr (SW 288 St)	18.0%	30.1%
Epmore Dr (SW 272 St)	18.0%	30.1%
Bauer Dr (SW 264 St)	18.0%	30.1%
Coconut Palm Dr (SW 248 St)	18.0%	30.1%
Silver Palm Dr (SW 232 St)	18.1%	30.3%
Hainlin Mill Drive (SW 216 St)	18.2%	30.4%
Quail Roost Dr (SW 200 St)	18.2%	30.4%
Grossman Farm Rd (SW 192 St)	18.2%	30.4%
Eureka Dr (SW 184 St)	18.2%	30.4%
Howard Rd (SW 136 St)	18.2%	30.4%
Kendall Dr (SW 88 St)	18.6%	31.0%
Tamiami Trail (SW 8 St)	18.9%	31.6%
Okeechobee Rd (US 27) turning movements	18.9%	31.6%
Okeechobee Rd (US 27) through movements	24.9%	56.0%

Section 3

Roadway Improvements

3. Roadway Improvements

In general, Krome Avenue is a two-lane undivided roadway with exclusive left turn lanes provided at most of the signalized intersections. There are ten signalized intersections located on the corridor. The existing lane configurations and traffic control devices are shown on Figure 3-1.

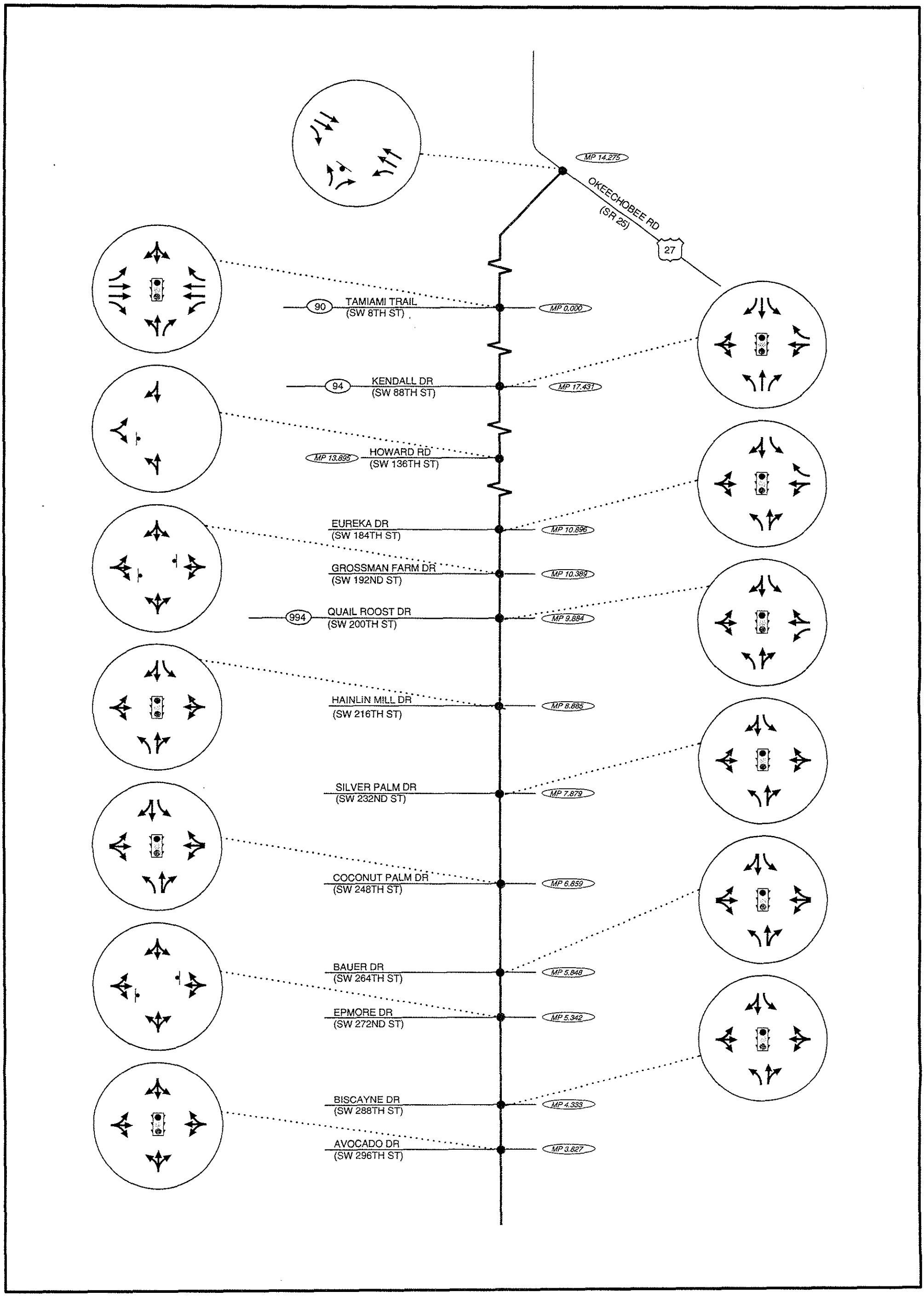
Action Plan

In October 1999, an Action Plan was completed for the entire length of Krome Avenue – from US 1 to Okeechobee Road (a length of 36.7 miles). (The northern 32.9 miles - beginning at Avocado Drive - comprise the portion of Krome Avenue that is the subject of this analysis.) This Action Plan was prepared in recognition that Krome Avenue is on the Florida Intrastate Highway System (FIHS) and that FIHS standards require that roadways on the FIHS system be designated as controlled-access facilities with a cross-section that provides for at least four lanes with a restrictive median.

During the Action Plan study, several alternatives were developed to maintain the rural character of Krome Avenue by maintaining it as a two-lane roadway. As a result of the technical analysis and sixteen months of public involvement activities, a series of safety and operational enhancements were recommended for the roadway. These improvements are described in Figure 3-2. The Action Plan describes a set of ultimate improvements that address mobility needs. They include intersection lane additions and traffic signal installations; access management and shoulder enhancements, the provision of passing zones, the addition of pedestrian and bicycle facilities, the provision of pavement marking and signage improvements, and the addition of clear recovery zones. A land-use overlay district was recommended for adoption to clarify parameters for development, to strengthen preservation measures, and to enhance the corridor's scenic qualities. This overlay district has not been established. In addition, none of the new traffic signals recommended for installation along the corridor are planned for installation.

Short Term Improvements

Some improvements that were recommended by the Action Plan are underway. First, a Project Development and Environment (PD&E) Study is in process south of Avocado Drive to consider the possibility of widening a portion of Krome Avenue (from US 1 to SW 328th Street) to a four lane-divided section. In conjunction with this PD&E Study, the City of Homestead is considering the possibility of providing for a truck bypass around the Historic District portion of Krome Avenue. Second, seven intersections are programmed for turn lane additions, improved return radii, signing and pavement markings, and lighting improvements: SW 296th, 272nd, 256th, 192nd, 168th, 136th, and 8th Street. At SW 8th Street (Tamiami Trail), the bridge north of the intersection is planned for widening. Five of these intersections are among the fourteen intersections included for analysis in this report. The future lane configurations at these five intersections are illustrated on Figure 3-3. Third, a one-mile long portion (beginning 1.7 miles north of Tamiami Trail) will have shoulders and rumble strips added to the edges of the roadway.



LEGEND

STOP SIGN

TRAFFIC SIGNAL

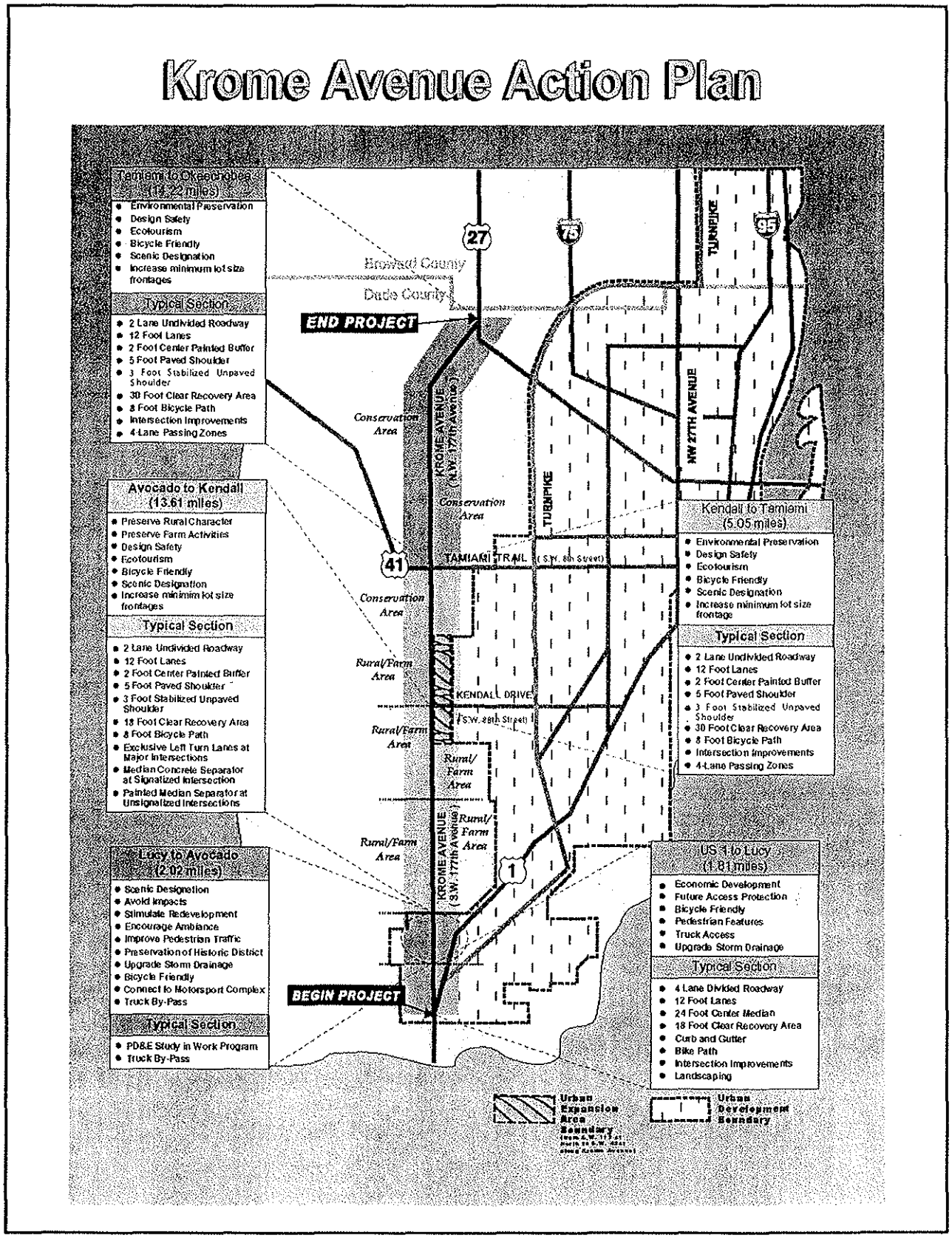
EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES

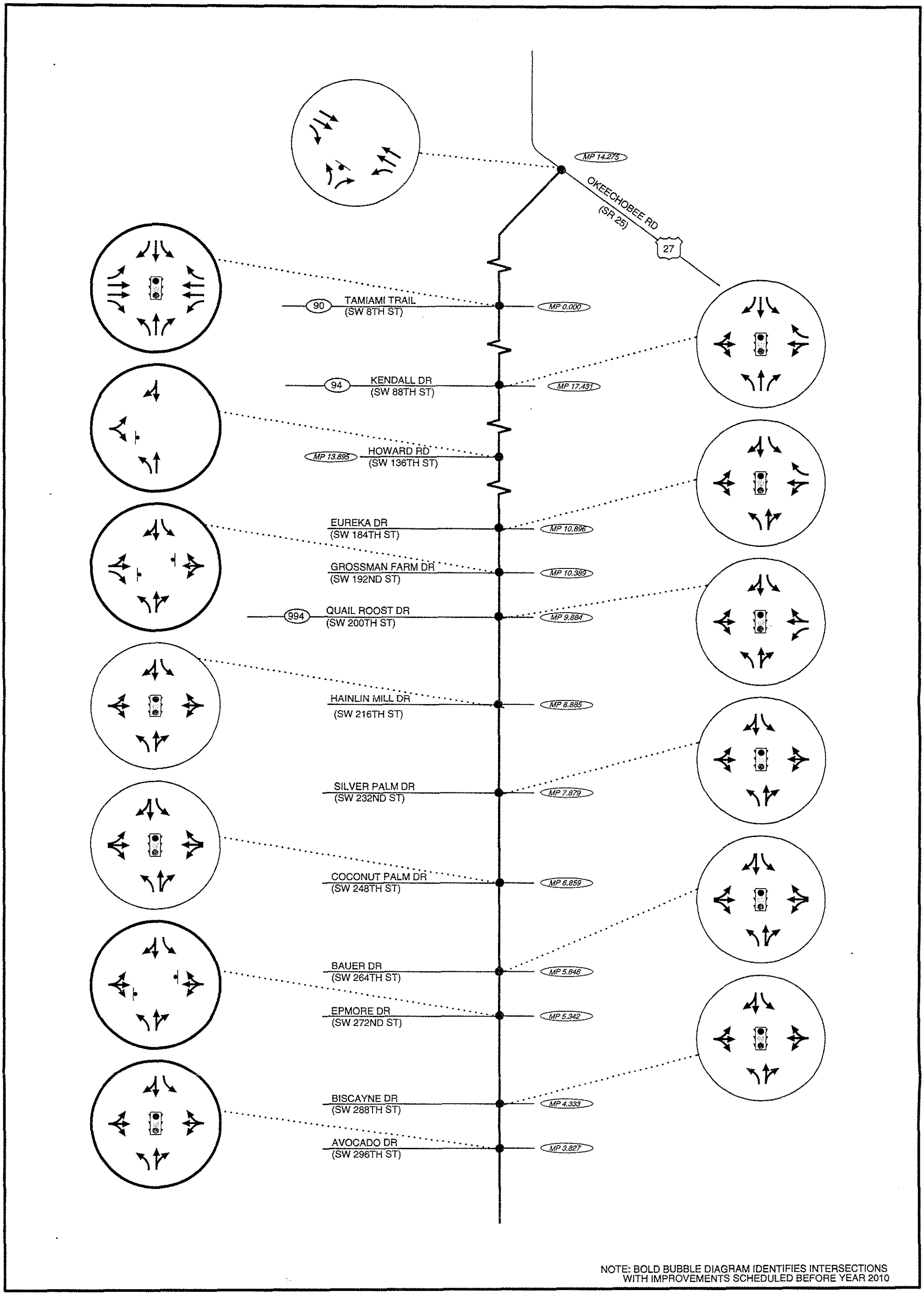
KROME AVENUE
MIAMI-DADE COUNTY, FLORIDA
OCTOBER 2002

FIGURE
3-1

4533_04krome.dwg

Figure 3-2: Krome Avenue Action Plan





NOTE: BOLD BUBBLE DIAGRAM IDENTIFIES INTERSECTIONS WITH IMPROVEMENTS SCHEDULED BEFORE YEAR 2010

LEGEND

STOP SIGN

TRAFFIC SIGNAL

YEAR 2010 LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES

KROME AVENUE MAIMI-DADE COUNTY, FLORIDA OCTOBER 2002	FIGURE 3-3

4533_04krome.dwg

Section 4

Operational Analysis

4. Operational Analysis

An operational analysis was performed at 14 intersections to determine level of service based on a quantification of congestion and delay. In addition, an operational analysis was performed along Krome Avenue (broken into five segments) to determine level of service based on a quantification of travel speed and percent time spent following. This analysis was conducted for peak season weekday conditions occurring for the existing (year 2002) conditions as well as for 2010 and 2020 conditions.

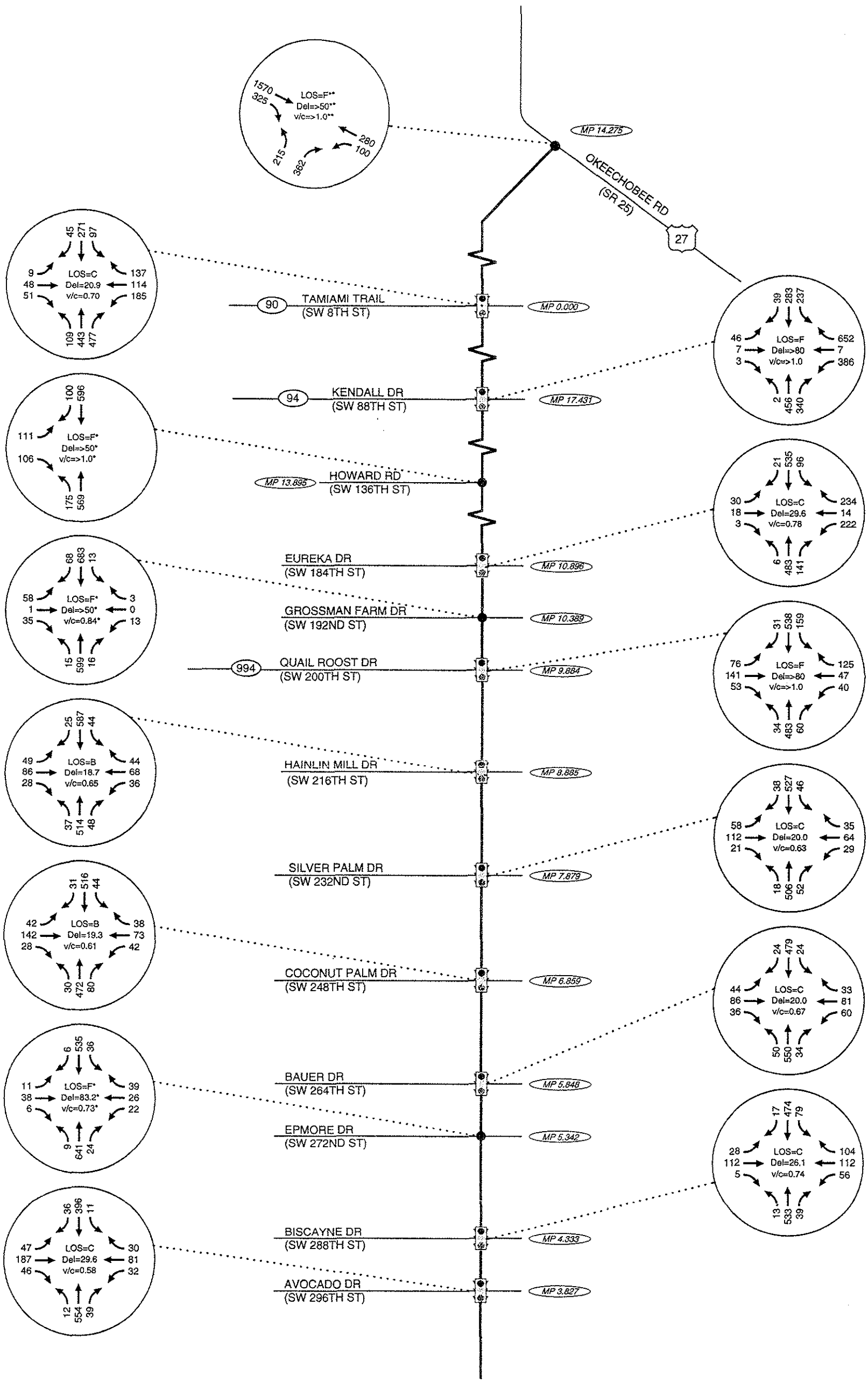
Intersection Level of Service

Level of service (LOS) analysis was performed for ten signalized intersections using Highway Capacity Software (HCS-Signals). LOS analysis was also conducted for four unsignalized intersections using HCS-Unsignal.

The analysis assumptions are as follows:

- The existing intersection turning movement counts were collected for the morning peak hours and an overall intersection peak hour factor was calculated. The projected 2010 and 2020 turning movement counts were based on the analysis discussed in Section 2 –Traffic Volume Projections - in this report. The traffic volume growth factors for each intersection in the years 2010 and 2020 are presented in Table 2-3. The peak hour factors for 2010 and 2020 conditions remain the same as for existing conditions.
- Existing signal timings at the signalized intersections were obtained from FDOT District 6 Traffic Operations Office. This is consistent with the Phase I (existing conditions) analysis for this project. The existing timing was used without optimization. The existing signal timing was also used for 2010 and 2020 conditions without optimization.
- Intersection lane configurations and traffic control devices for existing and future conditions are shown in Figure 3-1 and Figure 3-3, respectively. The future intersection lane configurations assume the addition of turn lanes at four of the intersections.
- The percentage of heavy vehicles was separately applied to each intersection approach.
- Due to the unique geometry at the Krome Avenue/US 27 intersection, two-stage gap acceptance was assumed for the Krome Avenue approach left turn movement. This means that motorists make two separate decisions in finding an adequate gap in US 27 traffic – first for eastbound US 27 traffic and then for westbound US 27 traffic.

Intersection turning movement volumes, levels of service, Control Delay, and critical volume to capacity ratios for the 14 intersections are presented in Figure 4-1, Figure 4-2, and Figure 4-3. This information is summarized for comparative purposes in Table 4-1. It is assumed that Level of Service C is the acceptable standard north of SW 272nd Street and LOS D is the acceptable standard south of SW 272nd Street. . Today, six of the 14 intersections operate with an unacceptable level of delay (including all four of the unsignalized intersections that were analyzed). By 2010, nine of the 14 intersections will operate with an unacceptable level of delay. By 2020, ten of the 14 intersections will operate at an unacceptable level of delay.



* FOR CRITICAL MOVEMENT, NOT INTERSECTION
** USING TWO-STAGE GAP ACCEPTANCE

LEGEND

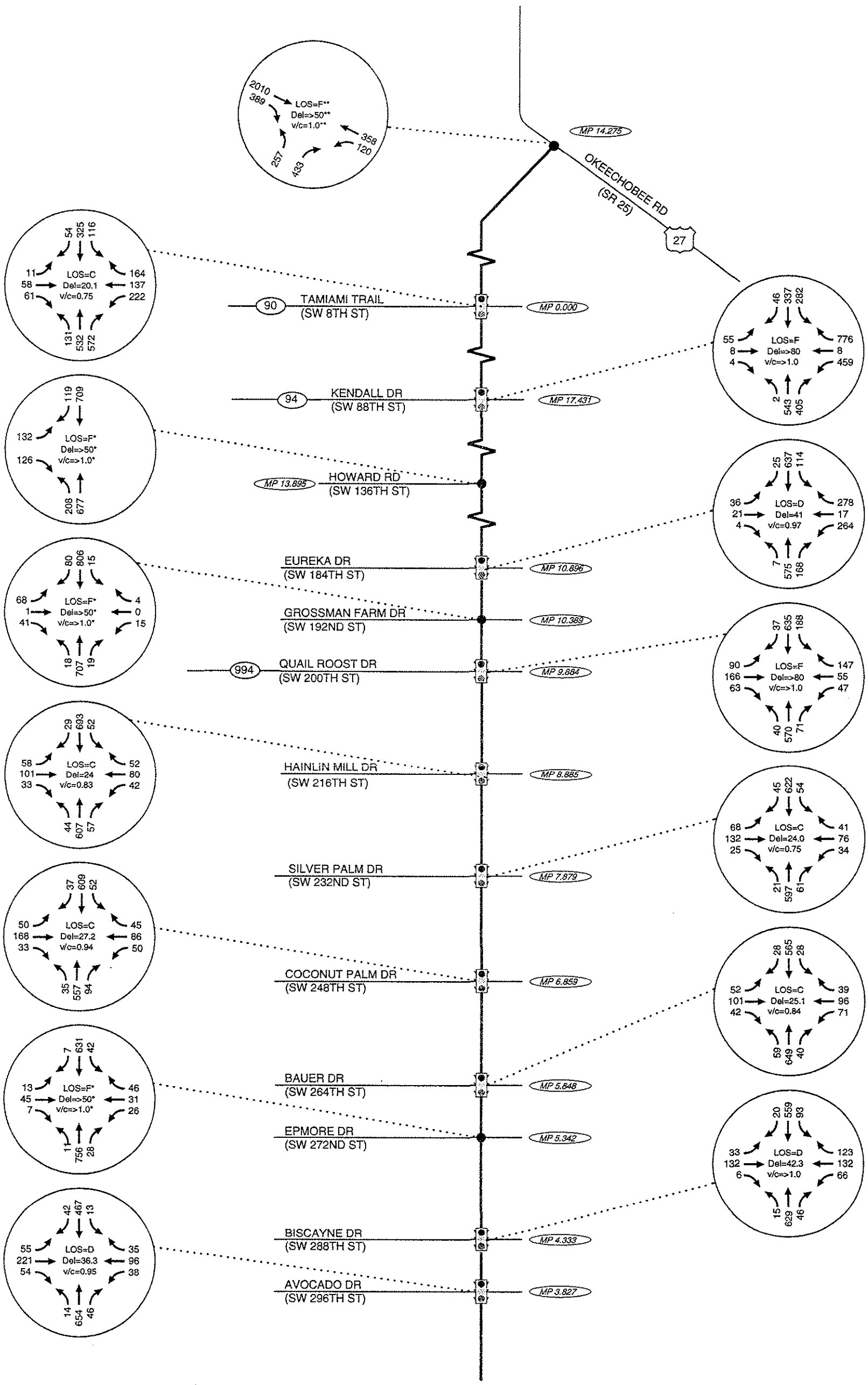
LOS =	INTERSECTION LEVEL OF SERVICE
Del =	INTERSECTION CONTROL DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c =	CRITICAL VOLUME-TO-CAPACITY RATIO

EXISTING TRAFFIC CONDITIONS WEEKDAY AM PEAK HOUR

KROME AVENUE
MIAMI-DADE COUNTY, FLORIDA
OCTOBER 2002

FIGURE
4-1

4533_04krome.dwg



* FOR CRITICAL MOVEMENT, NOT INTERSECTION
** USING TWO-STAGE GAP ACCEPTANCE

LEGEND

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

YEAR 2010 TRAFFIC CONDITIONS
WEEKDAY AM PEAK HOUR

KROME AVENUE MIAMI-DADE COUNTY, FLORIDA OCTOBER 2002	FIGURE 4-2	K

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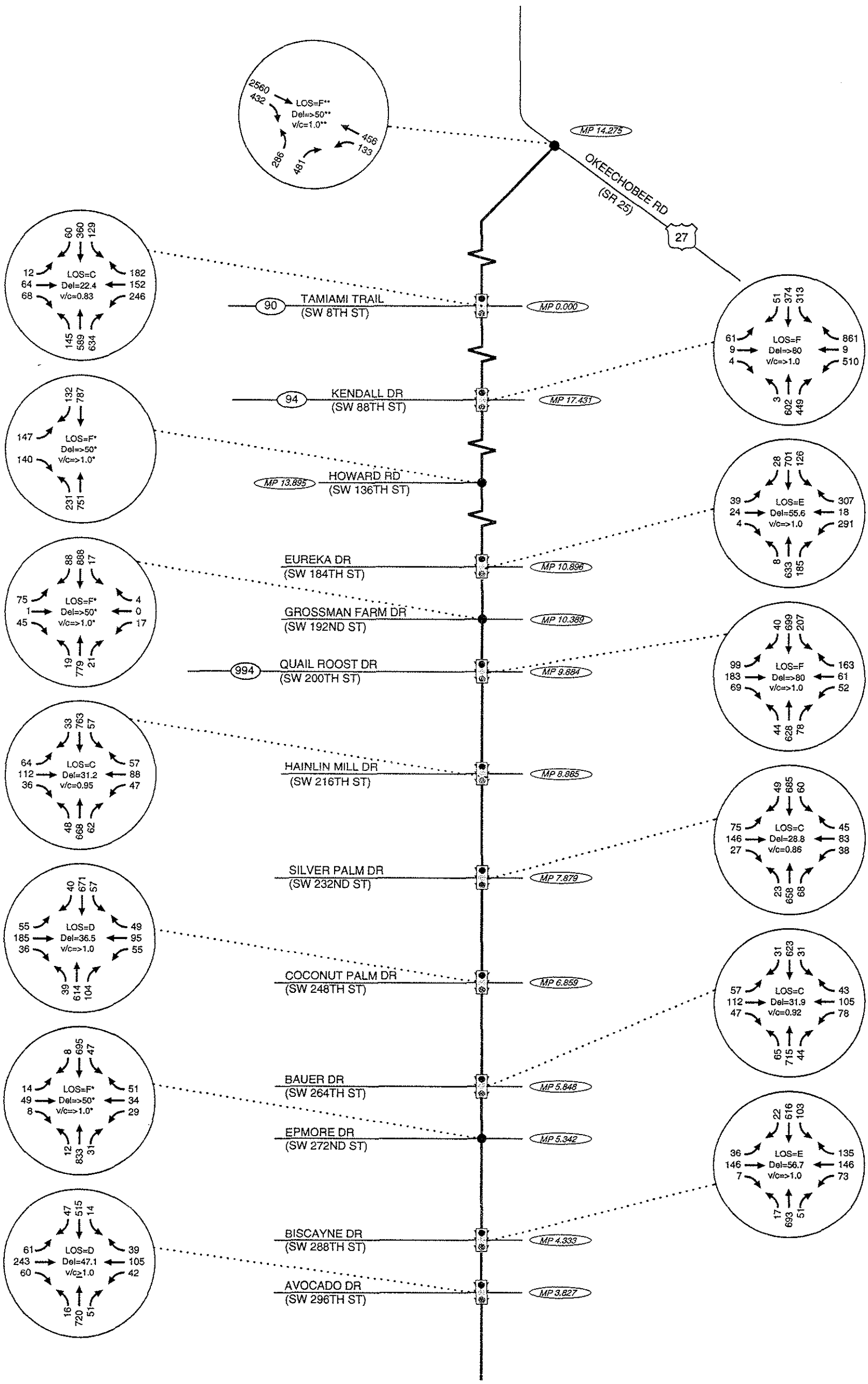


* FOR CRITICAL MOVEMENT, NOT INTERSECTION
** USING TWO-STAGE GAP ACCEPTANCE

LEGEND

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION CONTROL DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
v/c = CRITICAL VOLUME-TO-CAPACITY RATIO

YEAR 2020 TRAFFIC CONDITIONS
WEEKDAY AM PEAK HOUR

KROME AVENUE MIAMI-DADE COUNTY, FLORIDA OCTOBER 2002	FIGURE 4-3

4533_04krome.dwg

Table 4-1: Intersection Levels of Service with Committed Improvements

Intersection	2002			2010			2020		
	Critical v/c	Delay (sec)	LOS	Critical v/c	Delay (sec)	LOS	Critical v/c	Delay (sec)	LOS
Avocado Drive/SW 296th Street	0.58	29.6	C	0.95	36.3	D	>1.0	47.1	D
Biscayne Drive/SW 288 Street	0.74	26.1	C	>1.0	42.3	D	>1.0	56.7	E
Epmore Drive/SW 272 Street*	0.73	>50.0	F	>1.0	>50	F	>1.0	>50	F
Bauer Drive/SW 264 Street	0.67	20.0	C	0.84	25.1	C	0.92	31.9	C
Coconut Palm Drive/SW 248 Street	0.61	19.3	B	0.94	27.2	C	>1.0	36.5	D
Silver Palm Drive/SW 232 Street	0.63	20.0	C	0.75	24.0	C	0.86	28.8	C
Hainlin Mill Drive/SW 216 Street	0.65	18.7	B	0.83	24.0	C	0.95	31.2	C
Quail Roost Drive/SW 200 Street	>1.0	>80.0	F	>1.0	>80.0	F	>1.0	>80.0	F
Grossman Farm Road/SW 192 Street*	0.84	>50.0	F	>1.0	>50.0	F	>1.0	>50.0	F
Eureka Drive/SW 184 Street	0.78	29.6	C	0.97	41.0	D	>1.0	55.6	E
Howard Road/SW 136 Street*	>1.0	>50	F	>1.0	>50	F	>1.0	>50	F
Kendall Drive/SW 88 Street	>1.0	>80	F	>1.0	>80	F	>1.0	>80	F
Tamiami Trail/SW 8 Street	0.70	20.9	C	0.75	20.1	C	0.83	22.4	C
Okeechobee Road/US 27*	>1.0	>50.0	F	>1.0	>50.0	F	>1.0	>50.0	F

*Unsignalized intersections, the performance measures recorded are for the critical movement and NOT for the entire intersection.

Intersection Levels of Service with Potential Improvements

To achieve a Level of Service C or better at each of the 14 intersections in 2010 and 2020, a series of potential improvements were considered. These potential improvements are described in Table 4-2. These improvements included consideration for installing traffic signals at the four unsignalized intersections, the adjustment of traffic signal timing at seven existing signalized intersections, and the addition of intersection approach turn lanes at five intersections (beyond those intersection turn lanes that are already committed for implementation). Assuming that these improvements are in place, Table 4-2 provides the resulting volume-to-capacity ratios and levels of service at the appropriate intersections. If these improvements were to be implemented, all of the intersections along Krome Avenue - except for the intersections with Kendall Drive and Okeechobee Road – would operate at an acceptable level of service. However, the addition of traffic signals at the four unsignalized intersections could add delay (and a resulting increase in travel time) for north-south travel along Krome Avenue. Thus, a traffic signal warrant analysis should be conducted and an evaluation of potential negative impacts to installing new traffic signals should be considered before committing to the installation of these new traffic signals.

Segment Level of Service

An analysis of level of service was conducted for Krome Avenue for the divided five segments, as listed below:

- SW 296th Street (Avocado Drive) to SW 232nd Street (Silver Palm Drive) – 4.052 miles
- SW 232nd Street (Silver Palm Drive) to SW 184th Street (Eureka Drive) – 3.017 miles
- SW 184th Street (Eureka Drive) to SW 88th Street (Kendall Drive) – 6.535 miles
- SW 88th Street (Kendall Drive) to SW 8th Street (Tamiami Trail) – 4.999 miles
- SW 8th Street (Tamiami Trail) to US 27 (Okeechobee Road) – 14.275 miles

Many of the input parameters, such as heavy vehicle percentages and through approach green time, were imported directly from the signalized intersection analysis. For analysis purposes, the two southernmost segments (from Avocado Dr/SW 296th Street to Eureka Dr/SW 184th Street) were considered "suburban" due to the relatively high traffic signal density (about one signal per mile). The Urban Street analysis procedure was used for this analysis. Travel time (and average travel speed) is the service measure used to determine level of service. The northernmost segments (from Eureka Dr/SW 184th St to US 27/Okeechobee Road) were considered as rural highway segments. These segments were classified as Class 1 Two-Lane Highway segments. For this reason, a combination of travel time and the percent time-spent-following other vehicles are the service measures used to determine level of service. The analysis assumptions are as follows:

- For all five segments, from Avocado Drive to Okeechobee Road, the free flow speed is assumed to be 5 mph higher than the average posted speed limit (calibrated to better reflect the field observation).
- For the calculation of segment level of service and v/c ratio, the percentage of heavy vehicles was input by intersection approach and was imported from the signalized intersection analysis. Thus, the operation of each segment of Krome Avenue reflects the impact of the large percentage of heavy vehicles on the highway.

Travel time and delay runs were conducted in both directions on Krome Avenue to measure the actual travel times by segment. These field-measured travel time runs compared favorably with the calculated travel time runs (using Highway Capacity software), thereby validating the results for the estimation of future levels of service. The results for the existing and future segment level of service analysis are summarized in Table 4-3.

It is evident that the two southernmost segments operate at an acceptable level of service while the three northernmost segments operate at an unacceptable level of service. This difference in results is due to the different methodologies applied. (The minimum Level of Service C travel speed threshold is 27 mph for an Urban Street and 45 mph for a two-lane rural highway.) Thus, the calculated speeds north of Eureka Drive do not meet motorist expectations for a Class 1 Rural Highway. There are two conclusions that were drawn from this analysis.

- The travel speeds for the three northernmost segments between traffic signals are close to the posted speed limits. However, delay at the signalized intersections significantly reduces the overall segment travel speeds. Thus, improved traffic signal timing and the addition of intersection approach turn lanes north of SW 184th Street could improve the level of service performance of these three segments. However, the addition of traffic signals at Howard Street (SW 136th Street) and Okeechobee Road (US 27) could counteract this improvement in travel speed by adding delay to motorists traveling along Krome Avenue.

- The high degree of percent time-spent-following north of SW 184th Street (shown in Table 4-3) indicates that a large percentage of motorists along Krome Avenue are not able to travel at their desired speed due to 1) the presence of slow-moving vehicles in front of them and 2) limited passing opportunities due to the frequency of vehicles traveling in the opposite direction. (The Level of Service C threshold value for a Class 1 two-lane highway is 65% time-spent-following.) The percent time-spent- following of 66.7% and greater beginning in 2010 is the primary reason for the unacceptable segment levels of service in 2010 and 2020. Thus, either passing lanes or four-lane sections could be considered to reduce or eliminate this situation.

Table 4-2:Intersection Level of Service with Potential Improvements

Intersection	2010			2020		
	Potential Intersection Improvement	Critical v/c	LOS	Potential Intersection Improvement	Critical v/c	LOS
Avocado Drive/SW 296th Street*	Signal Timing Optimization	0.82	B	Signal Timing Optimization	0.85	B
Biscayne Drive/SW 288 Street	Signal Timing Optimization	0.83	B	Signal Timing Optimization	0.93	C
Epmore Drive/SW 272 Street*	Add Signal	0.87	B	Add Signal	0.92	B
Bauer Drive/SW 264 Street	None	0.84	C	None	0.92	C
Coconut Palm Drive/SW 248 Street	None	0.94	C	Signal Timing Optimization	0.73	B
Silver Palm Drive/SW 232 Street	None	0.75	C	None	0.86	C
Hainlin Mill Drive/SW 216 Street	None	0.83	C	None	0.95	C
Quail Roost Drive/SW 200 Street	Add EB Exclusive LT Lane & Optimize Signal Timing	0.79	B	Add EB Exclusive LT Lane & Optimize Signal Timing	0.79	B
Grossman Farm Road/SW 192 Street*	Add Signal	0.75	A	Add Signal	0.87	B
Eureka Drive/SW 184 Street	Add NB Exclusive RT Lane & Signal Timing Optimization	0.79	C	Add NB Exclusive RT Lane & WB Exclusive LT lane Signal Timing Optimization	0.87	C
Howard Road/SW 136 Street*	Add Signal	0.78	B	Add Signal	0.81	B
Kendall Drive/SW 88 Street	EBLT, WBLT, WB Left-Through shared Lane, WB Dual RT, SB Dual LT & Signal Timing Optimization	0.87	C	EBLT, WBLT, WB Left-Through shared Lane, WB Dual RT, SB Dual LT & Signal Timing Optimization	0.97	C
Tamiami Trail/SW 8 Street*	None	0.75	C	None	0.83	C
Okeechobee Road/US 27	Add Signal	1.02 (WB LT)	B	Add Signal	1.13 (WB LT)	E

* Intersections with committed geometry improvements

Table 4-3: Segment Levels of Service for the Morning Peak Hour

Analysis Criteria	Segment Limits	2002				2010				2020			
		Free flow Speed (mph)	Travel Speed (mph)	Percent Time-spent-Following	LOS	Free flow Speed (mph)	Travel Speed (mph)	Percent Time-spent-Following	LOS	Free flow Speed (mph)	Travel Speed (mph)	Percent Time-spent-Following	LOS
Suburban Arterial Analysis	Avocado Dr/SW 296th Street to Eureka Dr/ SW 184th Street (NB)	N/a	40.9	N/a	B(1)	N/a	38.3	N/a	B(1)	N/a	36.4	N/a	B(1)
	Avocado Dr/SW 296th Street to Eureka Dr/ SW 184th Street (SB)	N/a	41.3	N/a	B(1)	N/a	39.6	N/a	B(1)	N/a	38.8	N/a	B(1)
Two-Lane Rural Highway Analysis	Eureka Dr/ SW 184th Street to Kendall Drive/SW 88th Street	46.9	36.0	70.9%	E(2)	46.9	33.9	76.7%	E(2)	46.9	32.9	80.0%	E(2)
	Kendall Drive/SW 88th Street to Tamiami Trail/SW 8th Street	53.5	41.6	75.0%	D(2)	53.5	39.5	80.5%	E(2)	53.5	38.0	83.4%	E(2)
	Tamiami Trail/SW 8th Street to US27/Okeechobee Road	59.8	51.5	60.8%	C(2)	59.8	50.1	66.7%	D(2)	59.8	49.3	69.5%	D(2)

(1) based on HCM 2000 LOS Criteria for Urban Streets in Class I (Exhibit 15-2)
(2) based on HCM 2000 LOS Criteria for Two-Lane Highways in Class I (Exhibit 20-3)

Section 5

Safety Analysis

5. Safety Analysis

In addition to the safety analysis that was completed for Phase I, the number of total crashes along Krome Avenue from 1995 to 1999 was re-examined to further study several other factors: the driver's contributing cause to the crash, the crash severity, and the vehicle types involved in the crash. In addition, a further investigation of severe injury (1995 to 1999) and fatal crashes (1995 to July 2002) was conducted. This portion of the report presents the findings of this safety analysis.

Total Crash Results

As noted in the Phase I report, crash data for the Krome Avenue corridor was obtained from FDOT for analysis. Safety ratios at 17 intersections were calculated by comparing the calculated actual crash rates and the documented Florida critical crash rates. Intersections with a safety ratio of greater than 1.0 were considered high crash locations, as listed below:

- Coconut Palm Drive/SW 248th Street: 1.019 in 1998
- Howard Road/SW 136th Street: 1.187 in 2000
- Kendall Drive/SW 88th Street: 1.866 in 1996
- Tamiami Trail/SW 8th Street: ranging from 1.493 in 1996 to 2.251 in 1999
- Okeechobee Road/US27: 1.327 in 1996 and 1.393 in 1999

Crashes were divided by segment using the milepost location as an indicator. Safety ratios for each of the five segments were found. The safety ratios for each of the five segments were above 1.0 for at least three years of the five years analyzed. The percentage of crashes occurring at the intersections ranged from 74.2% in the southernmost segment (Avocado Drive to Silver Palm Drive) to 30.6% in the northernmost segment (Tamiami Trail to Okeechobee Road). As the distance between intersections increases, the percentage of crashes occurring at the intersections decreases.

Table 5-1 shows the summary of crashes from 1995 to 1999 by category. For total crashes, the top five documented harmful events were rear-end, angle, hit tree/shrub, sideswipe and left-turn. Head-on is ranked eighth with only 2.8% of all crashes. Over 70% of crashes that occurred at night were at locations with no streetlights. This percentage confirms that streetlights are not available throughout most of the length of the corridor.

The fatal crash rate and the fatality rate for the years 1995 to 2000 were calculated and are illustrated in Figure 5-1. Of the five segments analyzed, the segment from Eureka Drive to south of Kendall Drive had the highest fatal crash rate. In a length of less than 5 miles, there were 14 fatal crashes from 1996 to 2001. Fatal crashes will be discussed in more detail later in this chapter.

Table 5-1: Summary of Crashes by Category

	1995	1996	1997	1998	1999	Total	Percentage
Harmful Event							
Rear End	*32*	*48*	*64*	*78*	*77*	*299*	*31.0%*
Angle	*20*	*31*	*33*	*32*	*43*	*159*	*16.5%*
Tree/Shrub	*7*	*20*	*23*	*18*	*19*	*87*	*9.0%*
Sideswipe	*16*	*10*	*14*	*31*	*13*	*84*	*8.7%*
Left Turn	*15*	*14*	*19*	*16*	*18*	*82*	*8.5%*
Ran into Ditch/Culvert	4	9	5	8	13	39	4.0%
Overturn	4	6	6	9	12	37	3.8%
Head on	2	6	9	4	13	34	3.5%
Pole	4	3	4	5	3	19	2.0%
Moveable Object on Road	1	1	3	3	6	14	1.4%
Right Turn	2	0	2	6	1	11	1.1%
Ran off Road into Water	2	2	0	1	6	11	1.1%
Guardrail	2	0	2	3	3	10	1.0%
Pedestrian	1	2	0	2	2	7	0.7%
Other and Unknown	10	12	11	17	23	73	7.6%
TOTAL	122	164	195	233	252	966	
Lighting							
Daylight	72	110	135	166	175	658	68.1%
Dark (no street light)	31	36	35	33	41	176	18.2%
Dark (street light)	12	10	15	14	15	66	6.8%
Other and Unknown	7	8	10	20	21	66	6.8%
TOTAL	122	164	195	233	252	966	
Weather							
Dry	56	86	81	113	134	470	48.7%
Cloudy	50	55	79	90	81	355	36.7%
Rain	13	19	32	27	29	120	12.4%
Other and Unknown	3	4	3	3	8	21	2.2%
TOTAL	122	164	195	233	252	966	
Road Surface							
Dry	97	129	151	187	206	770	79.7%
Wet	22	34	40	42	38	176	18.2%
Slippery	2	0	2	3	2	9	0.9%
Other and Unknown	1	1	2	1	6	11	1.1%
TOTAL	122	164	195	233	252	966	
Site Location							
Not at Int/RRXing/Bridge	54	73	96	131	127	481	49.8%
At Intersection	51	71	80	77	95	374	38.7%
Driveway Access	8	7	10	17	16	58	6.0%
Influenced by Intersection	7	9	7	6	10	39	4.0%
R/R Crossing	0	1	0	2	1	4	0.4%
Bridge	0	1	0	0	1	2	0.2%
Other and Unknown	2	2	2	0	2	8	0.8%
TOTAL	122	164	195	233	252	966	
Severity							
Fatal	3	3	2	3	5	16	1.7%
Injury	73	104	108	117	147	549	56.8%
PDO	46	57	85	113	100	401	41.5%
TOTAL	122	164	195	233	252	966	

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	3.49	3.49
1997	5.73	14.32
1998	5.33	5.33
1999	--	--
2000	4.62	4.62
2001	6.40	12.79

TAMIAMI TRAIL to OKEECHOBEE RD

Year	Safety Ratio
1995	0.704
1996	1.484
1997	1.430
1998	1.579
1999	1.892
2000	1.542

TAMIAMI TRAIL to OKEECHOBEE RD

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	8.43	25.29
1996	--	--
1997	--	--
1998	--	--
1999	8.24	12.36
2000	6.68	6.68
2001	3.70	3.70

KENDALL DR to south of TAMIAMI TRAIL

Year	Safety Ratio
1995	0.877
1996	1.023
1997	0.973
1998	1.281
1999	1.280
2000	1.359

KENDALL DR to south of TAMIAMI TRAIL

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	9.86	9.86
1997	--	--
1998	3.67	3.67
1999	3.84	3.84
2000	10.93	14.57
2001	20.22	26.00

EUREKA DR to south of KENDALL DR

Year	Safety Ratio
1995	0.992
1996	1.127
1997	0.506
1998	0.952
1999	1.279
2000	1.422

EUREKA DR to south of KENDALL DR

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	--	--
1996	--	--
1997	--	--
1998	--	--
1999	7.26	7.26
2000	--	--
2001	--	--

SILVER PALM DR to south of EUREKA DR

Year	Safety Ratio
1995	1.242
1996	1.309
1997	1.778
1998	1.700
1999	2.233
2000	1.579

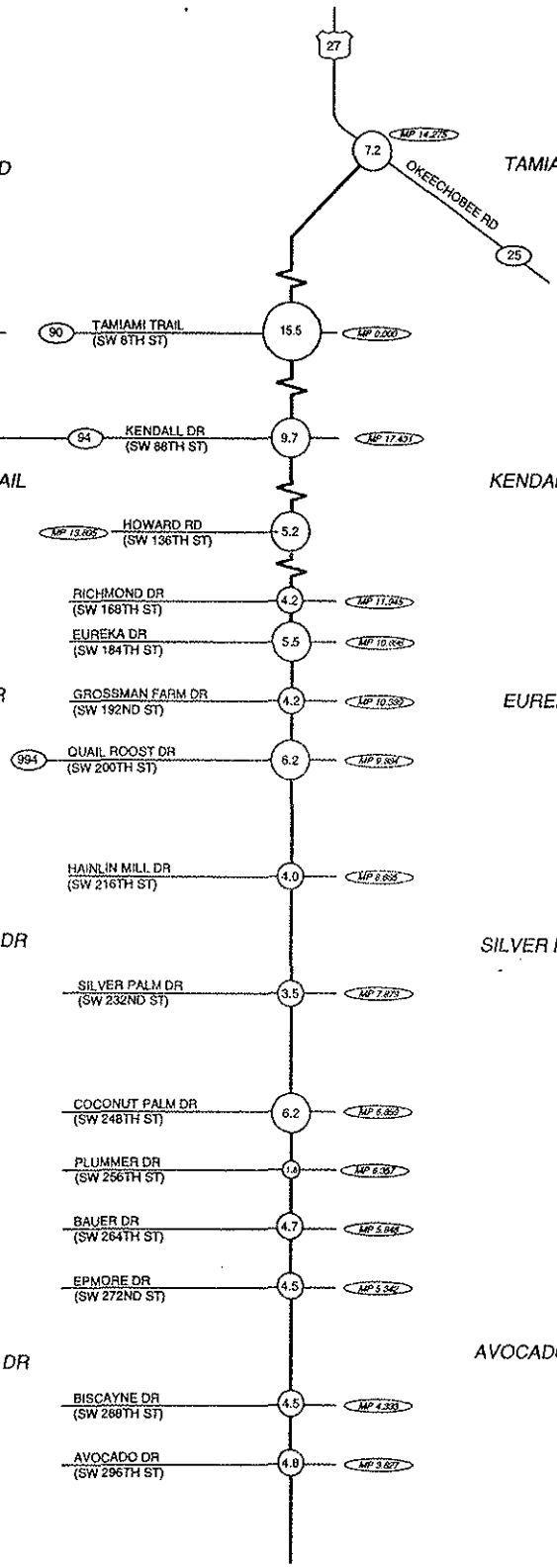
SILVER PALM DR to south of EUREKA DR

Year	Segment Fatal Crash Rate	Segment Fatality Rate
1995	17.13	17.13
1996	--	--
1997	--	--
1998	--	--
1999	5.64	5.64
2000	5.01	5.01
2001	4.80	9.60

AVOCADO DR to south of SILVER PALM DR

Year	Safety Ratio
1995	1.658
1996	1.787
1997	1.920
1998	1.921
1999	1.952
2000	1.384

AVOCADO DR to south of SILVER PALM DR



LEGEND

(4.2) Average Annual Number of Crashes (1995-1999)

SUMMARY OF SAFETY ANALYSIS

KROME AVENUE
MIAMI-DADE COUNTY, FLORIDA
OCTOBER 2002

FIGURE 5-1

CRASHRATES

Contributing Cause

Contributing cause was listed for each of the vehicles involved in a crash as a means to assign responsibility for the crash. Most of the crashes had more than one vehicle involved. This means that more than one 'contributing cause' was coded. After reviewing this parameter two-dimensionally, it was found that most of the crashes had only one main cause. For the study corridor, the primary causes included: failed to yield right of way, improper passing, improper lane change, improper turn, and disregarded traffic signal (See Figure 5-2).

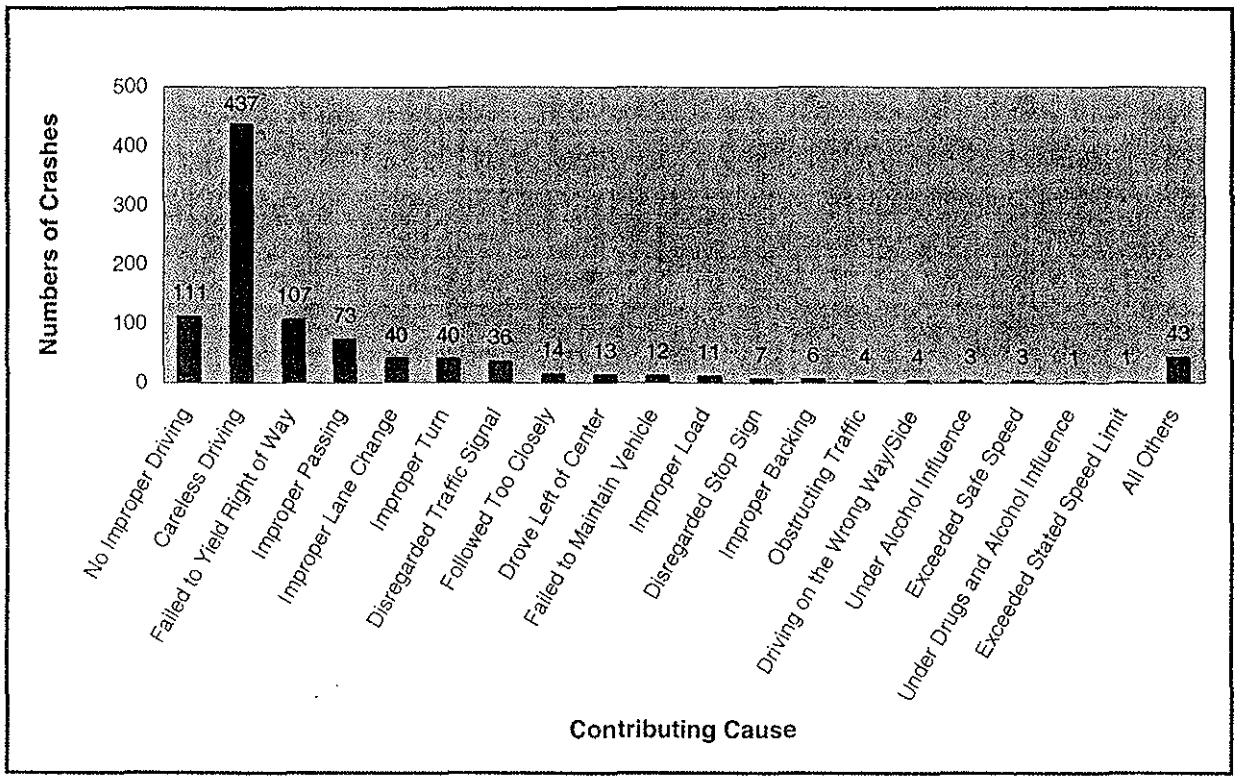


Figure 5-2: Total Number of Crashes by Contributing Cause

Vehicle Types

All of the crashes that occurred from 1995 to 1999 were classified into 13 vehicle types. On a daily basis, the percentage of trucks traveling on Krome Avenue ranges from 26% to 32% of the total number of vehicles. Of all the vehicles involved in the crashes, 3.5% involved medium trucks (4 rear wheels), 3.2% involved heavy trucks (2 or more rear axles), and 5.3% involved truck tractor (cab-bobtail). In some cases, trucks may have had an influence on crashes, but were not directly involved in the crash.

Fatal Crashes

The fatal crash summary was updated to include the crashes that occurred from March to July 2002. After reviewing the fatal crash report, some discrepancies were found. The fatal crash rate and fatality rate were updated to reflect the correct data (Figure 5-1).

Table 5-2: Summary of Fatal Crashes and Fatalities (Jan 1995-Jul 2002)

Year	1995	1996	1997	1998	1999	2000	2001	2002 (Jan-July)
Fatal Crashes	3	3	2	3	5	8	12	6
Fatalities	5	3	5	3	6	9	18	9

As can be seen in Table 5-2, the number of fatal crashes increased significantly beginning in the year 2000. For the first seven months of the year 2002, the data indicates a similar trend in an increasing number of fatal crashes experienced in the corridor. All 42 fatal crashes that have occurred since 1995 were also plotted by milepost (Figure 5-3).

Fifteen of the 42 fatal crashes were head-on crashes. These 15 fatal crashes accounted for 24 fatalities (41% of all fatalities). In 2001, three fatal crashes occurred within a 0.2-mile portion of Krome Avenue (MP 14.868 to MP 15.070), accounting for five fatalities. Fatal crash sites were observed and some observations are noted in Table 5-4.

Severe Injury Crashes

The detailed crash reports obtained from the Florida Department of Transportation were coded directly from the Police Reports prepared by officers at the crash site. The severity of crashes is categorized into one of the following six categories:

1 - No Injury
2 - Possible Injury
3 - Non-Incapacitating Injury
4 - Incapacitating (Severe) Injury
5 - Fatality, and
6 - Non-Traffic Fatality

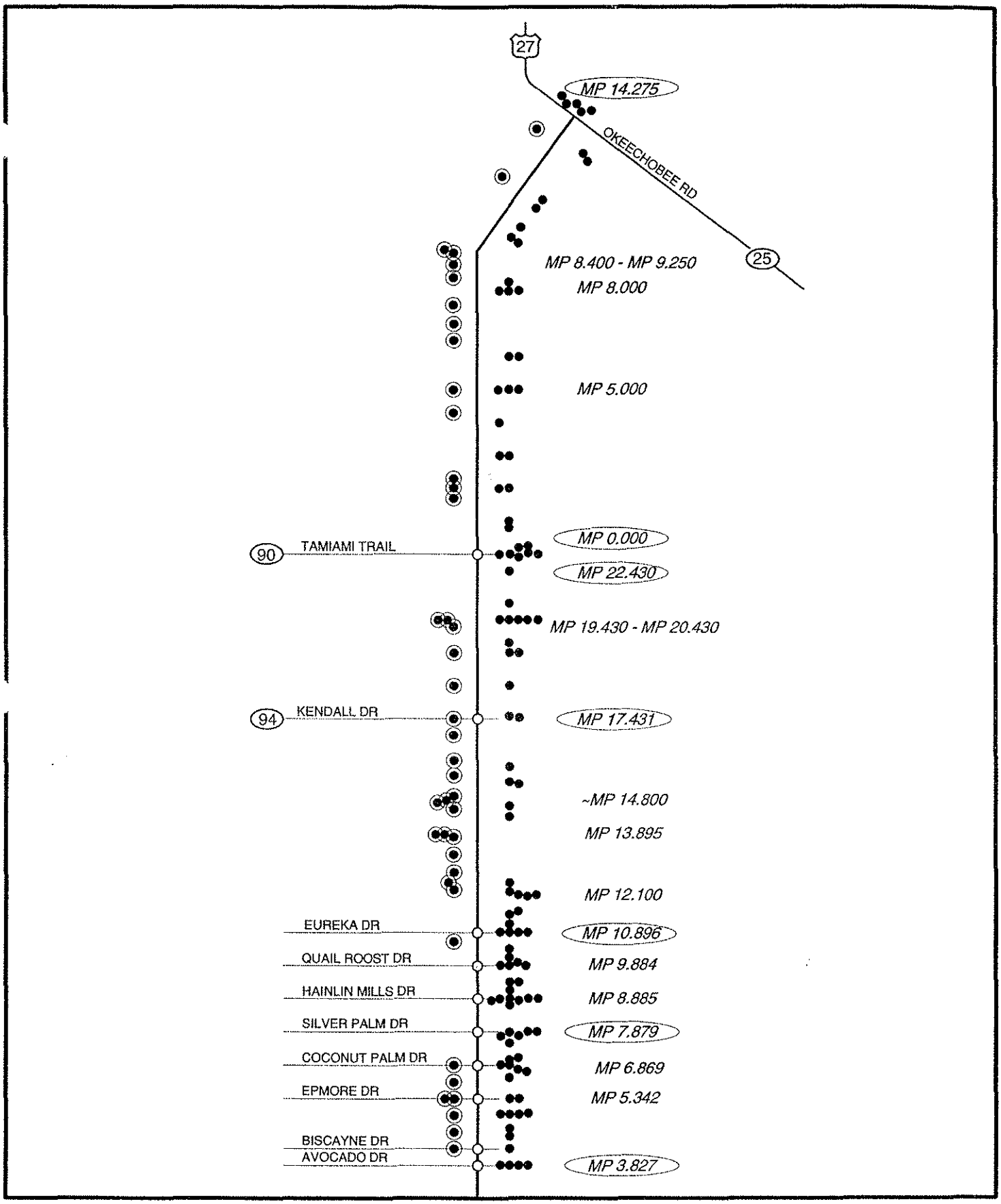
As requested by the Department, crashes in category 4 or 5 were studied in greater detail. Table 5-3 shows a summary of severe injury and fatal crashes by category. Of the 122 crashes summarized for the years 1995 to 1999, 16 of them were fatal crashes. The top five crash types were angle, rear-end, head-on, left turn, and hit tree/shrub.

The percentage of severe injury and fatal crashes of the total crashes was calculated. This percentage helps to identify the most severe crash types. About 44% of all head-on crashes resulted in a severe injury or fatality, followed by hit pole (21%), angle (19%), and overturned vehicle (19%).

All severe injury crashes were plotted by milepost (as shown in Figure 5-3) to identify the high crash locations.

Table 5-3: Summary of Severe Injury and Fatal Crashes

	1995	1996	1997	1998	1999	Total	Percentage
Harmful Event							
Angle	*7*	*6*	*5*	*5*	*7*	*30*	*24.6%*
Rear End	*1*	*4*	*6*	*5*	*7*	*23*	*18.9%*
Head on	*1*	*2*	*4*	*3*	*5*	*15*	*12.3%*
Left Turn	*2*	*3*	*2*	*1*	*3*	*11*	*9.0%*
Tree/Shrub	*2*	*2*	*1*	*2*	*3*	*10*	*8.2%*
Sideswipe	4	0	1	2	0	7	5.7%
Overturn	0	2	3	1	1	7	5.7%
Ran into ditch/culvert	0	1	1	0	3	5	4.1%
Pole	1	0	0	1	2	4	3.3%
Pedestrian	1	0	0	0	2	3	2.5%
Other	2	2	0	1	2	7	5.7%
TOTAL	21	22	23	21	35	122	
Lighting							
Daylight	13	11	17	13	21	75	61.5%
Dark (no street light)	4	8	5	5	9	31	25.4%
Dark (street light)	2	1	1	1	3	8	6.6%
Other	2	2	0	2	2	8	6.6%
TOTAL	21	22	23	21	35	122	
Weather							
Dry	14	12	10	12	18	66	54.1%
Cloudy	4	6	11	9	11	41	33.6%
Rain	1	3	2	0	5	11	9.0%
Other	2	1	0	0	1	4	3.3%
TOTAL	21	22	23	21	35	122	
Road Surface							
Dry	19	18	20	19	27	103	84.4%
Wet	1	4	3	2	7	17	13.9%
Slippery	0	0	0	0	1	1	0.8%
Other	1	0	0	0	0	1	0.8%
TOTAL	21	22	23	21	35	122	
Site Location							
Not at Intersection/RRXing/Bridge	8	10	16	12	23	69	56.6%
At Intersection	12	11	6	8	7	44	36.1%
Driveway Access	1	0	1	1	2	5	4.1%
Influenced by intersection	0	0	0	0	2	2	1.6%
Bridge	0	1	0	0	1	2	1.6%
TOTAL	21	22	23	21	35	122	



LEGEND

- ◉ FATAL CRASH
- ● SEVERE INJURY CRASH
- ○ SIGNALIZED INTERSECTION

FATAL CRASHES (JAN 1995 - JUL 2002)
SEVERE INJURY CRASHES
(JAN 1995 - DEC 1999)

KROME AVENUE MIAMI-DADE COUNTY, FLORIDA OCTOBER 2002	FIGURE 5-3

INJURY CRASHES

Table 5-4: Nearby Conditions at Fatal Crash Locations

Section	Milepost	Location	Near by conditions
87150	4.836	Mid-block	Wide shoulders on both sides
87150	5.848	At SW 264th St	Signalized intersection, exclusive left-turn lane
87150	5.848	At SW 264th St	Signalized intersection, exclusive left-turn lane
87150	6.357	At SW 256th St	Unsignalized intersection, Sunoco service station in SW corner
87150	6.869	At SW 248th St	Amoco gas station SW corner, Texaco NE corner, Construction in NW corner, SE corner vacant
87150	10.622	At SW 188th St	Good sight distance
87150	12.200	Mid-block	Hit pole on eastside, north of Chekika recreation area driveway
87150	12.420	Mid-block	Poles on Westside, shoulder on eastside
87150	12.738	Mid-block	Poles on Westside, shoulder on eastside
87150	13.280	Mid-block	~ at SE 154th St, by GUS Nursery; poles on Westside, shoulder on eastside
87150	13.821	Mid-block	Just south of SW 136th St, poles on Westside, shoulder on eastside
87150	13.895	At SW 136th St	Grass shoulder on Westside, poles on eastside north of intersection only.
87150	13.895	At SW 136th St	Grass shoulder on Westside, poles on eastside north of intersection only.
87150	14.668	At SW 122nd St	Good sight distance
87150	14.868	Mid-block	Guardrail on the eastside, 20ft graveled/grass shoulder with poles on the Westside – just north of D'Martinez nursery.
87150	14.940	Mid-block	
87150	15.070	Mid-block	
87150	15.700	Mid-block	Guardrail on eastside, narrow shoulder on Westside
87150	16.156	At SW 100th St	Good side distance, one lane-all movements
87150	16.931	Mid-block	North of railroad crossing, guardrail on both sides
87150	17.431	At SW 88th St	Guardrail on eastside, shoulder on Westside
87150	18.431	Mid-block	Guardrail on eastside
87150	19.431	Mid-block	Guardrail on Westside for culvert, continuous guardrail on eastside
87150	20.230	Mid-block	Wooded area on the Westside, guardrail on the eastside
87150	20.430	Mid-block	Wooded area on the Westside, guardrail on the eastside
87070	1.700	Mid-block	Speed changes from 50 mph to 55 mph
87070	2.020	Mid-block	20 ft slope shoulders
87070	2.350	Mid-block	South of Curve-right sign, 20 ft slope shoulders, NB no passing
87070	4.300	Mid-block	Near guide sign, crash location may be miscoded.
87070	8.400	Mid-block	No passing zone, 20 ft slope shoulders, near driveway
87070	8.800	Mid-block	Driveway south of curve-right sign
87070	9.150	Mid-block	Sharp curve, unmarked
87070	9.250	Mid-block	Missed curve, ran off road to the right.
87070	11.500	Mid-block	Good sight distance, straight road
87070	12.275	Mid-block	Milton Thomas Park eastside – park closes at 5:30, Parking for fishing Westside; good sight distance

Section 6

Potential Crash Counter Measures

6. Potential Crash Counter Measures

As shown in the previous section, the entire roadway segments that make up the study corridor and several of the intersections experienced a safety ratio greater than 1.0. Based on the FDOT methodology, a safety ratio greater than 1.0 indicates an abnormal/high crash occurrence. The procedure used to identify potential crash countermeasures is summarized in Figure 6-1. The purpose of the procedure was to:

- Identify system issues: These issues impact the entire corridor and will result in general recommendations. System wide issues include availability of passing, visibility (pavement markings and lighting), the roadside environment, and access management.
- Identify intersection issues: At intersections with a safety ratio greater than 1.0 or where a pattern of crashes was observed, the area was checked for contributing causes.

As shown in Figure 6-1, the general historical crash data from 1995 to 1999 was sorted and classified as an intersection, roadway, roadside, or other crash type. Once classified, potential countermeasures to be considered were identified. A field review was then conducted at the candidate locations to check the applicability of the countermeasure and final recommendations were made. The detailed crash data obtained on fatal crashes from 1995 to June 2002 was reviewed to determine the contributing causes and possible countermeasures. A field check was conducted on all fatal crashes to understand the physical environment in which the crash occurred.

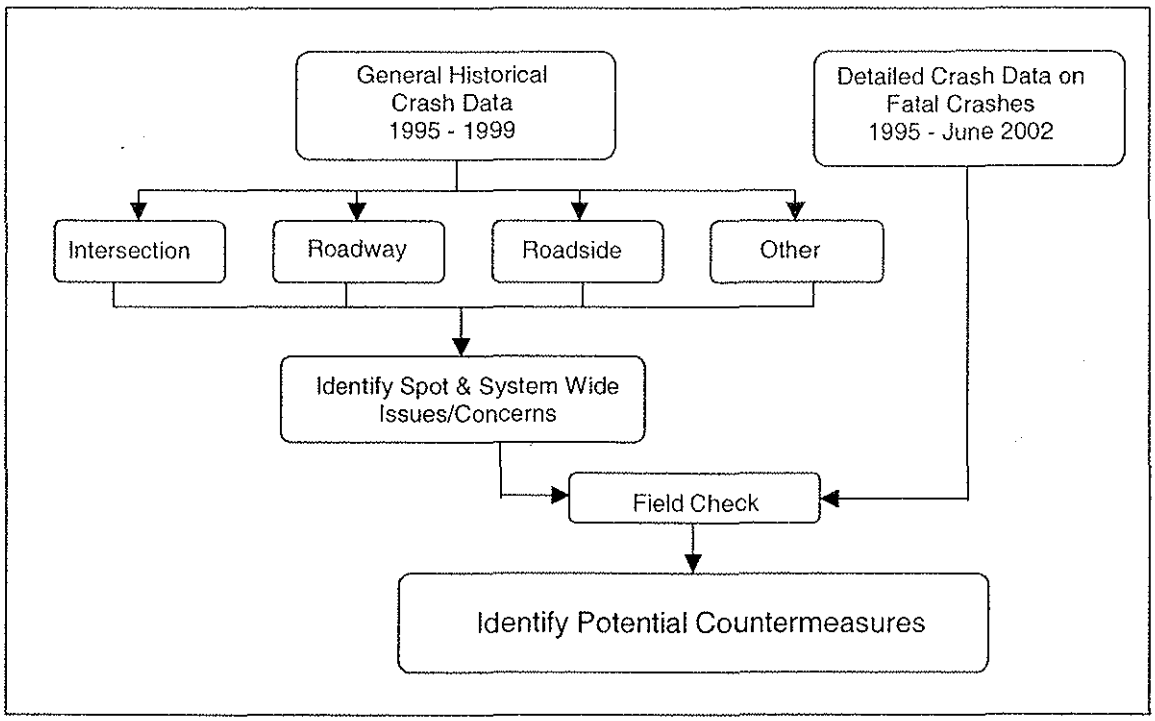


Figure 6-1: Countermeasure Identification Methodology

SYSTEM ISSUES

Several issues associated with the entire Krome Avenue study corridor were identified during field reviews and the crash analysis. These system issues include the availability of passing, centerline

crossovers, roadside environment, driver guidance and visibility, access management, and bicycle and pedestrian considerations.

Availability of Passing

As shown in the rural two-lane highway analysis and experienced when traveling on the facility, the two-lane cross section in combination with the volume and speed of vehicles on Krome Avenue limits passing opportunities. When the percent time-spent-following (the average percentage of travel time that vehicles must travel behind slower vehicles due to the inability to pass) increases, the comfort level of the following drivers decreases. To perform a passing maneuver, drivers must judge the adequacy of gaps in opposing traffic and use the opposing lane to complete the passing maneuver.

The number of head-on crashes (34 head-on crashes from 1995 to 1999) on the facility and observations made in the field indicate that many drivers, especially after having to follow a vehicle traveling at a speed less than they desire (it is noted that the 'slower moving vehicle' may be traveling at the speed limit), are willing to accept short gaps in the opposing traffic stream to attempt a passing maneuver. Such passing maneuvers may have the following negative impacts:

- Drivers in the opposing lane swerve off of the road to avoid the oncoming vehicle. As Krome Avenue generally has a narrow clear zone and unpaved shoulders, crashes may occur.
- Drivers in the opposing lane suddenly apply their brakes in an attempt to avoid the oncoming vehicle. The sudden application of the brakes may lead to rear-end crashes.
- The driver attempting the passing maneuver realizes the gap is too short and attempts to abort the maneuver. This may result in a sideswipe of the vehicle being passed or a rear-end crash as the passing vehicle attempts to renter the travel lane.
- A head-on collision occurs.

Because passing maneuvers involve high vehicle speeds, crashes have a higher chance of resulting in severe injuries or fatalities. On Krome Avenue from 1995 to July 2002, nine fatal crashes have occurred due to head-on collisions. As traffic volumes increase on Krome Avenue, the percent time-spent-following will increase and the availability of gaps for passing maneuvers will decrease.

The following countermeasures should be considered to address issues associated with passing maneuvers:

- Four-Lane Section: A four-lane section eliminates the need for drivers to judge the adequacy of gaps in opposing traffic and use the opposing lane to perform the passing maneuver. The length and placement of a four-lane section can vary (for example, a four-lane section can be located between intersections or on a specific stretch of roadway). It is noted that in areas where access to roadside properties exists or is planned, a four-lane section should be median separated and that left-turn lanes need to be provided to minimize crossover crashes and rear-end crashes. A properly designed four-lane section can be expected to nearly eliminate head-on crashes (a crash type that often results in severe injuries or fatalities) and reduce the total number of roadway crashes associated with passing maneuvers. Vehicle speeds on four-lane sections can also be expected to be higher than on a two-lane section.

- Passing Lanes: Passing lanes can improve the operation of a two-lane highway by reducing delays caused by inadequate passing opportunities over significant lengths of roadway. AASHTO recommends a minimum length of 1,000 feet, excluding tapers, for passing lanes to assure that delayed vehicles have an opportunity to complete at least one pass in the added lane. The signing, marking, and visibility of added passing lanes is important in realizing the benefit of such lanes and minimizing issues associated with the diverge and merge points of the lanes. Access to roadside property should be restricted in areas with passing lanes. Passing lanes can be expected to reduce head-on crashes, but not to the extent of a four-lane section.
- Median Separated Two-Lane Section: A median separated two-lane section eliminates the possibility of passing maneuvers (and associated crashes) by restricting access to the opposing lane of traffic. This configuration limits the speed of vehicles on the roadway to that of the slowest moving vehicle leading the platoon (essentially, percent time-spent-following is 100%). A median separated two-lane section will reduce head-on crashes, but will not improve operation of the roadway. Over a long section of a median separated two-lane facility, the lack of passing may result in undesirable driver behavior such as tailgating, aggressive gestures, and passing on the right if a paved shoulder is present.

When considering potential countermeasures, it is important to note that one treatment does not have to be applied to the entire corridor. An alternatives analysis that considers issues such as available right-of-way, environmental impacts, safety benefits, operational benefits, and community concerns should be completed in order to decide what the preferred treatments should be.

Centerline Crossovers

Fifteen of the 42 fatal crashes were reported as crossover crashes where a vehicle traveling in one direction crossed over the roadway centerline and struck a vehicle traveling in the opposite direction. Crossover crashes differ from head-on crashes in that the point of impact is usually at an angle. In reviewing the contributing causes of the crossover crashes, 20% occurred as a result of improper passing, 53% were not stated, and 27% was a combination of other causes. Because centerline crossover crashes usually involve high vehicle speeds between vehicles traveling in opposite directions, crashes have a higher chance of resulting in severe injuries or fatalities.

To reduce the chance of centerline crossover crash occurrence (a crash type that often results in severe injuries or fatalities), the roadway should be separated by a physical median. The FDOT and AASHTO provide guidance on the specifications for different median treatments.

The following countermeasures should be considered to address issues associated with centerline crossovers:

- Four-Lane Section with Raised or Restrictive Median: A four-lane section with a raised or restrictive median significantly reduces the chance of centerline crossover crash occurrence while allowing passing maneuvers to occur. This median design will limit the amount of right-of-way needed as opposed to the use of a grass median.
- Median Separated Two-Lane Section: A median separated two-lane section reduces the chance of centerline crossover crash occurrence and also eliminates the chance of passing maneuvers. As discussed in the section about passing opportunities, over a long section of a

median separated two-lane facility, the lack of passing may result in undesirable actions by drivers.

- Raised Pavement Markings: Crossover crashes may occur due to a lack of driver guidance or issues associated with visibility. The section describing driver guidance and visibility provides details on available treatments.

Roadside Environment

Roadside clear zones (areas from the edge of travel way that are free of obstructions) provide a more "forgiving" environment for vehicles that stray from the roadway. The condition of the roadside has the most impact on run-off the road crashes. The FDOT provides the following guidance, in order of priority, regarding objects within the clear zone (PPM, pg. 4-1):

- Eliminate the hazard (remove the hazard, relocate the hazard outside the clear zone, or make the hazard traversable or crashworthy).
- Shield the hazard with a longitudinal barrier or crash cushion. This treatment should only be taken if the barrier or crash cushion presents a lesser hazard.
- Leave the hazard unshielded. This treatment should be taken only if a barrier or crash cushion is more hazardous than the hazard, if the likelihood of striking the hazard is very small, or if the expense of treatment outweighs the benefits in terms of accident reduction.

For this analysis, the type and condition of the shoulder was included as a roadside issue. Roadway shoulders are typically designed to accommodate occasional use by vehicles. On two-lane roadways, trailing vehicles commonly use shoulders to "go-around" turning vehicles so that a complete stop is not necessary.

It is noted that of the 966 crashes that were reviewed from 1995 to 1999, 183 (approximately 19%) were classified as roadside crashes. It is also noted that of the 42 fatal crashes reviewed from 1995 to July 2002, two were classified as veered off the road crashes.

The following countermeasures should be considered to improve the condition of the roadside environment:

- Provision of the widest feasible clear zone: In the *Krome Avenue Action Plan*, the desirable clear zone was identified as 18 feet from Avocado Drive to Kendall Drive and as 30 feet from Kendall Drive to Okeechobee Road. The greater the amount of clear zone recovery distance provided, the greater amount of reduction in roadside crashes that can be expected. Issues associated with specific objects in the clear zone will be identified in the section that details spot locations.
- Widen shoulders to the extent feasible to meet FDOT standards. In the *Krome Avenue Action Plan*, the recommendations were to widen the paved shoulders to 10 feet approaching intersections and railroads from Avocado Drive to Kendall Drive and to provide 5-foot paved and 5-foot turfed shoulders from Kendall Drive to Okeechobee Road. A lower cost option for this alternative is to fix the existing shoulders (repave or regrade) on Krome Avenue.
- Provide a Smooth Transition to the Clear Zone. On many sections of Krome Avenue, an edgeline drop-off of up to four inches exists between the paved portion of the roadway and the unpaved (either gravel or grass) portion of the clear zone. The existence of edgeline

drop-offs in the vicinity of intersections provides a hazard to drivers trying to "go around" turning vehicles and also to vehicles who may inadvertently leave the travel way. A minimum two-foot paved shoulder would help reduce pavement edge discontinuities due to traffic.

Driver Guidance and Visibility

In reviewing the crash data for fatal crashes, it was found that 35% of fatal crashes occurred during daylight hours and 65% occurred during non-daylight hours (dusk, night, dawn). For all crashes that occurred from 1995 through 1999, 68% occurred during daylight hours and 32% occurred during non-daylight hours.

The following countermeasures should be considered to address issues associated with driver guidance and visibility:

- A roadway lighting system will result in the greatest improvement in nighttime visibility. Roadway lighting appears to have a greater benefit at intersections as compared to on long tangent sections. If pedestrian or bicycle use exists or is planned on the facility, roadway lighting will significantly improve the safety of the facility.
- Raised pavement markers (RPMs) provide benefits in terms of increased delineation of the driving path of the roadway, increased ability to "track" the roadway, increased reflectivity under wet-weather conditions, and increased tactile and auditory warning to drivers when crossing the markers (6). Data from the section of US 1 from Key Largo in the Florida Keys to Florida City (commonly referred to as 'the 18-mile stretch') should be reviewed to determine if a crash reduction has been realized since the installation of raised pavement markers on that two-lane facility. As is the case with US 1 between Key Largo and Florida City, raised pavement markers should be installed on both the centerline and edge lines of the Krome Avenue. Raised pavement markers can also be used on the approaches of the cross streets intersecting with Krome Avenue to alert drivers of an upcoming situation.
- Use of reflective tape on signposts will alert drivers of important signs during non-daylight hours. Signs for consideration include stop signs and signs informing drivers of upcoming intersections.
- Improved pavement markings on Krome Avenue will provide positive guidance to drivers and likely produce a reduction in the number of accidents at intersections and access points (driveways). Although pavement markings exist on Krome Avenue, many have faded and are difficult to see. When implemented with RPMs and shoulder improvements, edgeline pavement markings can provide an inexpensive treatment for runoff the road and intersection related crashes. As with RPMs above, improved pavement markings on the approaches of the cross streets intersecting with Krome Avenue can alert drivers of the upcoming intersection.

Access Management

A review of the various access regulations and guidelines in the area was completed as part of the *Krome Avenue Action Plan* (7). With regards to access management, the following recommendation was made for the Krome Avenue corridor from Avocado Drive to the Tamiami Trail (7):

- Access management implementation to limit the number of driveways, farm access, cross-street connections and improve intersections.

As discussed in the previous sections about passing opportunities and centerline crossovers, the use of medians in the corridor has been identified as a potential treatment. Other features of an access management plan such as driveway controls and turning restrictions can be expected to improve traffic operations, minimize adverse environmental impacts, and increase roadway safety (8).

Krome Avenue is also part of the Florida Intrastate Highway System (FIHS). To meet the criteria of a FIHS facility, Krome Avenue should be brought up to controlled access facility standards. As stated in the FDOT reference *Development of the Florida Intrastate Highway System* (Topic No.: 525-030-250-d), "The access management standards for controlled access segments of the FIHS shall be those contained in Access Class 2 or 3 as defined in Department Rule Chapter 14-97 F.A.C. and the Department's Plans Preparation Manual". The *Development of the Florida Intrastate Highway System* also states, "Other access management standards may be assigned to a segment of the FIHS through a corridor access management plan developed as part of the Action Plan for the segment. The plan should define the highest standards attainable where Class 2 or 3 would not be feasible." Table 6-1 summarizes the controlled access facility standards.

Table 6-1: Controlled Access Facility Standards for Class 2 and Class 3

Access Class	Facility Design Features (Median Treatment and Access Roads)	Minimum Connection Spacing (feet)	Minimum Median Opening Spacing (feet) Directional	Minimum Median Opening Spacing (feet) Full	Minimum Signal Spacing (mile)
2	Restrictive with Service Roads	1320/660	1320	0.5	0.5
3	Restrictive	660/440	1320	0.5	0.5

(Greater than 45 mph/Less than or = 45 mph)

Bicycle and Pedestrian Environment

The existing condition of the Krome Avenue corridor is not conducive to use by bicyclists and pedestrians. For most of the corridor, the shoulder is either not paved, in poor condition, or too narrow for a bicycle to safely use. Most intersections do not have pedestrian crossing features (crosswalks, pedestrian signals, pedestrian push-buttons).

The potential inclusion of bicycle and pedestrian trails in the Krome Avenue corridor needs to be considered as alternatives are developed and evaluated. As identified in the *Krome Avenue Action Plan*, coordination with the South Dade Greenway Network and the North Dade Greenway Network is necessary throughout the alternatives study process.

System Countermeasures Recommendations

The following is a summary of the potential countermeasures for system issues. As the need for these treatments occurs throughout the length of Krome Avenue (to varying degrees), the treatments should be considered for application on the entire corridor.

Short-Term

- Raised pavement markers (RPMs), improved pavement markings, and use of reflective tape on signposts. This treatment will have the lowest cost and can likely be implemented in the shortest period of time.
- Provide a smooth transition to the clear zone. This consists of leveling edge drop-offs between the paved portion of the roadway and the unpaved (either gravel or grass) portion of the clear zone. Figure 6-2, Figure 6-3, and Figure 6-4 show examples of edge drop-offs on Krome Avenue. FDOT Standard Index 105 (shown in Figure 6-5) provides guidance on treatments used to provide a smooth transition to the clear zone. These treatments can be part of a roadway maintenance program.
- Improve the condition of existing shoulders. As recommended in the *Krome Avenue Action Plan*, widen the paved shoulders to 10 feet approaching intersections and railroads from Avocado Drive to Kendall Drive and provide 5-foot paved and 5-foot turfed shoulders from Kendall Drive to Okeechobee Road. A lower cost option for this alternative is to fix the existing shoulders (repave or regrade) on Krome Avenue.

Long-Term

- Evaluate the feasibility of changing the existing two-lane undivided Krome Avenue corridor to include:
  - Four-lane median separated sections;
  - Passing lanes; and/or
  - A median Separated Two-Lane Section.
- Provision of the widest feasible clear zone and improved shoulder design.
- Upgrade Krome Avenue to controlled access facility standards (previously defined).
- Provision of a roadway lighting system in the corridor.

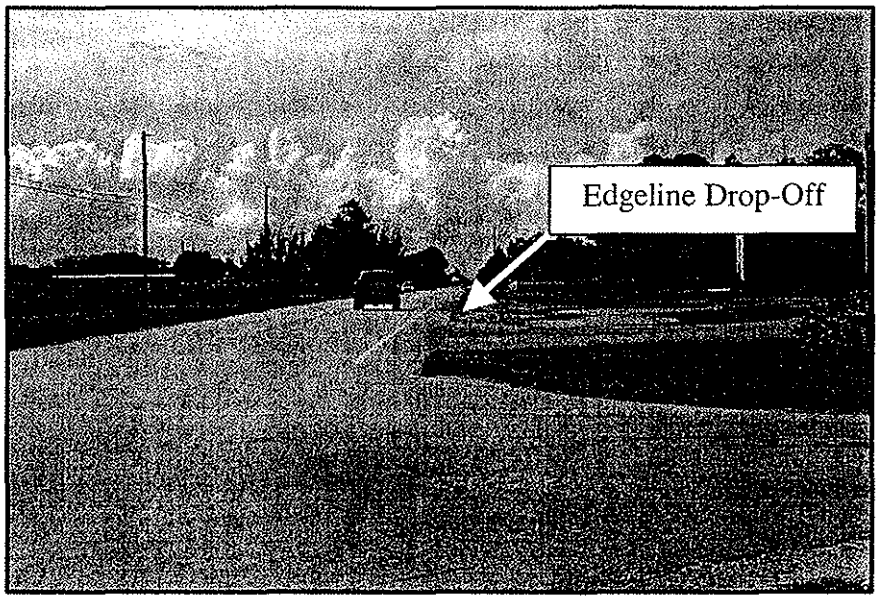


Figure 6-2: Edgeline Drop-Off Example: Krome Avenue South of Epmore Intersection

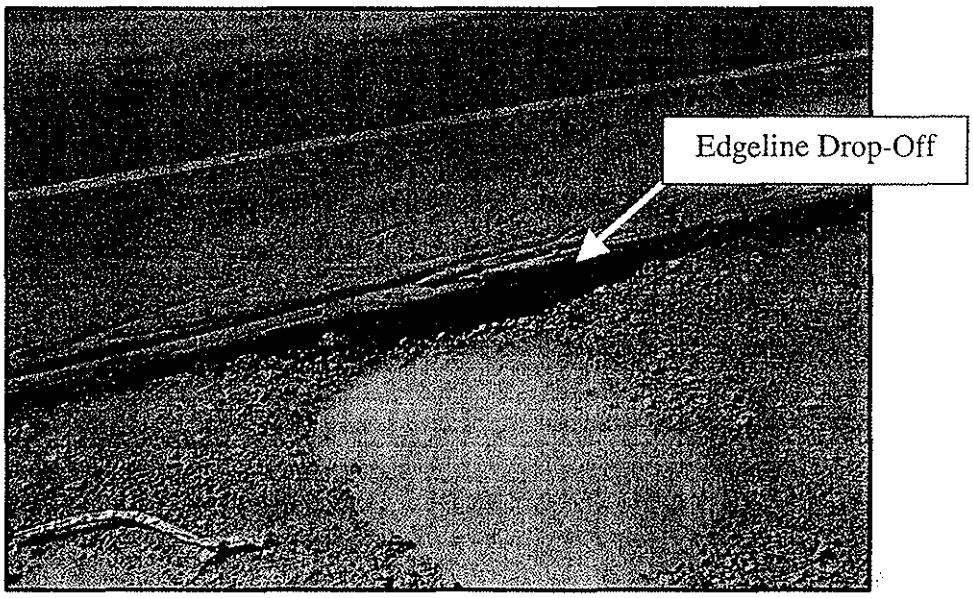


Figure 6-3: Edgeline Drop-Off Example: Krome Avenue in the vicinity of Howard Road

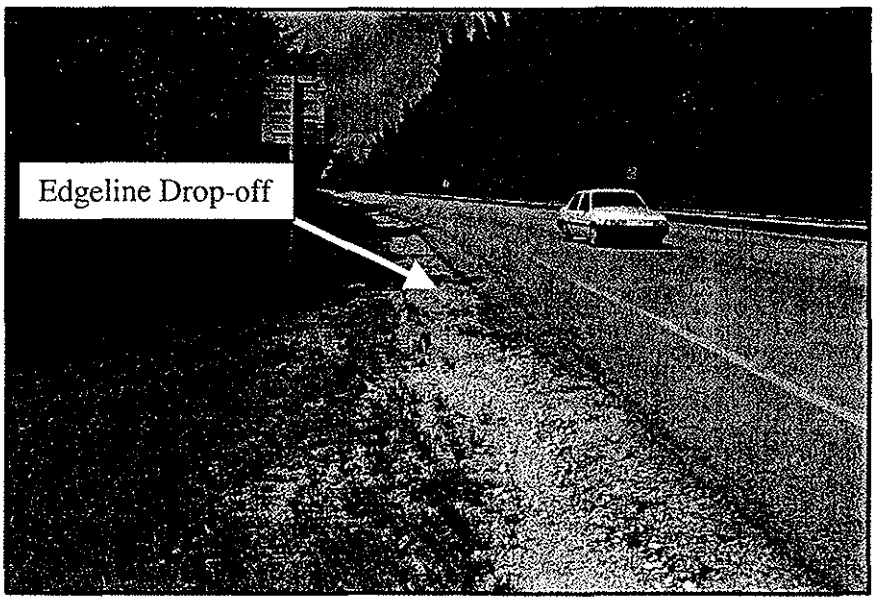


Figure 6-4: Edgeline Drop-Off Example: Krome Avenue North of Kendall Drive Intersection

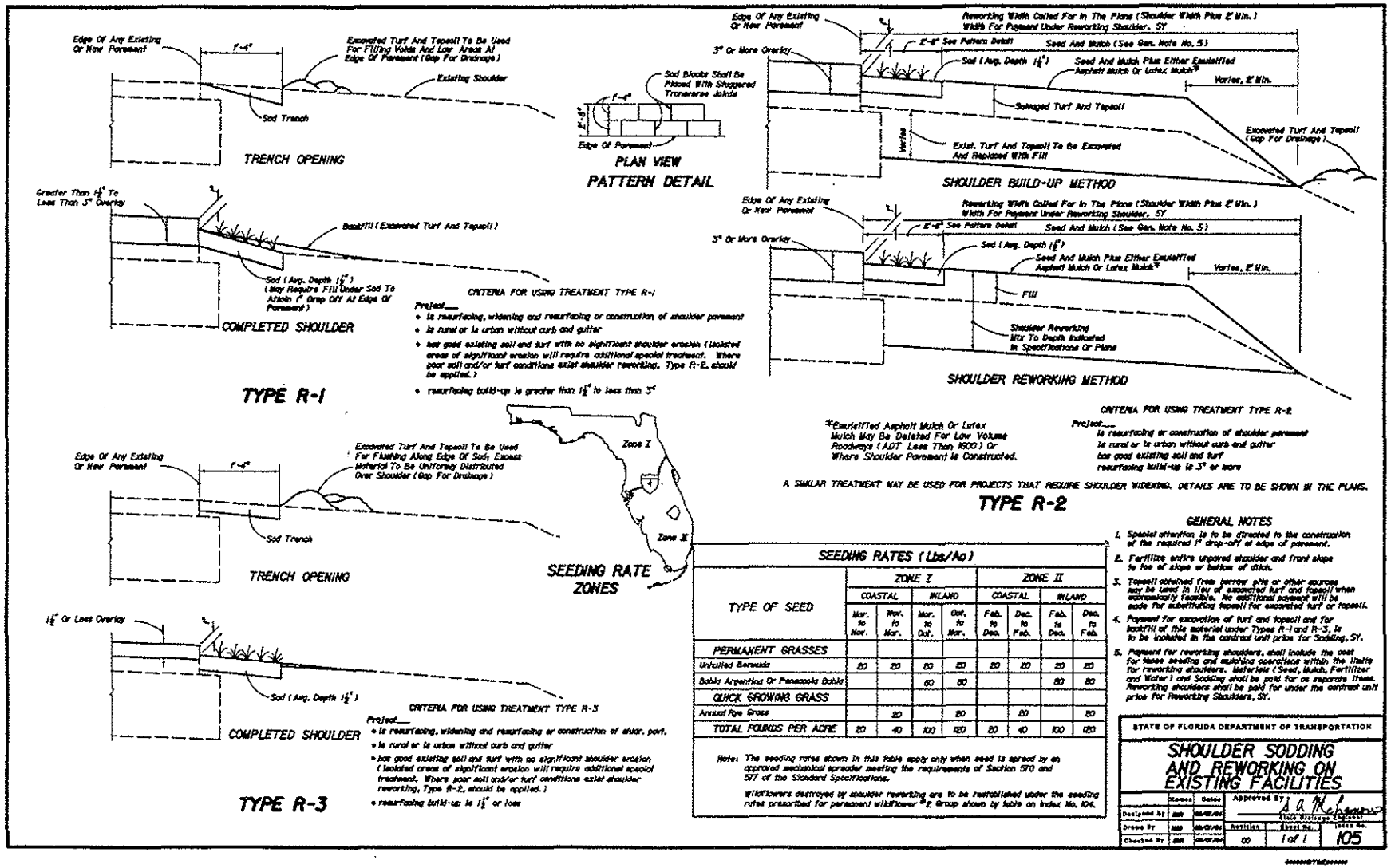


Figure 6-5: FDOT S.I. 105: Shoulder Sodding and Reworking on Existing Facilities

INTERSECTION ISSUES

A field review was conducted during daylight hours to assess traffic operations at 14 intersections on Krome Avenue corridor. The field study included a physical inspection of each intersection. The physical examination of the intersection consisted of an inventory of the following:

- Location
- Intersection geometry
- Traffic control devices and signal visibility
- Signage
- Sight distance
- Pavement Conditions and Markings
- Shoulder and clear zone characteristics
- Drainage
- Roadway lighting and utility services
- Pedestrian facilities
- General observations

The review did not include an investigation of the Grossman Farm Road (SW 192nd St) intersection, as there were no serious or fatal crash incidents documented for that immediate area. The review did include the intersection at Plummer Drive (SW 256th St).

Avocado Drive (SW 296TH St) and Krome Avenue (SR 997) MP 3.827

Location

The intersection of Avocado Drive and Krome Avenue is situated on the edge of a residential area. The quadrants to the north of the intersection consist either of vacant farm fields or foliage of varying densities. Residences are located on the southeast and southwest quadrants of the intersection and both have driveways leading onto Avocado Drive. Figure 6-6 shows the south approach of the intersection.

Intersection Geometry

Each of the four approaches to the Avocado Drive and Krome Avenue intersection consists of only one lane in each direction. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Avocado Drive and Krome Avenue is a signalized intersection at the very southern end of the study corridor. Signal visibility appears adequate. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

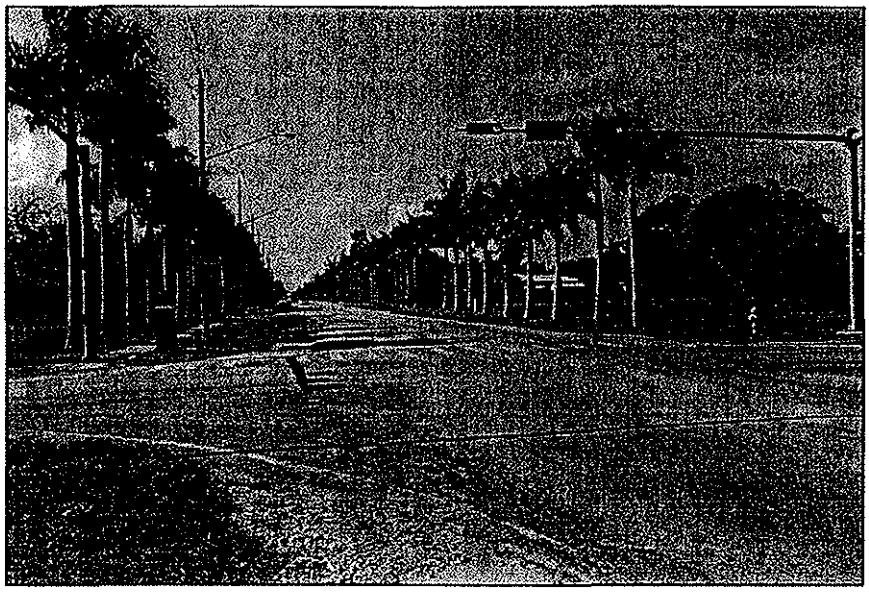


Figure 6-6: South Approach, Avocado Drive and Krome Avenue

Signage

Street signage includes the presence of advanced warning signs prior to entering the intersection on the north, south and west approaches. The east approach has no advanced warning signs. Other street signage includes posted speed signs, state road signs and directional signage to specific landmarks.

Sight Distance

Sight distance for turning movements is limited for most of the approaches to the intersection with the exception of the northeast quadrant containing the open field. Obstructions to sight distance include the presence of trees, moderate foliage, lighting and utility structures.

Pavement Condition and Markings

Evidence of moderate pavement cracking and fracture was noted on the roadway. Large potholes were present on the east approach and a majority of the turning radii were also noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the east side of the south approach is approximately three feet in width and is uneven and irregular in appearance. The clear zone comprises of approximately fifteen feet of grassed area leading up to a line of lighting structures. The southbound side of the south approach is similar with approximately ten feet of grassed area leading up to a row of trees. The east and west approaches have no notable roadway shoulder but have approximately ten feet of grassed area leading to lighting structures or foliage boundaries.

Drainage

The Avocado Drive and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii.

Roadway Lighting and Utility Services

Roadway lighting is present on the northbound side of Krome Ave and on the eastbound side of Avocado Drive.

Pedestrian Facilities

There is the presence of pedestrian footpaths on both sides of the south approach and also on both the south side of the east and west approaches. A pedestrian crosswalk is present on the south approach in the form of a painted zebra crossing.

General Observations

The intersection of Avocado Drive and Krome Avenue is noted as having had several serious crash incidents over the study period primarily due to rear ending, left turn and angle collisions.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

The FDOT has programmed turn lane additions, improved return radii, and improved lighting, signing, and pavement markings at this intersection. Specifically, left-turn lanes will be added to the north and south approaches of Krome Avenue. Signal timing improvements were recommended at this intersection based on the results of the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Cut back foliage boundary
- Install back plates on traffic signals to improve visibility

Long Term Options

- Increase lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Provide improved drainage at intersections

Biscayne Drive (SW 288TH St) and Krome Avenue (SR 997) MP 4.333

Location

The intersection of Biscayne Drive and Krome Avenue is located within a rural developed area. There are no major developments at this intersection and all four quadrants of the intersection are comprised of fields. Figure 6-7 shows the south approach to the intersection.

Intersection Geometry

Krome Avenue has a left turn lane and a shared through and right turn lane for the north and south approaches to the intersection. Biscayne Drive consists of one lane in each direction on the

eastbound and westbound approaches. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Biscayne Drive and Krome Avenue is a signalized intersection. Protected-permitted left turn phasing is used on Krome Avenue. Signal visibility appears adequate. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

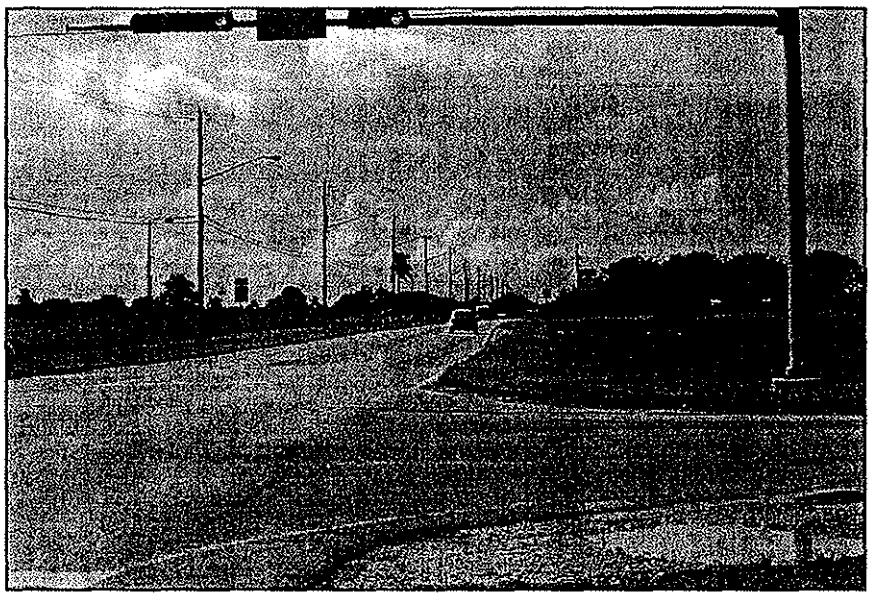


Figure 6-7: South Approach, Biscayne Drive and Krome Avenue

Signage

Street signage includes the presence of advanced warning signs approximately ninety feet prior to entering the intersection on the north and south approaches. The east and west approaches have no advanced warning signs. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for turning movements is adequate on all of the approaches to the intersection due to the open fields present in each quadrant.

Pavement Conditions and Markings

Evidence of pavement cracking and fracture was noted on the roadway. A majority of the turning radii were also noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent. Several skid marks were also noted.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and have evidence of skid marks and wear. The clear zones comprise of several feet of grassed area leading up to either a line of lighting structures or a developed field. The east and west approaches have no notable roadway shoulder and have clear zones similar to the north and south approaches.

Drainage

The Biscayne Drive and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii.

Roadway Lighting and Utility Services

Roadway lighting is present on the northbound side of Krome Ave and on the eastbound side of Biscayne Drive.

Pedestrian Facilities

There is the presence of pedestrian footpaths on the south side of the east approach.

General Observations

This intersection was noted as having one fatal incident over the designated study period, and is a prevalent location for northbound and southbound rear end crashes due to careless driving, angle crashes from disregarding signals and improper left turns.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

The addition of a westbound right-turn lane was recommended at this intersection based on the results of the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility

Long Term Options

- Increase lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Improve intersection warning and visibility through advanced warning signs and flashing lights where necessary
- Provide improved drainage at intersections

Epmore Drive (SW 272nd St) and Krome Avenue (SR 997) MP 5.342

Location

The intersection of Epmore Drive and Krome Avenue is located within a developed area. The quadrants to the north of the intersection consist either of farm fields or residences. A gas station is located on the southwest quadrant of the intersection and has driveways leading onto both Epmore Drive and Krome Avenue. Figure 6-8 shows the west approach of the intersection.

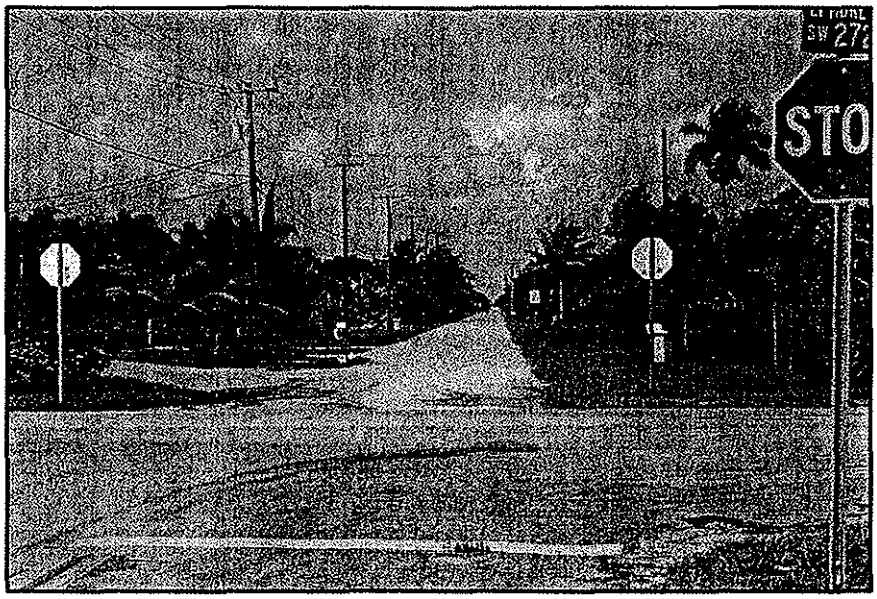


Figure 6-8: West Approach, Epmore Drive and Krome Avenue

Intersection Geometry

Each of the four approaches to the Epmore Drive and Krome Avenue intersection consists of one lane in each direction. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices

Epmore Drive and Krome Avenue is an unsignalized intersection. Two stop signs are present on both the east and west approaches of the intersection. Signage visibility appears adequate in daylight conditions.

Signage

Street signage includes the presence of advanced warning signs prior to entering the intersection on the east and west approaches. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for turning movements is poor for most of the approaches to the intersection due to the presence of trees, moderate foliage, lighting and utility structures.

Pavement Conditions and Markings

Evidence of moderate pavement cracking and fracture was noted on the roadway. Potholes were present at the center of the intersection and a majority of the turning radii were also noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent. Several skid marks were also noted.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and have evidence of skid marks and wear. The clear zones comprise of several feet of grassed area leading up to either a line of lighting structures or development. An abrupt edge drop off from the

pavement shoulder to the grass area was present on the west side of the south approach. The east and west approaches have no paved roadway shoulder but have approximately five to six feet of grassed area leading to lighting structures or foliage boundaries.

Drainage

The Epmore Drive and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii and worn shoulders of approaches.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches.

Pedestrian Facilities

There is no presence of pedestrian facilities on any of the four approaches.

General Observations

This intersection was noted as having one fatal crash and several serious accidents due to failure to yield to stop signs. Driveway locations did not appear to cause any erratic driving behavior.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

The FDOT has programmed turn lane additions, improved return radii, and improved lighting, signing, and pavement markings at this intersection. Specifically, left-turn lanes will be added to the north and south approaches of Krome Avenue. Signalization was recommended at this intersection based on the results of the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Cut back foliage boundary

Long Term Options

- Provide lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Improve intersection warning and visibility through advanced warning signs and flashing lights where necessary
- Provide improved drainage at intersections

Bauer Drive (SW 264TH St) and Krome Avenue (SR 997) MP 5.848

Location

The intersection of Bauer Drive and Krome Avenue is located within a rural developed area. The quadrants to the north of the intersection consist either of nursery fields or high-density foliage areas. A gas station is located on the southwest quadrant of the intersection and has driveways leading onto both Bauer Drive and Krome Avenue. The quadrant to the southeast also comprises of high-density foliage. Figure 6-9 shows the south approach of the intersection

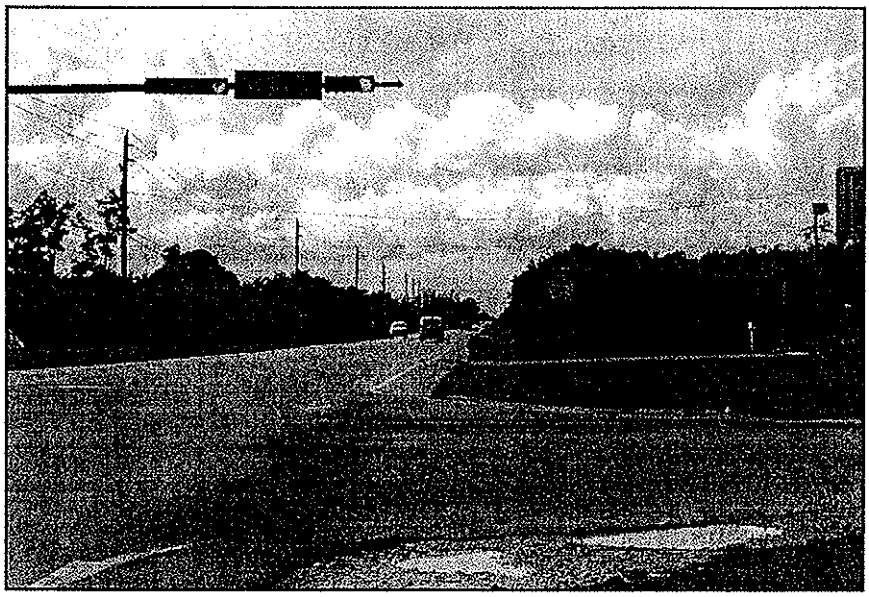


Figure 6-9: South Approach, Bauer Drive and Krome Avenue

Intersection Geometry

Krome Avenue has a left turn lane and a shared through and right turn lane for the north and south approaches to the intersection. Bauer Drive consists of one lane in each direction on the eastbound and westbound approaches. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Bauer Drive and Krome Avenue is a signalized intersection. Protected-permitted left turn phasing is used on Krome Avenue. Signal visibility appears adequate. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

Signage

Street signage includes the presence of advanced warning signs approximately ninety feet prior to entering the intersection on the north and south approaches. The east and west approaches have no advanced warning signals. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for turning movements at the intersection is poor for all of the approaches to the intersection due to the presence of high-density foliage, trees and utility structures.

Pavement Conditions and Markings

Large evidence of pavement cracking and fracture was noted on the roadway. A majority of the turning radii were also noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and show evidence of skid marks and wear. The clear zones comprise of several feet of grassed area leading up to either a line of utility structures, fences or foliage. The east and west approaches have small and uneven roadway shoulders and have limited clear zones leading to dense foliage.

Drainage

The Bauer Drive and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches. Utility lines are present running northbound on Krome Avenue.

Pedestrian Facilities

There is no presence of pedestrian facilities on any of the four approaches.

General Observations

This intersection has a history of having had two fatal incidents, some serious crashes and is a prevalent location for northbound and southbound rear end crashes from careless driving, angle crashes from disregarding signals and improper left turns.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

No improvements are planned at this intersection and no improvements were recommended based on the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility
- Cut back foliage boundary

Long Term Options

- Provide lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Provide improved drainage at intersections

Plummer Drive (SW 256TH St) and Krome Avenue (SR 997) MP 6.357

Location

The intersection of Plummer Drive and Krome Avenue is located within a developed area. A local business is situated in the northwest quadrant of the intersection and the remaining quadrants consist either of either plant nurseries or moderate density foliage areas. Figure 6-10 shows the north approach of the intersection.

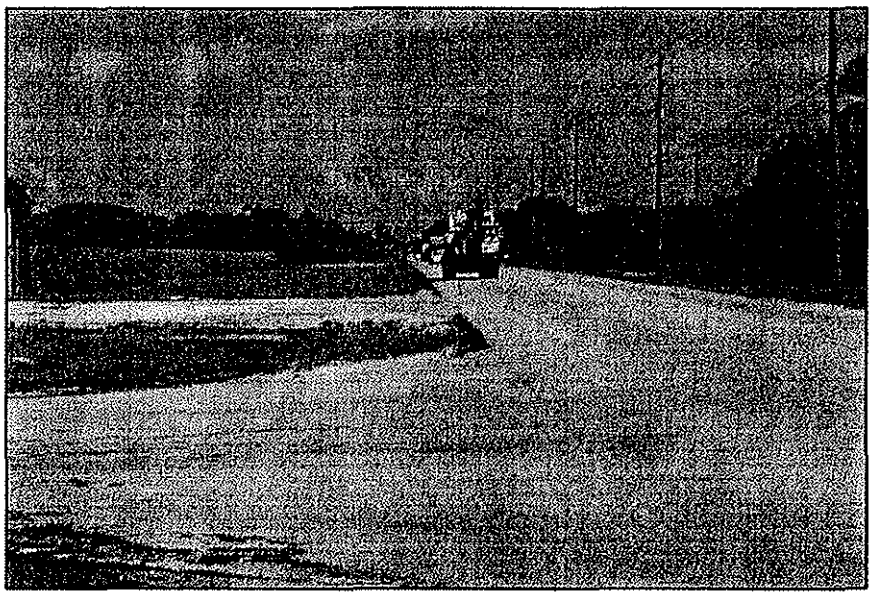


Figure 6-10: North Approach, Plummer Drive and Krome Avenue

Intersection Geometry

Each of the four approaches to the Plummer Drive and Krome Avenue intersection consists of one lane in each direction. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Plummer Drive and Krome Avenue is an unsignalized intersection. A stop sign is present on both the east and west approaches of the intersection.

Signage

Street signage includes the presence of advanced warning signs prior to entering the intersection on the east and west approaches.

Sight Distance

Sight distance for turning movements is poor for most of the approaches to the intersection due to the presence of trees, moderate foliage and utility structures.

Pavement Conditions and Markings

Evidence of pavement cracking and fracture was noted on the roadway. Westbound turning radii were also noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and have evidence of skid marks and wear. The clear zones comprise of several feet of grassed area leading up to either a line of utility structures or development. The east and west approaches have no notable roadway shoulder and have a few feet of grassed area leading to utility structures or foliage/tree boundaries.

Drainage

The Plummer Drive and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii and worn areas within the intersection.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches.

Pedestrian Facilities

There is no presence of pedestrian facilities on any of the four approaches.

General Observations

This intersection was noted as having one fatal incident and several serious accidents due to rear-ending in the north and southbound directions.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

No improvements are planned at this intersection and this intersection was not included in the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Cut back foliage boundary

Long Term Options

- Provide lighting at the intersection

- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Improve intersection warning and visibility through advanced warning signs and flashing lights above stop signs where necessary
- Provide improved drainage at intersections

Coconut Palm Drive (SW 248TH St) and Krome Avenue (SR 997) MP 6.859

Location

The intersection of Coconut Palm Drive and Krome Avenue is located within a developed area. Three of the four quadrants have gas stations located on them with each gas station having driveways leading onto both Coconut Palm Drive and Krome Avenue. The quadrant to the southeast also comprises of vacant field. Figure 6-11 shows the west approach to the intersection.

Figure 6-11: West Approach, Coconut Palm Drive and Krome Avenue

Intersection Geometry

Krome Avenue has a left turn lane and a shared through and right turn lane for the north and south approaches to the intersection. Coconut Palm Drive consists of one lane in each direction on the eastbound and westbound approaches. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Coconut Palm Drive and Krome Avenue is a signalized intersection. Protected-permitted left turn phasing is used on Krome Avenue. Signal visibility appears adequate. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

Signage

Street signage includes the presence of advanced warning signs entering the intersection on all four approaches. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for turning movements is poor for all of the approaches to the intersection due to the presence of high-density foliage, trees and utility structures.

Pavement Conditions and Markings

Poor pavement structure was noted on the roadway. A majority of the turning radii were also noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and are in poor condition. The clear zones comprise of several feet of grassed area leading up to either a line of utility structures, fences or foliage. The east and west approaches have small and uneven roadway shoulders and have limited clear zones leading to tree or utility lines.

Drainage

The Biscayne Drive and Krome Ave intersection shows signs of extremely poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii and approaches.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches.

Pedestrian Facilities

There is no presence of pedestrian facilities on any of the four approaches.

General Observations

This intersection was noted as having a safety ratio greater than one and is a prevalent location for northbound rear end crashes from careless driving, angle crashes from disregarding signals and improper left turns.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

No improvements are planned at this intersection and no improvements were recommended based on the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections

- Install back plates on traffic signals to improve visibility
- Cut back foliage boundary

Long Term Options

- Provide lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Provide improved drainage at intersections

Silver Palm Drive (SW 232nd St) and Krome Avenue (SR 997) MP 7.879

Location

The intersection of Silver Palm Drive and Krome Avenue is located within a developed area. The quadrants to the north of the intersection consist either of development or high density foliage areas. A gas station is located on the southwest quadrant of the intersection and has driveways leading onto both Silver Palm Drive and Krome Avenue. The quadrant to the southeast also comprises of a vacant field. Figure 6-12 shows the west approach of the intersection.

Figure 6-12: View from West Approach towards East, Silver Palm Drive and Krome Avenue

Intersection Geometry

Krome Avenue has a left turn lane and a shared through and right turn lane for the north and south approaches to the intersection. Bauer Drive consists of one lane in each direction on the eastbound and westbound approaches. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Silver Palm Drive and Krome Avenue is a signalized intersection. Protected-permitted left turn phasing is used on Krome Avenue. Signal visibility appears adequate. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

Signage

Street signage includes the presence of advanced warning signs approximately ninety feet prior to entering the intersection on the north and south approaches. The east and west approaches have no advanced warning signs. Other street signage includes posted speed signs, state road signs and approaching railway crossing signs.

Sight Distance

Sight distance for turning movements is poor for all of the approaches to the intersection due to the presence of high-density foliage, trees, fencing and utility structures.

Pavement Conditions and Markings

Large evidence of pavement cracking and unevenness was noted on the roadway. A majority of the turning radii were also noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and show evidence of skid marks and deterioration. The clear zones comprise of several feet of grassed area leading up to either a line of utility structures, fences or foliage. The east and west approaches have no notable roadway shoulder but have approximately five to six feet of grassed area leading to lighting structures or foliage boundaries.

Drainage

The Biscayne Drive and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches.

Pedestrian Facilities

There is the presence of a limited pedestrian footpath on the southwest quadrant of the intersection.

General Observations

This intersection is noted as having had a number of serious crashes occurring within its immediate vicinity due to rear ending and angle collisions. There is also a railway crossing located just north of the intersection, which is noted as having had several similar incidents. Driveway structures did not appear to cause any erratic driving behavior.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

No improvements are planned at this intersection and no improvements were recommended based on the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility
- Cut back foliage boundary

Long Term Options

- Provide lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Provide improved drainage at intersections

Hainlin Mill Drive (SW 216TH St) and Krome Avenue (SR 997) MP 8.885

Location

The intersection of Hainlin Mill Drive and Krome Avenue is located within a rural developed area. There are no major developments at this intersection and all four quadrants of the intersection are comprised of either fields or tree nurseries. Figure 6-13 shows the south approach of the intersection.

Intersection Geometry

Krome Avenue has a left turn lane and a shared through and right turn lane for the north and south approaches to the intersection. Hainlin Mill Drive consists of one lane in each direction on the eastbound and westbound approaches. The vertical and horizontal alignment of the intersection is level and straight.

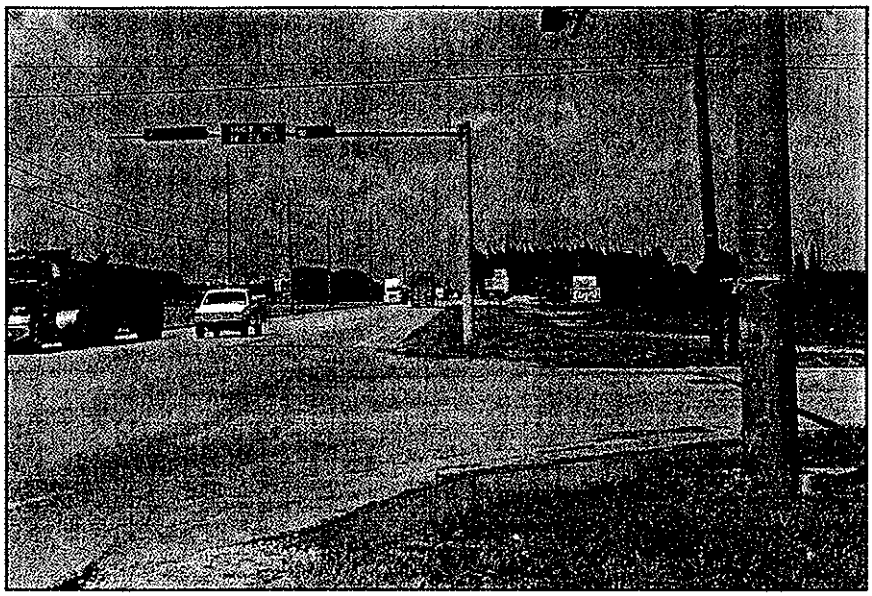


Figure 6-13: South Approach, Hainlin Mill Drive and Krome Avenue

Traffic Control Devices and Signal Visibility

Hainlin Mill Drive and Krome Avenue is a signalized intersection. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

Signage

Street signage includes the presence of advanced warning signs approximately prior to entering the intersection on all approaches. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for all turning movements is poor for all of the approaches to the intersection due to the trees and foliage present in each quadrant.

Pavement Conditions and Markings

The pavement structure was found to be in poor condition. Evidence of pavement cracking and fracture was noted on the roadway. A majority of the turning radii were also noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and have evidence of skid marks and wear. The clear zones comprise of several feet of grassed area leading up to either a line of utility structures or fencing. The east and west approaches have small and uneven roadway shoulders and have either limited clear zones leading to tree and utility lines or fencing.

Drainage

The Hainlin Mill Drive and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches.

Pedestrian Facilities

There is no presence of pedestrian footpaths on any of the four approaches.

General Observations

This intersection was noted as having had a number of rear end or left turn collisions typically due to careless driving or disregarding of traffic signals.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

No improvements are planned at this intersection and no improvements were recommended based on the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility
- Cut back foliage boundary

Long Term Options

- Provide lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Provide improved drainage at intersections

Quail Roost Drive (SW 200TH St) and Krome Avenue (SR 997) MP 9.884

Location

The intersection of Quail Roost Drive and Krome Avenue is located within a developed area. The northeast and southeast quadrants of the intersection comprise of field areas. A gas station and bank is located on the northwest quadrant of the intersection and both have driveways leading onto either Quail Roost Drive or Krome Avenue. The quadrant to the southeast also comprises of a convenience store and large unpaved parking area with driveways leading to Quail Roost Drive and Krome Avenue. Figure 6-14 shows the east approach of the intersection.

Figure 6-14: East Approach, Quail Roost Drive and Krome Avenue

Intersection Geometry

Krome Avenue has a left turn lane and a shared through and right turn lane for the north and south approaches to the intersection. The east approach of Hainlin Mill Drive consists of a shared left and through turn lane and a right turn lane and the west approach has one lane in each direction. It was noted that because of the generous roadway width of the east approach, occasionally vehicles ignored the intersection configurations and attempted to fit three vehicles abreast at the intersection (as shown in Figure 6-14). The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Quail Roost Drive and Krome Avenue is a signalized intersection. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

Signage

Street signage includes the presence of advanced warning signs prior to entering the intersection on all approaches. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for turning movements is limited for most of the approaches to the intersection due to the presence of structures, utility poles, trees and foliage.

Pavement Conditions and Markings

The pavement structure was found to be in poor condition. Evidence of pavement cracking and fracture was noted on the roadway. A majority of the turning radii were also noted to be fragmented

and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and have evidence of skid marks and wear. The clear zones comprise of several feet of grassed area leading up to either a line of utility structures or fencing. The east and west approaches have small and uneven roadway shoulders and have either limited clear zones leading to tree and utility lines or fencing.

Drainage

The Biscayne Drive and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches.

Pedestrian Facilities

There is no presence of pedestrian footpaths on any of the four approaches.

General Observations

This intersection was noted as having had several serious rear end crashes either within or near the intersection's vicinity. There is the presence of an extra utility pole propped against an existing pole in the westbound direction on the east approach.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

No improvements are planned at this intersection. The addition of an eastbound left-turn lane and signal modifications were recommended at this intersection based on the results of the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility
- Cut back foliage boundary

Long Term Options

- Provide lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections

- Provide improved drainage at intersections
- Either relocate or provide guardrail or other crash shield for the utility pole on the north side of the east approach.

Eureka Drive (SW 184TH St) and Krome Avenue (SR 997) MP 10.896

Location

The intersection of Eureka Drive and Krome Avenue is located within a rural developed area. The quadrants to the north of the intersection consist of field areas. A gas station is located on the southwest quadrant of the intersection and has driveways leading onto both Eureka Drive and Krome Avenue. The quadrant to the southeast also comprises of a high-density trees surrounded by a chain link fence. Figure 6-15 shows the south approach of the intersection.

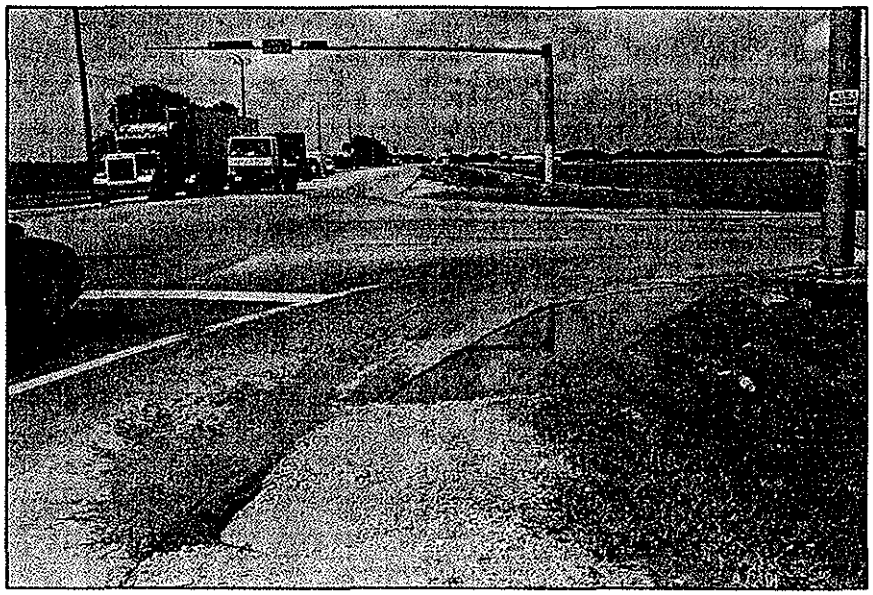


Figure 6-15: South Approach, Eureka Drive and Krome Avenue

Intersection Geometry

Krome Avenue has a left turn lane and a shared through and right turn lane for the north and south approaches to the intersection. Eureka Drive consists of one lane in each direction on the west approach, while the east approach has a shared right and through lane and left-turn lane. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Eureka Drive and Krome Avenue is a signalized intersection. Protected-permitted left turn phasing is used on Krome Avenue. Signal visibility appears adequate. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

Signage

Street signage includes the presence of advanced warning signs prior to entering the intersection on the north and south approaches. The east and west approaches have no advanced warning signs. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for turning movements is poor for most of the approaches to the intersection due to the presence of high-density foliage, trees, fencing and utility structures.

Pavement Conditions and Markings

A majority of the turning radii were noted to be fragmented and badly deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and have evidence of skid marks and wear. The clear zones comprise of several feet of grassed area leading up to either a line of lighting structures or development. An abrupt edge drop off from the pavement shoulder to the grass area was present on the west side of the south approach. Both east and west approaches have several feet of grassed area leading to utility structures, fields or foliage boundaries.

Drainage

The Eureka Drive and Krome Ave intersection shows some signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches.

Pedestrian Facilities

There is no presence of a pedestrian footpath on any of the four approaches to the intersection.

General Observations

This intersection is noted as having had several serious angle crashes.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

No improvements are planned at this intersection. The addition of a northbound right-turn lane is recommended by 2010 and the addition of a westbound left-turn lane and signal modifications is recommended by 2020 based on the results of the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections

- Cut back foliage boundary
- Install back plates on traffic signals to improve visibility

Long Term Options

- Provide lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Provide improved drainage at intersections

Howard Road (SW 136TH St) and Krome Avenue (SR 997) MP 13.895

Location

The intersection of Howard Road and Krome Avenue is located within a rural area. The areas surrounding the intersection are vacant farmed fields. Figure 6-16 shows the north approach of the intersection.

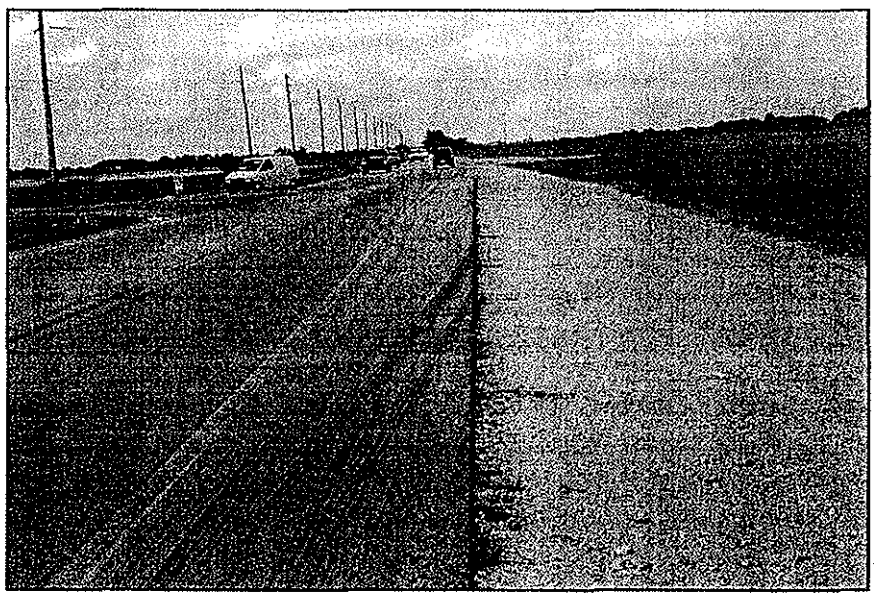


Figure 6-16: North Approach, Howard Road and Krome Avenue

Intersection Geometry

Howard Road and Krome Avenue form a T-intersection and each of the three approaches consists of one lane in each direction. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Howard Road and Krome Avenue is an unsignalized intersection. One stop sign is present on the west approach of the intersection.

Signage

Street signage includes the presence of advanced warning signs in both the north and south bound directions prior to entering the intersection. No advanced warning signage was noted on the west approach.

Sight Distance

Sight distance for turning movements is clear for all of the approaches.

Pavement Conditions and Markings

Evidence of moderate pavement cracking and fracture was noted on the roadway. Both turning radii at west approach of the intersection were also noted to be fragmented and badly deteriorating. Roadway markings on all of the approaches were noted to be either badly worn or absent. Several dark skid marks were noted in the north bound direction on the south approach indicating delayed braking for vehicles following turning vehicles into Howard Road. Roadway shoulders were extremely exposed, uneven and worn.

Shoulder and Clear Zone Characteristics

The paved roadway shoulder on the north and south approaches are approximately two feet in width and show evidence of large dark skid marks and wear. The clear zones comprise of several feet of grassed area leading up to either a line of utility structures or field areas. The northbound clear zone of the intersection was noted to have a severe edgeline drop-off with the presence of deep skid marks indicating that some vehicles are unable or unwilling to stop for left hand turning movements. The west approach has a small and uneven roadway shoulder with anywhere between five to fifteen feet of grassed area leading to utility structures or field boundaries.

Drainage

The Howard Road and Krome Ave intersection shows signs of poor drainage and run off problems. Especially noted was the presence of water in the deteriorated turning radii and worn shoulders of approaches.

Roadway Lighting and Utility Services

There is no roadway lighting present at this intersection or leading up to its approaches.

Pedestrian Facilities

There is no presence of pedestrian facilities on any of the approaches.

General Observations

This intersection was noted as having had two fatal incidents due to angle crashes.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

The FDOT has programmed turn lane additions, improved return radii, and improved lighting, signing, and pavement markings at this intersection. Specifically, a left-turn lane will be added to the south approach of Krome Avenue. Signalization was recommended at this intersection based on the results of the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Level transition from travel way to clear zone

Long Term Options

- Provide lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Left and right turning lanes into Howard Road from the north and south approaches.
- Upgrade paved shoulders for approaching intersections
- Upgrade clear zones for approaching intersections
- Improve intersection warning and visibility through advanced warning signs and flashing lights on stop signs where necessary
- Provide improved drainage at intersections

Kendall Drive (SW 88TH St) and Krome Avenue (SR 997) MP 17.431

Location

The intersection of Kendall Drive and Krome Avenue is located within a rural developed area. Each of the four quadrants of the intersection consists of high-density foliage areas and some watercourses. Guardrails also surround the northeast and southeast quadrants. Figure 6-17 shows the north approach of the intersection.

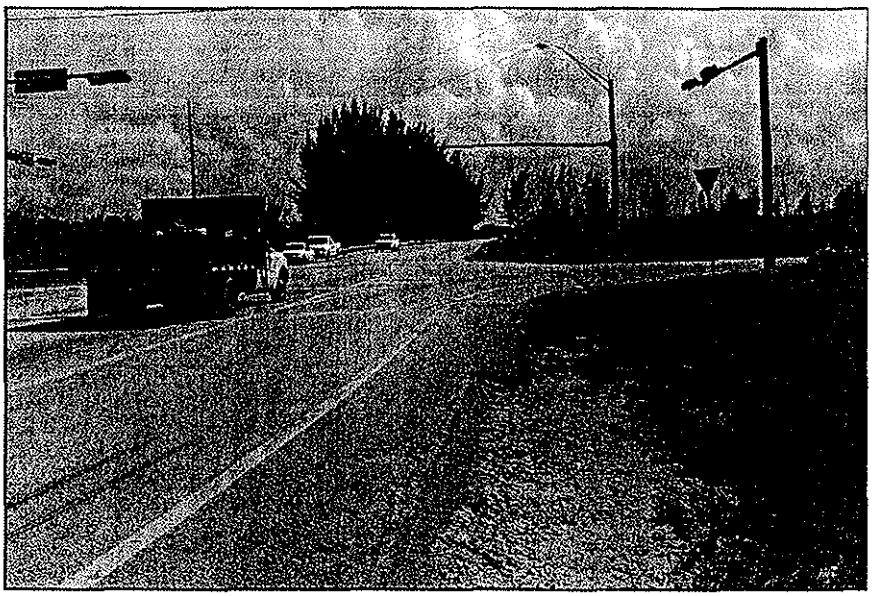


Figure 6-17: North Approach, Kendall Drive and Krome Avenue

Intersection Geometry

Both the north and south approaches of Krome Avenue have an exclusive left turn lane, one through lane and a right turn lane. The east approach of Kendall Drive has a shared left and through lane plus an exclusive right turn lane. This approach is divided by a wide grassed median strip. The west approach is considerably narrower than the east approach and has one shared lane for left, through, and right turn movements eastbound and one lane westbound.

Traffic Control Devices and Signal Visibility

Kendall Drive and Krome Avenue is a signalized intersection. Signal visibility appears adequate. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals. There is one yield sign on each of the right turn lanes in the east and westbound directions.

Signage

Street signage includes the presence of advanced warning signs prior to entering the intersection on all approaches. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for turning movements is poor for most of the approaches to the intersection due to the presence of high-density foliage and trees.

Pavement Conditions and Markings

The turning radii were noted to be showing signs of deterioration. Roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The northbound side of Krome Avenue lacks a notable paved roadway shoulder and no clear zone due to the presence of the guardrail. The paved roadway shoulder on the southbound side of Krome Avenue is approximately two feet in width, has evidence of skid marks and is uneven. The southbound clear zone comprises of several feet of grassed or graveled area leading up to foliage boundaries.

Drainage

There are no obvious signs of poor drainage or run off problems within the intersection or surrounding area.

Roadway Lighting and Utility Services

There are lighting structures present atop the northeast and southwest corner traffic signals. The west approach of the intersection also has lighting.

Pedestrian Facilities

There is no presence of pedestrian facilities on any of the four approaches to the intersection.

General Observations

This intersection was noted as having one fatal incident, a safety ratio greater than one, some serious accidents due to rear ending, angle crashes from disregarding signals and left turn crashes from failing to yield.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

No improvements are planned at this intersection. The addition of an eastbound left-turn lane, a westbound left-turn and left-through shared lane, dual westbound right-turn lanes, southbound dual left-turn lanes, and signal timing modifications is recommended based on the results of the capacity analysis.

Recommendations

Short Term Options

- Remove yield signs from intersection and have right turns operate through the signal (right-turn on red)
- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility
- Cut back foliage boundary

Long Term Options

- Increase lighting at the intersection
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections

Tamiami Trail (SW 8TH St) and Krome Avenue (SR 997) MP 22.430

Location

The intersection is located within a developed area. A canal runs westbound along Tamiami Trail. There is also a northbound water structure running parallel to Krome Avenue. A gas station with a truck stop is located at the southeast corner of the intersection, with driveways on both Krome Avenue and Tamiami Trail. A tobacco store is located on the southwest corner of the intersection, with a driveway on Krome Avenue. A truck service center (although slightly offset from the intersection) is also located on the southwest corner of the intersection, also with a driveway on Krome Avenue. There is roadway construction present eastbound on Tamiami Trail. Figure 6-17 shows the north approach of the intersection.

Intersection Geometry

The south approach of Krome Avenue has a right turn lane and a shared left and through lane, whilst the north approach provides an exclusive left turn lane and shared right and through lane. Tamiami Trail consists of two through lanes and exclusive left and right turn lanes in each direction. Tamiami

Trail is divided down the centerline by a grassed median strip. The vertical and horizontal alignment of the intersection is level and straight.

Traffic Control Devices and Signal Visibility

Tamiami Trail and Krome Avenue is a signalized intersection. Protected-permitted left turn phasing is used on Krome Avenue. Signal visibility appears adequate. Signals are shaded with visors and signal lenses appear to be clear and bright. There are no back plates present on any of the traffic signals.

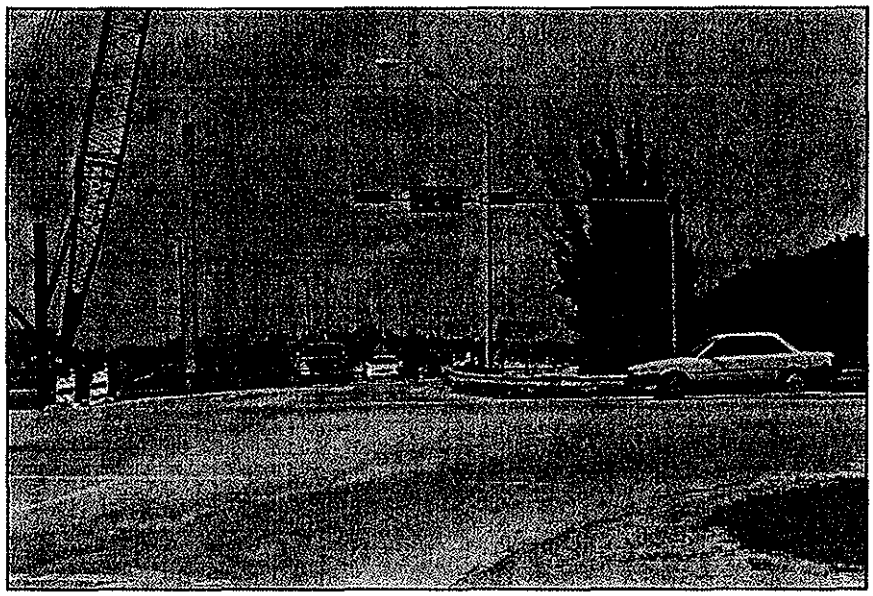


Figure 6-18: South Approach towards North, Tamiami Trail and Krome Avenue

Signage

Street signage includes the presence of advanced warning signs prior to entering the intersection on all approaches. Other street signage includes posted speed signs and state road signs.

Sight Distance

Sight distance for turning movements is limited for most of the approaches to the intersection due to foliage boundaries, bridge and road construction and temporary roadside signage.

Pavement Conditions and Markings

Portions of the pavement structure were noted to be fragmented and deteriorating. White roadway markings on most of the approaches were noted to be either badly worn or absent.

Shoulder and Clear Zone Characteristics

The paved roadway shoulders on all approaches are narrow in width, uneven and show evidence of wear. The clear zones are limited on each approach with the presence of driveways and roadside structures such as guardrails or lighting poles.

Drainage

There appears to be no obvious signs of poor drainage or run off problems within the intersection or surrounding area.

Roadway Lighting and Utility Services

There is roadway lighting present on both sides of Tamiami trail.

Pedestrian Facilities

There is no presence of a pedestrian footpath on any of the four approaches to the intersection.

General Observations

This intersection is noted as having had several serious crashes.

Planned Improvements/Improvements Recommended Based on Capacity Analysis

The FDOT has programmed turn lane additions, improved return radii, and improved lighting, signing, and pavement markings at this intersection. Specifically, a left-turn lane and a right-turn lane will be added to the north approach of Krome Avenue and a left-turn lane will be added to the south approach of Krome Avenue. No improvements were recommended at this intersection based on the results of the capacity analysis.

Recommendations

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility

Long Term Options

- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections

Okeechobee Road (US27) and Krome Avenue (SR 997) MP 14.275

The Okeechobee Road and Krome Avenue intersection was noted as having had a series of serious crashes throughout the study period. This is a complex unsignalized intersection between two high-speed facilities. Due to the complexity of this intersection and the issues associated with Okeechobee Road that need to be included in an analysis, it is recommended that a detailed traffic operations analysis and a signal warrant analysis be conducted at this location.

SUMMARY

Based on existing conditions, the following short and long-term countermeasures have been established for the intersections along the study corridor.

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility
- Improve intersection warning and visibility through advanced warning signs, reflectors, and flashing lights where necessary
- Level transition from travel way to clear zone at the Howard Road intersection.
- Cut back foliage boundary
- Remove yield signs from intersection and have right turns operate through the signal (right-turn on red) at the Kendall Drive intersection

Long Term Options

- Increase lighting at the intersections
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Provide improved drainage at intersections
- Either relocate the utility pole or provide guardrail or other crash shield for the utility pole on the north side of the east approach at the Quail Roost intersection

These recommended improvements, along with the programmed improvements by the FDOT and the improvements recommended based on the capacity analysis, will provide for consistent features and treatments along the study corridor and will provide improved safety and enhanced capacity. The implementation procedure for the improvements should be prioritized after conducting a cost/benefit analysis and after a careful investigation of alternatives has been conducted.

Planning Level Cost Estimates

Based on guidance provided by the FDOT, planning level cost estimates and recommendations were provided for several of the potential intersection improvements identified in Table 4-2 and for several of the short-term recommended system countermeasures and intersection countermeasures.

Operational Improvement Recommendations

The FDOT is currently preparing cost estimates for a number of intersections included in the Krome Avenue Corridor. The improvements at these locations consist of adding left-turn lanes on Krome Avenue, improved return radii, lighting, signing, and pavement markings at the intersection, exclusive right-turn lanes on certain side street approaches, and shoulder improvements on Krome Avenue (providing 5-foot paved and 7-foot unpaved shoulders on Krome Avenue for approximately 1,000 feet north and south of the intersection). Based on this work, an average total construction cost estimate of $500,000 for unsignalized intersection improvements and $600,000 for signalized intersection improvements was calculated (a contingency is included in the cost estimate). This forms the basis for the cost estimates provided below:

- Quail Roost Drive/SW 200th Street: An eastbound left-turn lane is recommended at this intersection. Based on a field review of the site, it appears that the widening on the west approach to accommodate the turn lane can be achieved without impacting the existing signal poles. Therefore, an approximate cost of $500,000 is recommended at the intersection for the addition of the turn lane and the other associated improvements (improved return radii, lighting, signing, and pavement markings at the intersection, shoulder improvements on Krome Avenue, and drainage improvements).
- Eureka Drive/SW 184th Street: A northbound right-turn lane and a westbound left-turn lane are recommended at this signalized intersection. Based on a field review of the intersection, it appears that the widening on the south approach and the east approach to accommodate the turn lanes can be achieved without impacting the existing signal poles (the south approach is shown in Figure 6-19). Therefore, an approximate cost of $500,000 is recommended at the intersection for the addition of the turn lanes and the other associated improvements (improved return radii, lighting, signing, and pavement markings at the intersection, shoulder improvements on Krome Avenue, and drainage improvements).
- Kendall Drive/SW 88th Street: The addition of an eastbound left-turn lane, a westbound left-turn and left-through shared lane, a second westbound right-turn lane and a second southbound left-turn lane are recommended at this signalized intersection. To accommodate the additional turn lanes from Kendall Drive (double left-turn lanes and double right-turn lanes), Krome Avenue will have to be widened north and south of Kendall Drive intersection. This was assumed to occur through the use of auxiliary lanes on Krome Avenue that would extend approximately 1,000 feet from the intersection before being tapered back to the existing two-lane section. Due to the major reconfiguration of all of the intersection legs, the need to relocate the existing traffic signals, the significant drainage issues (a canal runs on the east side of Krome Avenue and on the north and south sides of Kendall Drive) and the presence of a utility line on the north side of Kendall Drive, an approximate cost of $1,000,000 is recommended at this intersection.

  It is noted that due to the impacts of the proposed improvements at this intersection, a Project Development and Environmental Study (PD&E Study) that considers a range of alternatives would likely need to be completed for construction approval. Therefore, the estimated approximate cost should be viewed as a starting point for planning purposes that will likely change as detailed alternatives are developed and analyzed.
- Okeechobee Road/US 27: Signalization of this intersection is recommended. The approximate cost of $200,000 is recommended for signalization of the intersection and signing and striping leading to the intersection.

Figure 6-19: South Approach of Eureka Drive/SW 184th Street

System and Intersection Countermeasures

- Raised pavement markers (RPMs) and improved pavement markings: The cost to purchase and install RPMs and improve the existing pavement markings in the study area is estimated to be approximately $225,000. This estimated cost does not include the lengths of Krome Avenue that will be impacted by the five intersections programmed for improvement (it was assumed the five intersections programmed for improvement would have RPMs and improved pavement markings included in the project). It is noted that this cost estimate should be modified when a striping plan is updated
- Signal backplates: The cost to purchase and install traffic signal backplates at the five intersections on Krome Avenue not programmed for improvement (it was assumed the other intersections already programmed for improvement would have backplates included in the project) is estimated to be approximately $15,000 for all of the intersections.
- Several shoulder improvements will be addressed as part of the FDOT programmed improvements and as part of the intersection improvements recommended based on the capacity analysis. It is therefore recommended that the FDOT perform shoulder improvements (repave, level, etc) on the remaining portions of Krome Avenue as part of a routine maintenance program.

Section 7

Conclusions

7. Conclusions

In summary, it is clear that traffic volume growth and increasing levels of congestion have contributed to driver frustration and attempts to make risky passing maneuvers on Krome Avenue. This has probably led to an increase in the number and severity of crashes in the corridor. Short of widening the highway to a four lane divided section, there are a number of congestion and safety countermeasures that could be considered in the short-term and long-term that will enhance mobility and safety in the corridor. (Some of these improvements are consistent with the previously approved Action Plan and some of them are in addition to the Action Plan improvements.) However, there are four factors that, in combination, argue for the consideration of widening Krome Avenue to a four lane divided section:

- The fact that Krome Avenue is on the Florida Intrastate Highway System and the requirement that it be designated as controlled-access facility with a cross-section that provides for at least four lanes with a restrictive median.
- The likelihood that the high percentage of trucks that use the entire length of the corridor contribute to an increase in crash severity when trucks are involved in crashes.
- The increasing levels of roadway and intersection congestion and the difficulty in mitigating these levels of congestion short of providing for additional north-south through movement capacity.
- The crash experience on Krome Avenue exceeds the statewide average for this type of roadway. The high number of crashes and the increase in crash severity (as demonstrated by an increase in the number of fatal crashes largely due to head-on and angle collisions) that likely would be mitigated by physically separating the directions of travel with a median.

For these reasons, it is recommended that a Project Development and Environment process be conducted to consider the range of solutions for improving the operational and safety characteristics of Krome Avenue. This PD&E study should consider the potential improvements that have been suggested by this corridor study (including the possibility of traffic signals) and additional improvements that may come from the public involvement effort that occurs during the PD&E study.

The following countermeasures have been identified for implementation in the short and long terms basis:

System Countermeasures Recommendations

As the need for these treatments occurs throughout the length of Krome Avenue (to varying degrees), the treatments should be considered for application on the entire corridor.

Short-Term

- Raised pavement markers (RPMs), improved pavement markings, and use of reflective tape on signposts. This treatment will have the lowest cost and can likely be implemented in the shortest period of time.
- Provide a smooth transition to the clear zone. This consists of leveling edge drop-offs between the paved portion of the roadway and the unpaved (either gravel or grass) portion of the clear zone. Figure 6-2, Figure 6-3, and Figure 6-4 show examples of edge drop-offs on

Krome Avenue. FDOT Standard Index 105 (shown in Figure 6-5) provides guidance on treatments used to provide a smooth transition to the clear zone. These treatments can be part of a roadway maintenance program.

- Improve the condition of existing shoulders. As recommended in the *Krome Avenue Action Plan*, widen the paved shoulders to 10 feet approaching intersections and railroads from Avocado Drive to Kendall Drive and provide 5-foot paved and 5-foot turfed shoulders from Kendall Drive to Okeechobee Road. A lower cost option for this alternative is to fix the existing shoulders (repave or regrade) on Krome Avenue.

Long-Term

- Evaluate the feasibility of changing the existing two-lane undivided Krome Avenue corridor to include:
  - Four-lane median separated sections;
  - Passing lanes; and/or
  - A median Separated Two-Lane Section.
- Provision of the widest feasible clear zone and improved shoulder design.
- Upgrade Krome Avenue to controlled access facility standards (previously defined).
- Provision of a roadway lighting system in the corridor.

Intersection Countermeasures Recommendations

Based on existing conditions, the following short and long-term countermeasures have been established for the intersections along the study corridor.

Short Term Options

- Repaint and re-stripe roadway markings
- Provide reflective roadway markings at intersections
- Install back plates on traffic signals to improve visibility
- Improve intersection warning and visibility through advanced warning signs, reflectors, and flashing lights where necessary
- Level transition from travel way to clear zone at the Howard Road intersection.
- Cut back foliage boundary
- Remove yield signs from intersection and have right turns operate through the signal (right-turn on red) at the Kendall Drive intersection

Long Term Options

- Increase lighting at the intersections
- Upgrade and repair pavement structures, in particular the turning radius of each approach
- Upgrade and widen paved shoulders for approaching intersections
- Upgrade and widen clear zones for approaching intersections
- Provide improved drainage at intersections

- Either relocate the utility pole or provide guardrail or other crash shield for the utility pole on the north side of the east approach at the Quail Roost intersection

These recommended improvements, along with the programmed improvements by the FDOT and the improvements recommended based on the capacity analysis, will provide for consistent features and treatments along the study corridor and will provide improved safety and enhanced capacity. The implementation procedure for the improvements should be prioritized after conducting a cost/benefit analysis and after a careful investigation of alternatives has been conducted.

Section 8

References

8. References

1. *Quality/Level of Service Handbook*, Florida Department of Transportation, 2002

2. *Manual on Uniform Traffic Studies,* Florida Department of Transportation, January 2000

3. *Highway Capacity Manual,* Transportation Research Board, 2000

4. *Manual on Uniform Traffic Control Devices – Millennium Edition,* US Department of Transportation-Federal Highway Administration, 2001

5. *NCHRP Report 440 – Accident Mitigation Guide for Congested Rural Two-Lane Highways.* Transportation Research Board. 2000.

6. Ulman, G.L. *Retroreflective Raised Pavement Marker Field Testing: Initial Interim Report.* Report Number 1946-1 (1992).

7. *Krome Avenue Action Plan*, October 1999, prepared by Keith and Schnars, P.A. for the Florida Department of Transportation, District Six.

8. FDOT *Median Handbook*, January 10, 1997.

APPENDIX C

Miami-Dade County Resolutions

Miami-Dade Legislative Item
File Number: 020550

Printable PDF Format

File Number: 020550 **File Type:** Resolution **Status:** Adopted
Version: 0 **Reference:** R-199-02 **Control:**
File Name: AMEND CDMP PROCESS TO ALLOW WIDENING OF KROME AVE. **Introduced:** 2/26/2002
Requester: NONE **Cost:** **Final Action:** 2/26/2002
Agenda Date: 2/26/2002 **Agenda Item Number:** 6O2D

Notes: Title: RESOLUTION INSTRUCTING THE COUNTY MANAGER TO EXPEDITE THE COMPREHENSIVE DEVELOPMENT MASTER PLAN ("CDMP") AMENDMENT PROCESS TO ALLOW THE WIDENING OF KROME AVENUE IN MIAMI-DADE COUNTY AS A FOUR LANE ROAD, INCLUDING AS APPROPRIATE FILING AN APPLICATION TO AMEND THE CDMP IN THE OCTOBER 2001 CYCLE

Indexes: CDMP
TRAFFIC FLOW
Sponsors: Dr. Miriam Alonso, Prime Sponsor

Sunset Provision: No **Effective Date:** **Expiration Date:**
Registered Lobbyist: None Listed

Legislative History

Acting Body	Date	Agenda Item	Action	Sent To	Due Date	Returned	Pass/Fail
Board of County Commissioners	2/26/2002	6O2D	Adopted				P
REPORT:	(See Report Uncer Agenda Item 6O2A)						

Legislative Text

TITLE
RESOLUTION INSTRUCTING THE COUNTY MANAGER TO EXPEDITE THE COMPREHENSIVE DEVELOPMENT MASTER PLAN ("CDMP") AMENDMENT PROCESS TO ALLOW THE WIDENING OF KROME AVENUE IN MIAMI-DADE COUNTY AS A FOUR LANE ROAD, INCLUDING AS APPROPRIATE FILING AN APPLICATION TO AMEND THE CDMP IN THE OCTOBER 2001 CYCLE

BODY

WHEREAS, within the past week there have been three or more accidents along Krome Avenue that have resulted in several fatalities; and

WHEREAS, it is of official concern to Miami-Dade County that Krome Avenue be as safe as possible to the traveling public, since protection of human life must be our number one priority; and

WHEREAS, the Miami-Dade County CDMP must be amended to allow the widening of Krome Avenue; and

WHEREAS, section 2-116.1, Code of Miami-Dade County, allows this Board to direct the filing of a special schedule application for consideration in the October 2001 CDMP amendment cycle,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that the County Manager is hereby directed to expedite the Comprehensive Development Master Plan ("CDMP") amendment process to include the widening of Krome Avenue in Miami-Dade County, as a four lane road, including, as appropriate, the filing of an application to amend the CDMP for consideration in the October 2001 CDMP amendment cycle.

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Approved _____ Mayor
Veto _____
Override _____

Substitute
Special Item No.1
10-10-02

OFFICIAL FILE COPY
CLERK OF THE BOARD
OF COUNTY COMMISSIONERS
DADE COUNTY, FLORIDA

ORDINANCE NO. 02-198

ORDINANCE RELATING TO MIAMI-DADE COUNTY COMPREHENSIVE DEVELOPMENT MASTER PLAN; PROVIDING DISPOSITION OF APPLICATIONS FILED IN OCTOBER 2001 CYCLE TO AMEND, MODIFY, ADD TO OR CHANGE COMPREHENSIVE DEVELOPMENT MASTER PLAN; PROVIDING SEVERABILITY, EXCLUSION FROM THE CODE AND AN EFFECTIVE DATE

WHEREAS, this Board has provided a procedure (codified as Section 2-116.1 of the Code of Miami-Dade County, Florida) to amend, modify, add to or change the Miami-Dade County Comprehensive Development Master Plan (CDMP); and

WHEREAS, Miami-Dade County's procedures reflect and comply with the procedures for adopting or amending local comprehensive plans as set forth in Section 163, Part II, Florida States; and

WHEREAS, fourteen CDMP amendment applications were filed by private parties with the Miami-Dade County Department of Planning and Zoning on or before October 31, 2001, and are contained in the document titled "October 2001 Applications to Amend the Comprehensive Development Master Plan" dated December 5, 2001; and

WHEREAS, Application No. 15 was filed by the Miami-Dade County Department of Planning and Zoning on February 25, 2002, and is contained in the Department's Initial Recommendations report addressing the October 2001 Applications, published on February 25, 2002; and

WHEREAS, Application No. 16 was filed by the Miami-Dade County Department of Planning and Zoning on February 28, 2002, as directed by the Board of County Commissioners in Resolution No. R-199-02 adopted on February 26, 2002; and

MIAMI-DADE CO.
02-2 (adopted)
SHELF COPY

WHEREAS, affected Community Councils, the Planning Advisory Board and the Department of Planning and Zoning have acted in accordance with the referenced State and County procedures and have accepted applications, held public hearings and transmitted recommendations for disposition of such applications to this Board; and

WHEREAS, on May 30, 2002, this board, by Resolution, instructed the County Manager to transmit certain applications to the Florida Department of Community Affairs (DCA) pursuant to Section 163.3184(3), F.S.; and

WHEREAS the DCA reviewed certain applications at the request of this Board and has transmitted written comments pursuant to Section 163.3184 (6)(c), F.S.; and

WHEREAS, the Board of County Commissioners must take final action to Adopt, Adopt With Change or Not Adopt amendment applications no later than sixty (60) days after receipt of written comments from DCA addressing the applications(s); and

WHEREAS, all existing lawful uses and zoning in effect prior to a CDMP amendment are deemed to remain consistent with the CDMP as amended unless the Board of County Commissioners, in conjunction with a particular zoning action, finds such preexisting zoning or uses to be inconsistent with the CDMP based upon a planning study addressing the criteria set forth in the CDMP; and

WHEREAS, the approval of an amendment to the CDMP does not assure favorable action upon any application for zoning or other land use approval but is part of the overall land use policies of the County; and

WHEREAS, any application for zoning or other land use approval involves the application of the County's overall land use policies to the particular request under consideration; and

WHEREAS, the County's overall land use policies include, but are not limited to, the CDMP in its entirety and the County's land development regulations; and

WHEREAS, this Board has conducted the public hearings required by the referenced procedures preparatory to enactment of this ordinance;

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA:

Section 1. All matters set forth in the preamble are found to be true and are hereby incorporated by reference as if set forth verbatim and adopted.

Section 2. This Board hereby desires to take further action on all or some of the pending applications filed for review during the October 2001 cycle for amendments, modifications, additions, or changes to the Miami-Dade County Comprehensive Development Master Plan as follows:

Application Number	Applicant/Representative Location (Size) REQUESTED CHANGE TO THE CDMP LAND USE PLAN MAP, POLICIES OR TEXT	FINAL COMMISSION ACTION
2	Victor Posner, The Raven Holding Corp., Security Management Corp., and Golden Glades Acquisition Corp./ David P. Lederman, Esq. Between theoretical NW 3 Avenue and theoretical NW 6 Court, Between NW 177 Street and NW 7 Ave. Extension. (32.5 acres) Subarea 1 FROM: MEDIUM DENSITY RESIDENTIAL (13 to 25 DU/Ac.) TO: INDUSTRIAL and OFFICE (14.1 Acres) Subarea 2 FROM: BUSINESS AND OFFICE TO: INDUSTRIAL AND OFFICE (14.3 Acres) Subarea 3 FROM: MEDIUM DENSITY RESIDENTIAL (13 to 25 DU/Ac.) TO: BUSINESS and OFFICE (4.1 Acres)	Adopted

Application Number	Applicant/Representative Location (Size) REQUESTED CHANGE TO THE CDMP LAND USE PLAN MAP, POLICIES OR TEXT	FINAL COMMISSION ACTION
5	April Realty, LTD A Florida limited partnership/Juan J. Mayol, Jr., Esq. and Ines Marrero-Prieques, Esq. North frontage of SW 42 Street (Bird Road) and between SW 129 and 130 Avenues (4.176 Acres) FROM: LOW DENSITY RESIDENTIAL (2.5 to 6.0/DU/Ac.) TO: BUSINESS and OFFICE	Adopt with change by extending 1 block west to SW 132 Ave. and by changing the LUP map designation to Office/Residential as recommended by Community Council Ten
9	Pelican Bay Development, Inc./ Jeffrey Bercow, Esq. And Ben Fernandez Esq. Southeast corner of SW 200 Street and SW 127 Ave. (9.99 Acres) FROM: LOW DENSITY RESIDENTIAL (2.5 to 6.0 DU/Ac.) TO: BUSINESS and OFFICE	Adopted with acceptance of declaration of restrictions
11	Miami-Dade County Department of Planning and Zoning/ Diane O'Quinn Williams, Director TRANSPORTATION ELEMENT, Traffic Circulation Subelement; and LAND USE ELEMENT, Land Use Plan map: Delete the segment of SW 85 Avenue between SW 213 and 216 Streets from Figures 1 and 3 in the Traffic Circulation Subelement and the Land Use Plan map.	Adopted
12	Miami-Dade County Department of Planning and Zoning/ Diane O'Quinn Williams, Director LAND USE ELEMENT Revise the Population Estimates and Projections by replacing Figure 6.	Adopted
13	Miami-Dade County Department of Planning and Zoning/Diane O'Quinn Williams-Director LAND USE ELEMENT Revise text relating to Business and Office strips and nodes.	Adopted
15	Miami-Dade County Department of Planning and Zoning/Diane O'Quinn Williams, Director LAND USE ELEMENT Revise text relating to "Parks and Recreation" Land Use Plan map category	Adopted with changes as recommended by the Department of Planning and Zoning in the Revised Recommendations Report and modified by the Corrected Errata and Supplement to the Revised Recommendations Report.
16	Miami-Dade County Department of Planning and Zoning/Diane O'Quinn Williams, Director Change Plan designations of Krome Avenue (SR 997/SW 177 Avenue), between US-27 and SW 328 Street, as follows; LAND USE ELEMENT, Land Use Plan map: Change from Minor Roadway (2 lanes) to Major Roadway (3 or more lanes); and TRANSPORTATION ELEMENT, Traffic Circulation Subelement, Figure 1, "Planned Year 2015 Roadway Network: " Change from 2 lanes to 4 lanes	Adopted with changes as recommended by the Department of Planning and Zoning in the Revised Recommendations Report and modified by the Corrected Errata and Supplement to the Revised Recommendations Report, which includes changes to Land

Application Number	Applicant/Representative Location (Size) REQUESTED CHANGE TO THE CDMP LAND USE PLAN MAP, POLICIES OR TEXT	FINAL COMMISSION ACTION
		Use Element Policies 3F, 3G, and 3H, as well as new Policy 4E in the Traffic Circulation Subelement (including the word "other" in Land Use Policy 3F as stated on the record) to approve the designation of Krome Avenue as four lanes between US 27 and SW 296th Street. The motion also includes the following items, not originally in the application: • To request the FDOT to submit a plan for expedited funding and construction • To provide a specific time frame for that expediting; • To request FDOT to include a median • To ask both FDOT and the County Manager to present to the Commission a plan for increased safety on Krome Avenue to take effect at the most immediate time possible.

Section 3. If any section, subsection, sentence, clause or provision of this ordinance is held invalid, the remainder of this ordinance shall not be affected thereby. If any application, or portion of an application is found to be not in compliance pursuant to Section 163.3184, F.S., the remainder of the application subject to such a finding, and the remaining applications adopted by this ordinance shall not be affected thereby.

Section 4. It is the intention of the Board of County Commissioners, and it is hereby ordained that the provisions of this ordinance shall be excluded from the Code of Miami-Dade County, Florida.

Section 5. This ordinance shall become effective ten (10) days after the date of enactment, unless vetoed by the Mayor, and if vetoed, shall become effective only upon an

override by this Board, however, the effective date of any plan amendment shall be in accordance with the following language which is included at the request of the Florida Department of Community Affairs without any admission by Miami-Dade County of the authority of the Department of Community Affairs or any other governmental entity to request or require such language; "The effective date of any plan amendment approved by this ordinance shall be the date a final order is issued by the Department of Community Affairs or Administration Commission finding the amendment in compliance in accordance with Section 163.3184(1)(b), Florida Statutes, whichever occurs earlier. No development orders, development permits, or land uses dependent on such amendment may be issued or commence before it has become effective. If a final order of noncompliance is issued by the Administration Commission, this amendment may nevertheless be made effective by adoption of a resolution affirming its effective status, a copy of which resolution shall be filed with the Clerk of the Board and sent to the Department of Community Affairs, Division of Resource Planning and Management, Plan Processing Team. The Department's notice of intent to find a plan amendment in compliance shall be deemed to be a final order if no timely petition challenging the amendment is filed."

Section 6. This ordinance does not contain a sunset provision.

PASSED AND ADOPTED: OCT 1 0 2002

Approved by County Attorney as
to form and legal sufficiency: RAG

Prepared by: RLK

Robert L. Krawcheck

MIAMI-DADE
Empowerment Trust, Inc.
Partnering for Progress

RECEIVED
NOV 22 2004
By

October 22, 2004

Ms. Monica Diez
Project Manager
Florida Department of Transportation
1000 North West 111 Avenue
Room 6103
Miami, Florida 33172

Dear Ms. Diez:

Thank you for your presentation at the October meeting of the Homestead Empowerment Zone Neighborhood Assembly (HEZNA) regarding the expansion and transportation plans for Krome Avenue. The HEZNA support small businesses, community development corporations and community projects that are backed and maintained by residents and that address the needs of the entire community. We understand the vital role transportation and accessibility play in the growth of a small business and the revitalization of a community. We thank you for your efforts in improving the aforementioned for the businesses and residents of Homestead.

On behalf of the HEZNA, I offer our support and endorsement of the Florida Department of Transportation (FDOT) Krome Avenue Development Project. As residents of Homestead we are painfully aware of the dangers and congestion issues related to traveling Krome Avenue. We know the expansion of Krome Avenue will be extremely beneficial to the community and is long overdue. We applaud FDOT and URS in their efforts to make travel to and throughout our community safe with less congestion.

As a life long resident of forty-nine years, Chairman of the HEZNA, and a local business owner, I would like to participate on the Community Involvement committee for this project. I know my extensive knowledge of the needs of the business community and the residential community in Homestead will be greatly beneficial to FDOT and URS. If you require any additional information, or if I can be of further assistance please do not hesitate to contact me at (305) 247-4535. Thank you for consideration in this matter.

Sincerely,

Gary Ferguson
Chairman
Homestead Empowerment Zone Neighborhood Assembly

Cc: Homestead Empowerment Zone Neighborhood Assembly Members
Bryan K. Finnie, President/CEO Miami Dade Empowerment Trust
Aundra C. Wallace, Vice President/Managing Director Miami Dade Empowerment Trust
Julio Boucle, Consultant Project Manager, URS Corporation

3050 Biscayne Boulevard, Suite 300
Miami, Florida 33137
P: (305) 372-7620 • F: (305) 372-7629

September 13, 2005

TO: Hedda Acosta

FROM: Mary Finlan

RE: Krome Avenue

Pages: 2

On behalf of the Board of Directors of the Greater Homestead/Florida City Chamber of Commerce, I would like to express support of the expansion/widening of Krome Avenue to four lanes for the entire length of the roadway. We do not believe the currently planned improvements will address the greater problems that growth will bring in the future, or the current high incidence of traffic accidents on Krome Avenue. The following page of this document contains a copy of a resolution passed by the Board of Directors at their April 18, 2002 meeting. Their position has not changed to date.

The Greater Homestead/Florida City Chamber of Commerce
43 North Krome Avenue Homestead, Florida 33030 Phone 305-247-2332

The undersigned, The Greater Homestead/Florida City Chamber of Commerce, does here certify that the following resolution was duly adopted at a meeting duly called and held on April 18th, 2002.

A resolution from the Board of Directors of the Greater Homestead/Florida City Chamber of Commerce in support of the expansion of Krome Avenue to four lanes.

WHEREAS, Krome Avenue has been declared one of the most dangerous roads in South Florida, and

WHEREAS, twenty per cent of all traffic deaths on State Roads in Miami-Dade County happen on Krome Avenue, and

WHEREAS, the number of traffic fatalities on Krome Avenue has increased each year since 1998, and

WHEREAS, six people were killed in traffic accidents on Krome Avenue in the first seven weeks of 2002, and

WHEREAS, the Florida Department of Transportation has recommended the expansion of Krome Avenue to four lanes,

THEREFORE, BE IT RESOLVED this 18th day of April, 2002, that the Board of Directors of the Greater Homestead/Florida City Chamber of Commerce does hereby support the expansion of Krome Avenue to four lanes.

The Greater Homestead/Florida City Chamber of Commerce
43 North Krome Avenue Homestead, Florida 33030 Phone 305-247-2332

VISION COUNCIL

RECEIVED
PLEMO
AUG 16 2006
DEPT. OF TRANSPORTATION
MIAMI, FLORIDA

August 11, 2006

Vilma Croft, P.E.
FDOT Project Manager
1000 NW 111 Avenue
Room 6103
Miami, Florida 33172

Dear Ms. Croft,

The Vision Council Board of Directors recently voted to endorse a four lane, divided highway option for 177th Avenue (Krome Avenue) in the area from SW 136th Street to SW 296th Street.

Krome Avenue is a major economic corridor serving the Deep South Miami Dade area. It serves the agricultural and tourism sectors of our economy as well as the mobility needs of the citizens. It is imperative that we preserve its capacity to serve local business needs even as rapid residential growth in the region places more and more traffic on the road. According to our research, FDOT data traffic counts at three locations on Krome Avenue increased approximately 7.7 percent during the past year.

We are convinced four-laning is the sensible solution to the Krome Avenue issue. It will increase the road's day-to-day capacity and – in our opinion – provide a safer roadway. Additionally, it will expand hurricane evacuation capability and assist in post hurricane recovery efforts. Vision Council has yet select which of the two four-lane alternatives we will ultimately support as the Board feels it needs to know more about the design aspects of the two alternatives and their impact on the community.

Vision Council was formed in 1987 as a non-profit corporation designed to attract and to retain business and industry in the southern most part of Miami-Dade County. It is a public-private organization that acts as a focal point for development activities in conjunction with the cities oh Homestead and Florida City, the County and other complimentary organizations. Through an affiliated corporation, Vision Foreign Trade Zone, Inc., we hold the Grant to operate a 1,000-acre Foreign Trade Zone in east Homestead.

If you have any questions, I can be contacted via e-mail at mrichardson@visioncouncil.com or by phone at 305-247-7082.

Sincerely,

Michael E. Richardson
President/CEO

43 North Krome Avenue • Homestead, Florida 33030
(305) 247-7082 • Fax (305) 247-9976 • info@visioncouncil.com

BPAC RESOLUTION #5-2007

A RESOLUTION SUPPORTING THE KROME TRAIL PROJECT AND RECOMMENDING THAT THE TRAIL BE INCLUDED IN THE FINAL FDOT PROJECT DEVELOPMENT AND ENVIRONMENTAL STUDY

WHEREAS, the Miami-Dade Metropolitan Planning Organization (MPO) Governing Board has established the Bicycle/Pedestrian Advisory Committee (BPAC) to advise it on bicycle/pedestrian matters; and

WHEREAS, whereas, the Florida Department of Transportation is developing a Project Development and Environmental study for the Krome Ave widening from SW 296 St to SW 136 St that includes a separate paved path within the project right-of-way;

WHEREAS, the Krome Trail is included in the South Dade Greenways Network Master Plan that was developed by the Redland Conservancy and adopted by the Miami-Dade MPO as part of the bicycle facilities plan;

NOW THEREFORE, BE IT RESOLVED BY THE BICYCLE/PEDESTRIAN ADVISORY COMMITTEE OF THE METROPOLITAN PLANNING ORGANIZATION FOR THE MIAMI URBANIZED AREA: the BPAC supports the Krome Trail project and recommends that the trail be included in the final FDOT project development and environmental study.

The foregoing resolution was offered by Gabrielle Redfern, who moved its adoption. The motion was seconded by Susan Kairalla, and being put to a vote, the vote was as follows:

Gabrielle Redfern – aye	Larry Thorson – aye	Eric Tullberg – aye
Susan Kairalla – aye	Ted Silver – aye	Jorge Quadreny – aye

The Chair thereupon declared the resolution duly passed and adopted this 21st day of March, 2007.

BICYCLE/PEDESTRIAN ADVISORY COMMITTEE (BPAC)

BY David Henderson

David Henderson, BPAC Secretariat

Post-it® Fax Note 7671	Date 3/22/7 # of pages ▶ 1
To Julio Boucle	From DAVID H.
Co./Dept. URS	Co. MPO
Phone #	Phone # 375-1647
Fax # 305-261-4017	Fax #

CITY OF FLORIDA CITY, FLORIDA
RESOLUTION NUMBER 09-03

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF FLORIDA CITY IN OPPOSITION TO THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION PLANS AND THEIR EFFORTS TO DESIGN AND BUILD A LIMITED ACCESS, HIGH SPEED INTRASTATE HIGHWAY BETWEEN SW 328TH STREET AND US HIGHWAY 1 IN FLORIDA CITY; PROVIDING AN EFFECTIVE DATE.

WHEREAS, The City of Florida City is at the southern end of the peninsula and Krome Avenue terminates at the southern edge of the City; and

WHEREAS, Krome Avenue in Florida City is used by families as a convenient transportation corridor as they are traveling from one part of the City to another; and

WHEREAS, Krome Avenue in Florida City is used by local agriculture interests to access the State Farmers' Market on a continuing basis, and

WHEREAS, Krome Avenue carries very little non-local traffic in a northward direction from its intersection with US 1 to SW 328th Street, and

WHEREAS, Krome Avenue carries very little non-local traffic in a southward direction from SW 328th Street to US1, except for the slow-moving agriculture trucking interests accessing the State Farmers' Market; and

WHEREAS, a limited access, high-speed Florida Intrastate Highway System Krome Avenue corridor is not in the best interest of the citizens and agriculture community of South Miami-Dade County, and

WHEREAS, the City has requested relief in the form of design changes from the Department of Transportation and only a few design changes have been shown to us, and

WHEREAS, the City is very concerned that the design will be completed by the Department of Transportation with insufficient modifications to address our issues.

NOW, THEREFORE BE IT RESOLVED BY THE MAYOR AND THE CITY COMMISSION OF THE CITY OF FLORIDA CITY, FLORIDA THAT:

Section 1: The City of Florida City wishes to go on record in opposition to the design last presented to the City by the State of Florida Department of Transportation that includes raised medians limiting left turns onto and from Krome Avenue. On May 7, 2008, at a public meeting in Florida City, the design presented to merchants and property owners showed

RESOLUTION NO: 09-03

no raised medians except for stacking lanes at intersections. The City is opposed to all medians and requests that the final design incorporate no raised medians.

Section 2: The City requests that the Department of Transportation reclassify the section of Krome Avenue between US 1 and SW 328th Street to a classification level that allows four lanes with an open center right and left turn lane. Krome Avenue in Florida City should not be a high-speed, limited access highway.

Section 3: This Resolution shall take effect immediately upon adoption.

PASSED AND ADOPTED by the Mayor and Commission of the City of Florida City on the **27TH DAY OF JANUARY, 2009.**

OTIS T. WALLACE, MAYOR

ATTEST:

JENNIFER A. EVELYN, CITY CLERK

STATE OF FLORIDA
COUNTY OF MIAMI-DADE
I, Jennifer A. Evelyn
City Clerk
Of the City of Florida City, Florida do hereby certify that the above and foregoing is a true and correct copy of the original thereof on file in this office.
WITNESS, my hand and the seal of said City
this 28th day of Jan AD 2009
By:

Approved as to form and legal sufficiency:

REGINE MONESTIME, CITY ATTORNEY

RESOLUTION NO: 09-03

Motion to adopt by Comm. Berry****** **seconded by** Comm. Butler********

FINAL VOTE AT ADOPTION

Mayor Otis T. Wallace	Yes
Vice Mayor Daurell Dorsett	Absent
Commissioner Eugene D. Berry	Yes
Commissioner Sharon Butler	Yes
Commissioner R. S. Shiver	Yes

APPENDIX D

High Crash Segment Lists

FLORIDA DEPARTMENT OF TRANSPORTATION
HIGH CRASH ROADWAY SEGMENTS FOR 1999

NUMB	COSECSUB	BMP	EMP	ROAD	LNGTH	SYSTEM	LANES	CRASHS	ADT	ACTUAL	CRITICAL	RATIO	FTL	INJ	PRTY	TOTAL	98	97
60	87150000	5.342	8.323	S 997	2.981	FAP R	2	32	12,078	2.435	1.016	2.396	1	46	9	$7004800	87	88
47	87150000	8.385	11.086	S 997	2.701	FAP R	2	33	12,257	2.730	1.028	2.655	1	32	14	$7223700	85	99
46	87150000	11.539	14.395	S 997	2.856	FAP R	2	16	10,900	1.408	1.038	1.356	0	19	5	$3502400	88	00

HIGH CRASH ROADWAY SEGMENTS FOR 2000

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
409	87150000	3.693	4.093	SR 997	0.400	S-2UN	9	13,701	4.499	1.308	99.99	0	9	3			
266	87150000	9.737	10.001	SR 997	0.264	R-2DP	10	14,299	7.257	1.341	99.99	0	9	5			
138	87150000	13.701	14.201	SR 997	0.500	R-2UN	15	12,200	6.737	0.621	99.99	4	34	2			

HIGH CRASH ROADWAY SEGMENTS FOR 2001

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
354	87150000	9.737	10.001	SR 997	0.264	R-2DP	10	14,599	7.108	1.566	99.99	0	8	3			
454	87150000	10.733	11.001	SR 997	0.268	R-2DP	8	14,561	5.616	1.566	99.99	0	6	4			
149	87150000	11.801	12.101	SR 997	0.300	R-2UN	11	14,500	6.928	0.641	99.99	2	15	2			
150	87150000	13.701	14.101	SR 997	0.400	R-2UN	14	14,500	6.613	0.641	99.99	0	14	6			

HIGH CRASH ROADWAY SEGMENTS FOR 2002

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
551	87150000	4.247	4.446	SR 997	0.199	S-2DP	8	16,200	6.798	2.490	99.90	1	12	2			
401	87150000	7.737	7.990	SR 997	0.253	R-2DP	9	16,463	5.920	1.543	99.99	0	3	7			

HIGH CRASH ROADWAY SEGMENTS FOR 2003

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
349	87150000	3.693	4.093	SR 997	0.400	S-2UN	12	15,933	5.158	1.262	99.99	0	8	5			
310	87150000	6.720	6.976	SR 997	0.256	R-2DP	11	16,000	7.357	1.521	99.99	0	7	9			
410	87150000	7.737	7.990	SR 997	0.253	R-2DP	9	16,263	5.992	1.521	99.99	0	17	2			
387	87150000	10.733	11.001	SR 997	0.268	R-2DP	10	16,169	6.322	1.521	99.99	0	7	5			
197	87150000	13.701	14.101	SR 997	0.400	R-2UN	11	15,500	4.860	0.608	99.99	0	18	4			

HIGH CRASH ROADWAY SEGMENTS FOR 2004

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
494	87150000	3.693	4.093	SR 997	0.400	S-2UN	9	17,898	3.444	1.119	99.99	0	8	3			
483	87150000	4.247	4.446	SR 997	0.199	S-2DP	10	18,399	7.482	2.487	99.99	0	11	5			
431	87150000	5.342	5.547	SR 997	0.205	R-2DP	9	18,400	6.536	1.782	99.99	0	17	2			
563	87150000	8.750	8.993	SR 997	0.243	R-2DP	8	19,600	4.601	1.782	99.75	0	6	5			
192	87150000	9.737	10.001	SR 997	0.264	R-2DP	19	19,600	10.060	1.782	99.99	0	16				

HIGH CRASH ROADWAY SEGMENTS FOR 2005

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
500	87150000	5.707	5.962	SR 997	0.255	R-2DP	8	15,300	5.617	1.757	99.99	0	6	4			
501	87150000	6.720	6.976	SR 997	0.256	R-2DP	8	15,300	5.595	1.757	99.99	0	8	4			
400	87150000	7.737	7.990	SR 997	0.253	R-2DP	10	15,212	7.118	1.757	99.99	0	5	8			
227	87150000	9.737	10.001	SR 997	0.264	R-2DP	15	15,100	10.309	1.757	99.99	0	9	9			
201	87150000	10.733	11.001	SR 997	0.268	R-2DP	16	15,100	10.832	1.757	99.99	0	6	11			

HIGH CRASH ROADWAY SEGMENTS FOR 2006

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
586	87150000	6.720	6.976	SR 997	0.256	R-2DP	8	17,400	4.920	2.777	95.00	0	5	3			
470	87150000	7.737	7.990	SR 997	0.253	R-2DP	10	17,794	6.085	2.777	99.50	0	9	4			
495	87150000	8.718	9.050	SR 997	0.332	R-2DP	12	18,299	5.411	2.777	99.00	0	8	7			
516	87150000	9.737	10.085	SR 997	0.348	R-2DP	12	18,299	5.162	2.777	99.00	0	2	10			
391	87150000	10.891	11.086	SR 997	0.195	R-2DP	9	16,448	7.687	2.777	99.95	0	6	4			

HIGH CRASH ROADWAY SEGMENTS FOR 2007

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
490	87150000	7.737	7.990	SR 997	0.253	R-2DP	9	17,126	5.690	2.790	99.00	0	4	6			
225	87150000	9.737	10.085	SR 997	0.348	R-2DP	19	17,799	8.404	2.790	99.99	0	12	11			
211	87150000	10.891	11.086	SR 997	0.195	R-2DP	13	17,020	10.731	2.790	99.99	0	8	8			

HIGH CRASH ROADWAY SEGMENTS FOR 2008

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
222	87150000	3.763	3.956	SR 997	0.193	S-2DP	11	17,198	9.079	2.028	99.99	0	13	4			
483	87150000	4.169	4.513	SR 997	0.344	S-2DP	9	16,999	4.216	2.028	99.00	1	11	1			
580	87150000	5.707	5.962	SR 997	0.255	R-2DP	8	16,999	5.056	2.977	95.00	0	8	4			
439	87150000	9.737	10.085	SR 997	0.348	R-2DP	14	18,399	5.990	2.977	99.75	0	12	6			

HIGH CRASH ROADWAY SEGMENTS FOR 2009

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
295	87150000	3.763	3.956	SR 997	0.193	S-2DP	9	16,930	7.546	2.024	99.99	0	11	5			
448	87150000	7.737	7.990	SR 997	0.253	R-2DP	13	17,201	8.184	3.962	99.75	0	12	6			
253	87150000	9.737	10.085	SR 997	0.348	R-2DP	24	18,099	10.439	3.962	99.99	2	17	9			
560	87150000	10.891	11.086	SR 997	0.195	R-2DP	9	17,905	7.062	3.962	97.50	0	7	5			

HIGH CRASH ROADWAY SEGMENTS FOR 2010

NUMB	COSECSUB	BMP	EMP	STROAD	LENGTH	CC	CRASHES	ADT	ACTUAL	AVERAGE	CONLV	FTL	INJ	PRTY	CL-1	CL-2	CL-3
271	87150000	6.720	6.976	SR 997	0.256	R-2DP	16	15,100	11.339	3.511	99.99	0	17	7			
440	87150000	9.737	10.085	SR 997	0.348	R-2DP	17	18,599	7.195	3.511	99.90	1	14	9			
534	87150000	13.702	14.157	SR 997	0.455	R-2DP	17	16,999	6.021	3.511	99.00	0	26	5			

APPENDIX E

Planning Consistency Form

Planning Requirements for Environmental Document Approvals with Segmented Implementation

Document Information:

Date: 9/10/2014 **Document Type:** FEIS **Document Status:** Final

Project Name: SR 997/SW 177th Avenue/Krome Avenue South **FM #:** 249614-4, 427369-1, 427369-2, 427369-3

Project Limits: From SW 296th Street to SW 136th Street **ETDM #:** 7800

Are the limits consistent with the plans? Yes

Identify MPO(s) (if applicable): Miami-Dade County **Original PD&E FAP#** N/A

Segment Information: From SW 296th Street To SW 136th Street

Segment Limits: **Segment FM #:** 249614-4

Currently Adopted CFP-	COMMENTS
Y/~~N~~	2035 LRTP Page: 4-36,C-35

PHASE	Currently Approved TIP	Currently Approved STIP	TIP[1]/STIP $	TIP/STIP FY	COMMENTS	
Preliminary Engineering (Including PD&E)	Yes	Yes	30,000/32,109 30,000 **60,000/62,109**	2014 2015 **Total**	FY / TIP / STIP <2014 / 2,111,000 / 2,294,653 2014 / 30,000 / 32,109 2015 / 30,000 / 30,000 ***Total / 2,171,000 / 2,356,762**	** **Funding** amounts in FYs 2014 and 2015 are generally consistent between the STIP and the TIP. Prior year FY <2014 funding has been included in summary table to the left to show overall funding for PD&E phase.*

Notes:

1. The funding amounts shown for each phase are from the FY 2014 TIP and the FY 2014 STIP. When a single number is listed, that number is common to both documents.

Segment Information: From SW 296th Street To SW 232nd Street

Segment Limits: **Segment FM #:** 427369-1

Currently Adopted CFP-	COMMENTS
Y/~~N~~	Page: 4-36,C-35 (MPO resolution 25-13 dated July 18, 2013 amended the LRTP to advance the ROW and Construction phases of the project (Page 4-58).

PHASE	Currently Approved TIP	Currently Approved STIP	TIP[1]/STIP $	TIP/STIP FY	COMMENTS[2]	
Preliminary Engineering (Final Design)	Yes	Yes	10,000/15,842 150,000 100,000 **260,000/265,842**	2014 2015 2016 **Total**	FY / TIP / STIP <2014 / 251,000 / 230,383 2014 / 10,000 / 15,842 2015 / 150,000 / 150,000 2016 / 100,000 / 100,000 ***Total / 511,000 / 496,225**	** **Funding** amounts in FYs 2014, 2015, and 2016 are generally consistent between the STIP and the TIP. Prior year FY <2014 funding has been included in summary table to the left to show overall funding for PE phase.*
Railroad & Utilities	Yes	Yes	575,000/575,432 **575,000/575,432**	2017 **Total**	** As can be seen, **total funding** amount is generally consistent between the TIP and STIP.*	
R/W	Yes	Yes	18,808,000 /18,808,307 18,275,000/--,---,--- **37,083,000/18,808,307**	2017 2018 **Total**	FY / TIP / STIP 2017 / 18,808,000 / 18,808,307 >2017 / - / 24,574,711 2018 / 18,275,000 / - >2018 / 6,300,000 / - ***Total / 43,383,000 / 43,383,018**	** As can be seen from summary table, **total funding** amount is generally consistent between the STIP and the TIP considering funding from >2017 and >2018 years respectively.*
Construction	Yes	Yes	--,---,---/--,---,--- --,---,---/--,---,--- **--,---,---/--,---,---**	2017 2018 **Total**	FY / TIP / STIP / TIP_{2015} >2017 / - / 36,877,803 / - >2018 / 36,878,000 / - / - 2019 / - / - / 32,539,000 ***Total / 36,878,000 / 36,877,803 / 32,539,000**	** **Total funding** amount is generally consistent between the STIP and the TIP considering funding for Fys >2017 and >2018 years respectively. As can be seen, funding for construction in the TIP $_{FY\ 2015}$ will be in FY 2019.*

Notes:

1. The funding amounts shown for each phase are from the FY 2014 TIP and the FY 2014 STIP. When a single number is listed, that number is common to both documents.

2. Funding allocated in the recently approved TIP $_{FY\ 2015}$ has been noted where appropriate to help clarify general consistency in funding for that phase. However, it should be noted that the FY 2015 STIP for corresponding period will be available October 1, 2014.

3.It is important to recall that the STIP is a four year document that goes out to FY 2017 and shows >2017 funding for informational purposes only.

Planning Requirements for Environmental Document Approvals with Segmented Implementation

Document Information:					
Date:	9/10/2014	**Document Type:**	**FEIS**	**Document Status:**	**Final**
Project Name:	SR 997/SW 177th Avenue/Krome Avenue South			**FM #:**	249614-4, 427369-1, 427369-2, 427369-3
Project Limits:	From SW 296th Street to SW 136th Street			**ETDM #:**	7800
Are the limits consistent with the plans?	**Yes**				
Identify MPO(s) (if applicable):	Miami-Dade County			**Original PD&E FAP#**	N/A

Segment Information:	From SW 232nd Street To SW 184th Street		
Segment Limits:		**Segment FM #:**	427369-2

Currently Adopted CFP-	**COMMENTS**
Y/~~N~~	Page: 4-36,C-35 (MPO resolution 25-13 dated July 18, 2013 amended the LRTP to advance the ROW and Construction phases of the project (Page 4-58).

PHASE	**Currently Approved TIP**	**Currently Approved STIP**	**TIP[1]/STIP $**	**TIP/STIP FY**	**COMMENTS[2]**	
Preliminary Engineering (Final Design)	Yes	Yes	190,000/196,854 85,000 **275,000/281,854**	2014 2015 **Total**	**FY** / **TIP** / **STIP** <2014 / 163,000 / 180,042 2014 / 190,000 / 196,854 2015 / 85,000 / 85,000 ***Total** / **438,000** / **461,896**	** **Funding** amounts in FYs 2014 and 2015 are generally consistent between the STIP and the TIP. Prior year FY <2014 funding has been included in summary table to the left to show overall funding for PE phase.*
Railroad & Utilities	Yes	Yes	424,000 /424,442 **424,000 /424,442**	2016 **Total**	**FY** / **TIP** / **STIP** 2016 / 424,000 / 424,442 >2018 / 35,000 / 35,000 ***Total** / **459,000** / **459,442**	** **Funding** amounts in FY 2016 are generally consistent between the STIP and the TIP. **Total funding** amount is generally consistent between the STIP and the TIP considering funding from >2018.*
R/W	Yes	Yes	16,638,000/16,637,628 12,800,000 **29,438,000/29,437,628**	2016 2017 **Total**	** As can be seen, **total funding** amount is generally consistent between the TIP and STIP.*	
Construction	Yes	Yes	--,---,---/--,---,--- --,---,---/--,---,--- **--,---,---/--,---,---**	2017 2018 **Total**	**FY** / **TIP** / **STIP** / **TIP_{2015}** >2017 / - / 24,070,904 / - >2018 / 24,071,000 / - / - 2019 / - / - / 21,239,000 ***Total** / **24,071,000** / **24,070,904** / **21,239,000**	** **Total funding** amount is generally consistent between the STIP and the TIP considering funding for FYs >2017 and >2018 years respectively. As can be seen, funding for construction in the TIP $_{FY\ 2015}$ will be in FY 2019.*

Notes:

1. The funding amounts shown for each phase are from the FY 2014 TIP and the FY 2014 STIP. When a single number is listed, that number is common to both documents.

2. Funding allocated in the recently approved TIP $_{FY\ 2015}$ has been noted where appropriate to help clarify general consistency in funding for that phase. However, it should be noted that the FY 2015 STIP for corresponding period will be available October 1, 2014.

3.It is important to recall that the STIP is a four year document that goes out to FY 2017 and shows >2017 funding for informational purposes only.

Planning Requirements for Environmental Document Approvals with Segmented Implementation

Document Information:

Date: 9/10/2014 **Document Type:** FEIS **Document Status:** Final

Project Name: SR 997/SW 177th Avenue/Krome Avenue South **FM #:** 249614-4, 427369-1, 427369-2, 427369-3

Project Limits: From SW 296th Street to SW 136th Street **ETDM #:** 7800

Are the limits consistent with the plans? Yes

Identify MPO(s) (if applicable): Miami-Dade County **Original PD&E FAP#** N/A

Segment Information: From SW 184th Street To SW 136th Street

Segment Limits: **Segment FM #:** 427369-3

Currently Adopted CFP-	COMMENTS
Y/~~N~~	Page: 4-36,C-35 (MPO resolution 25-13 dated July 18, 2013 amended the LRTP to advance the ROW and Construction phases of the project (Page 4-58).

PHASE	Currently Approved TIP	Currently Approved STIP	TIP[1]/STIP $	TIP/STIP FY	COMMENTS[3]
Preliminary Engineering (Final Design)	Yes	Yes	2,100,000/2,106,622 87,000 **2,187,000/2,193,622**	2014 2015 **Total**	FY / TIP / STIP <2014 / 151,000 / 172,218 2014 / 2,100,000 / 2,106,622 2015 / 87,000 / 87,000 ***Total / 2,338,000 / 2,365,840** ** **Funding** amounts in FYs 2014 and 2015 are generally consistent between the STIP and the TIP. Prior year FY <2014 funding has been included in summary table to the left to show overall funding for PE phase.*
Railroad & Utilities	Yes	Yes	438,000/437,706 **438,000/437,706**	2016 **Total**	** As can be seen, **total funding** amount is generally consistent between the TIP and STIP.*
R/W	Yes	Yes	7,867,000/7,866,598 4,400,000 **12,267,000/12,266,598**	2016 2017 **Total**	** As can be seen, **total funding** amount is generally consistent between the TIP and STIP.*
Construction	Yes	Yes	--,---,---/--,---,--- --,---,---/--,---,--- **--,---,---/--,---,---**	2017 2018 **Total**	FY / TIP / STIP / TIP_{2015} >2017 / - / 24,070,904 / - >2018 / 24,071,000 / - / - 2019 / - / - / 23,683,000 ***Total / 24,071,000 / 24,070,904 / 23,683,000** ** **Total funding** amount is generally consistent between the STIP and the TIP considering funding for Fys >2017 and >2018 years respectively. As can be seen, funding for construction in the TIP $_{FY\ 2015}$ will be in FY 2019.*

Notes:

1. The funding amounts shown for each phase are from the FY 2014 TIP and the FY 2014 STIP. When a single number is listed, that number is common to both documents.

2. Funding allocated in the recently approved TIP $_{FY\ 2015}$ has been noted where appropriate to help clarify general consistency in funding for that phase. However, it should be noted that the FY 2015 STIP for corresponding period will be available October 1, 2014.

3.It is important to recall that the STIP is a four year document that goes out to FY 2017 and shows >2017 funding for informational purposes only.

FDOT Preparer's Name: Curlene Thomas **Date:** **Phone #:** 305-470-5408

Preparer's Signature: **Email:** Curlene.Thomas@dot.state.fl.us

***Attach: LRTP, TIP, STIP pages (Also Included: TIP $_{FY\ 2015}$ Pages)**

2035 LRTP Pages

Cost Feasible Plan Amendments [Miami-Dade Long Range Transportation Plan Upate to the Year 2035]

Facility/Corridor	From	To	Description	Priority I 2010-2014	Priority II 2015-2020	Priority III 2021-2025	Priority IV 2026-2035	Date of Amendment/ Resolution No.
FIU UniversityCity Prosperity Project	Along SW 109 Avenue from SW 10 Street to SW 6 Street	Along SR 90/SW 8 Street east of SW 109 Avenue	Pedestrian Overpass	P R C				2/20/2014 1-14
Golden Glades Interchange	SR 826 (EB)	I-95 (NB)	New direct system to system ramp from SR 826 EB to I-95 NB and improvements to Turnpike SB to I-95 SB connection	P	P R C			4/18/2013 23-13
Krome Ave	SW 296 Street	SW 136 Street	Advance 3 project segments		R	C		7/18/2013 25-13

LRTP

2035 LRTP Amendment

MPO RESOLUTION #25-13

RESOLUTION APPROVING AN AMENDMENT TO THE 2035 LONG RANGE TRANSPORTATION PLAN (LRTP) TO ADVANCE FROM PRIORITIES III AND IV TO PRIORITIES II AND III OF THE PLAN THE RIGHT-OF-WAY AND CONSTRUCTION PHASES OF THE KROME AVENUE

WHEREAS, the Interlocal Agreement creating and establishing the Metropolitan Planning Organization (MPO) for the Miami Urbanized Area requires that the MPO provide a structure to evaluate the adequacy of the transportation planning and programming process; and

WHEREAS, the Transportation Planning Council (TPC) has been established and charged with the responsibility and duty of fulfilling the aforementioned functions; and

WHEREAS, the TPC has reviewed the amendment to the 2035 LRTP, made a part hereof, and finds it consistent with the goals and objectives of the Transportation Plan for the Miami Urbanized Area,

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE METROPOLITAN PLANNING ORGANIZATION FOR THE MIAMI URBANIZED AREA, that the attached amendment to the 2035 Long Range Transportation Plan (LRTP) to advance from Priorities III and IV to Priorities II and III of the Plan the right-of-way and construction phases of the Krome Avenue Reconstruction Project Segments is hereby approved.

The adoption of the foregoing resolution was moved by Board Member Lynda Bell. The motion was seconded by Board Member Dennis C. Moss, and upon being put to a vote, the vote was as follows:

Chairwoman Rebeca Sosa-Aye
Vice Chairman Oliver G. Gilbert, III-Aye

Board Member Bruno A. Barreiro	-Aye	Board Member Sally A. Heyman	-Absent
Board Member Steven C. Bateman	-Absent	Board Member Barbara J. Jordan	-Aye
Board Member Lynda Bell	-Aye	Board Member Jean Monestime	-Aye
Board Member Esteban Bovo Jr.	-Aye	Board Member Dennis C. Moss	-Aye
Board Member Matti Herrera Bower	-Aye	Board Member Javier D. Souto	-Aye
Board Member Jose "Pepe" Diaz	-Absent	Board Member Francis Suarez	-Absent
Board Member Audrey M. Edmonson	-Absent	Board Member Xavier L. Suarez	-Absent
Board Member Maritza Gutierrez	-Aye	Board Member Lucie M. Tondreau	-Aye
Board Member Perla Tabares Hantman	-Aye	Board Member Juan C. Zapata	-Aye
Board Member Carlos Hernandez	-Absent		

The Chairperson thereupon declared the resolution duly passed and approved this 18th day of July, 2013.

METROPOLITAN PLANNING ORGANIZATION
M.P.O.

By Zainab Salim
Zainab Salim, Clerk
MPO Secretariat

METROPOLITAN PLANNING ORGANIZATION
MIAMI-DADE COUNTY
FLORIDA
MPO

Request for FY 2035 LRTP Amendment to Advance Three Project Segment for SR 997/Krome Avenue From SW 296 Street to SW 136 Street

Florida Department of Transportation

June 25, 2013

Mrs. Irma San Roman, Interim Director,
Miami-Dade Metropolitan Planning Organization
111 Northwest 1st Street, Suite 920
Miami, Florida 33128

Subject: Amendment to FY 2035 Long Range Transportation Plan (LRTP) to Advance Three SR 997/Krome Avenue Reconstruction Project Segments

Dear Mrs. San Roman,

The Department requests an amendment to the adopted 2035 LRTP to advance the SR 997/Krome Avenue Reconstruction projects which extend from SW 296th Street to SW 136th Street. The project is currently listed in Table 4-10 of the 2035 LRTP as one segment, from SW 296th Street to SW 136th Street as a Priority I for design, Priority III and IV for right-of-way and Priority IV for construction.

The PD&E project extending from SW 296th Street to SW 136th Street has been divided into three project segments: SW 296th Street to SW 232nd Street; SW 232nd Street to SW 184th Street; and SW 184th Street to SW 136th Street. These project segments will address safety deficiencies and provide additional capacity to accommodate future travel demand, and address design deficiencies along the Krome Avenue corridor.

The three project segments are listed in the current FY 2013 Transportation Improvement Program (TIP) with funding for design and right-of-way. The construction phases are beyond the 5-year time period of the TIP (see table below).

FM Number	PHASE	FISCAL YEAR				
		2013-2014	2014-2015	2015-2016	2016-2017	>2017
427369- 1 *SW 296th Street to SW 232nd Street*	Design	$130,000	$150,000			
	R/W				$17,055,000	$23,472,000
	Constr.					$36,264,000
427369-2 *SW 232nd Street to SW 184th Street*	Design	$150,000	$200,000			
	R/W			$2,879,000	$25,319,000	$642,000
	Constr.					$23,133,000
FM Number	**PHASE**	**FISCAL YEAR**				
		2013-2014	**2014-2015**	**2015-2016**	**2016-2017**	**>2017**
427369- 3 *SW 184th Street to SW 136th Street*	Design		$280,000			
	R/W				$5,191,000	$4,524,000
	Constr.					$23,910,000
Total Cost for All Segments & Phases						**$163,299,000**

Funding for these project segments is identified in the Department updated Strategic Intermodal System (SIS) plan. The SIS Work Program is a statewide needs based funding plan. In fiscal year 2013, many projects were advanced statewide into the Department's Tentative Work Program from the SIS 2nd Five Year Plan. These projects were able to be advanced due to a number of factors including statewide bid savings, reduction of cost estimates and reduction in the overall SIS contingency levels. As a result, the three segments of SR 997/Krome Avenue were able to be advanced into fiscal year 2022 of the SIS 2nd Five Year Plan. These segments of SR 997/Krome Avenue were selected for advancement based upon the demonstrated need for increased safety and mobility on an SIS designated facility.

Approval of the LRTP amendment will advance the project segments to Priority II for right-of-way and to Priority III for construction. It will also reconcile the LRTP with the current TIP and allow the Department to fulfill all necessary federal requirements. No other projects will be negatively affected by this action. The requested change to the LRTP and the current FY 2013 TIP pages for the project segments are attached.

Sincerely,

for Harold Desdunes, P.E.
District Director of Transportation Development

Attachments

cc LeeAnn Jacobs, AICP, Federal Highway Administration
Gus Pego, P.E., Florida Department of Transportation
Debora Rivera, P.E., Florida Department of Transportation
Carl Filer, P.E., Florida Department of Transportation
Aileen Bouclé, AICP, Florida Department of Transportation
Linda Glass Johnson, Florida Department of Transportation
Dat Huynh, P.E., Florida Department of Transportation

Miami-Dade County
Metropolitan Planning Organization (MPO)

LRTP AMENDMENT FORM

Date Submitted: 06/20/2013 **Submitted by:** Harold Desdunes

Project Current LRTP Priority: III & IV **Origin of Request:** FDOT

Project Title: SR 997/Krome Avenue

Project Estimated Cost: $163,299,000.00

Amendment Proposed: Advanced Project segments to priority II for right-of-way and Priority III for Construction.

Change to Existing LRTP Project: Yes **Addition of New LRTP Project:** No

PROJECT AMENDMENT:

Type of Amendment	Funding	X	Time Schedule	X
	Funding Level		Scope of Work	

Amendment Description (brief): Amend 2035 LRTP to advance the Krome Avenue Reconstruction Project which extend from SW 296th Street to SW 136th Street.

Justification for the Amendment: These project segments will address safety deficiencies and provide additional capacity to accommodate future travel demand, and address design deficiencies along Krome Avenue corridor. Funding for this project is identified in the Department's updated Strategic Intermodal System (SIS) plan.

Requested amendment affect other projects	Yes		If yes...	Local	
	No	X		State	

Please, indicate affected projects:		1	
2		3	

Project has been previously amended	Yes		If yes...	Date	
	No	X		MPO Res. #	

Contact Person:	Harold Desdunes, P.E.	Title	Director of Project Development

MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION
2035 Long-Range Transportation Plan (LRTP)

Project Before Amendment

LRTP Page Reference	Facility/Corridor	From	To	Phase	Funding Priority	Description/Comments
4-36	SR 997/Krome Avenue	SW 296th Street	SW 136th Street	Planning & Design,Right of Way and Construction	Priority I,III & IV	Widen to 4 lanes (2 to 4)

Project After Amendment

LRTP Page Reference	Facility/Corridor	From	To	Phase	Funding Priority	Description/Comments
4-36	**FM 427369-1** SR 997/Krome Avenue	SW 296th Street	SW 232nd Street	Right of Way & Construction	Priority II and III	Right of Way Priority II and Construction Priority III.
4-36	**FM 427369-2** SR 997/Krome Avenue	SW 232nd Street	SW 184th Street	Right of Way & Construction	Priority II and III	Right of Way Priority II and Construction Priority III.
4-36	**FM 427369-3** SR 997/Krome Avenue	SW 184th Street	SW 136th Street	Right of Way & Construction	Priority II and III	Right of Way Priority II and Construction Priority III.

Table 4-10 cont'd | Priority II - IV Projects [Miami-Dade 2035 Long Range Transportation Plan]

Facility/Corridor	From	To	Description	Priority/Funding Phase			
				I 2010-2014	II 2015-2020	III 2021-2025	IV 2026-2035
SR 924/Gratigny Parkway Extension (east)	NW 32nd Avenue	I-95	Limited access facility providing E/W mobility to I-95	P	P R	C	C
SR 985/SW 107th Avenue	SW 8th Street	Flagler Street	Widen to 6 lanes (4 to 6)				C
SR 997/Krome Avenue	North of SW 8th Street	Mile post 2.754	Widen to 4 lanes (2 to 4)				C
SR 997/Krome Avenue	SR-5/US-1	SW 328th Street (Lucy Street)	Widen to 4 lanes (2 to 4)				C
SR 997/Krome Avenue	SW 296th Street	SW 136th Street	Widen to 4 lanes (2 to 4)	P		R	R C
SR 997/Krome Truck By-Pass	Along Flagler Avenue/ Civic Court	NW 6th Street	New 2 lanes (Companion project with Krome widening SW 328th Street to SW 296th Street)				C
SR 997/Krome Avenue	SW 328th Street (Lucy Street)	SW 296th Street	Widen to 4 lanes (2 to 4) (Companion project with Krome truck by-pass)				C
SR 997/Krome Avenue	Mile post 2.754	Mile post 5.122	Widen to 4 lanes (2 to 4)				C
SR 997/Krome Avenue	Mile post 5.122	Mile post 8.151	Widen to 4 lanes (2 to 4)				C
SR 997/Krome Avenue	Mile post 8.151	Mile post 10.626	Widen to 4 lanes (2 to 4)				C
SR 997/Krome Avenue	Mile post 10.626	Mile post 14.184	Widen to 4 lanes (2 to 4)				C
SW 72nd Street/Sunset Drive	SW 117th Avenue	SW 157th Avenue	Widen to 6 lanes (4 to 6)				P C
SW 104th Street/Killian Parkway	SW 160th Avenue	SW 167th Avenue	New 4 lanes / Widen to 4 lanes				P R C
SW 157th Avenue	SW 8th Street	SW 42nd Street	New 4 lanes / Widen to 4 lanes				P R C
SW 157th Avenue	SW 184th Street	SW 216th Street	New 2 lanes				P R C
SW 200th Street	US-1	Quail Roost Drive	Widen to 4 lanes (2 to 4)				P C
SW 312th Street/Campbell Drive			Turnpike access ramps (west-to-north and south-to-west)				P C
SW 312th Street/Campbell Drive	SW 152nd Avenue	SW 137th Avenue	Widen to 6 lanes with left turn lanes (4 to 6)				P R C
SW 312th Street/Campbell Drive	NW 14th Avenue SW 176th Avenue	SW 197th Ave HEFT	Widen to 6 lanes (4 to 6)				P R C
US-1 (Busway)	SW 88th Street	Florida City	Additional park-and-ride lots at selected locations		P	R	R C
US-1 (Busway)	SW 88th Street	Florida City	Bus signal priority				P C
West Avenue	North of Lincoln Road	South of 18th Street	New connector bridge	P			P R C

Planning & Design P | Right of Way (ROW) R | Construction C

Appendix B: Miami-Dade LRTP Cost Feasible Projects (Fully Funded and Partially Funded Projects) - cont'd

Facility	From	To	Description	YOE Cost (in millions) by Priority											
				II 2015 - 2020				III 2021 - 2025				IV 2026 - 2035			
				PDE/ Design	ROW	CST	OM	PDE/ Design	ROW	CST	OM	PDE/ Design	ROW	CST	OM
SR 985/SW 107th Avenue	SW 8th Street	Flagler Street	Widen to 6 lanes (4 to 6)											$18.7	
SR 997/Krome Avenue	North of SW 8th Street	Mile post 2.754	Widen to 4 lanes (2 to 4)											$76.3	
SR 997/Krome Avenue	SR-5/US-1	SW 328th Street (Lucy Street)	Widen to 4 lanes (2 to 4)											$43.0	
SR 997/Krome Avenue	SW 296th Street	SW 136th Street	Widen to 4 lanes (2 to 4)						$91.0				$190.4	$130.1	
SR 997/Krome Truck By-Pass	Along Flagler Avenue/ Civic Court	NW 6th Street	New 2 lanes (Companion project with Krome widening SW 328th Street to SW 296th Street)											$28.5	
SR 997/Krome Avenue	SW 328th Street (Lucy Street)	SW 296th Street	Widen to 4 lanes (2 to 4) (Companion project with Krome truck by-pass)											$152.3	
SR 997/Krome Avenue	Mile post 2.754	Mile post 5.122	Widen to 4 lanes (2 to 4)											$48.8	
SR 997/Krome Avenue	Mile post 5.122	Mile post 8.151	Widen to 4 lanes (2 to 4)											$72.8	
SR 997/Krome Avenue	Mile post 8.151	Mile post 10.626	Widen to 4 lanes (2 to 4)											$57.9	
SR 997/Krome Avenue	Mile post 10.626	Mile post 14.184	Widen to 4 lanes (2 to 4)											$82.4	

FM 249614-4

- FY 2014 TIP
- FY 2014 STIP

HIGHWAYS

MPO Project Num:	DT2496144
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	0
Project Length:	10.068
District:	6

Project Description: **SR 997/KROME AVENUE** **FROM SW 296 STREET** **TO SW 136 STREET**

Type of Work: **PD&E/EMO STUDY**

SIS or Non-SIS: **Yes**

		Proposed Funding (in $000s)							
PHASE :	Funding Source	<2014	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	>2018	All Years
Preliminary Engineering	DIH	293	30	30	0	0	0	0	353
Preliminary Engineering	DS	6	0	0	0	0	0	0	6
Preliminary Engineering	DDR	1,632	0	0	0	0	0	0	1,632
Preliminary Engineering	DS	180	0	0	0	0	0	0	180
	Total	2,111	30	30	0	0	0	0	2,171

RESPONSIBLE AGENCY: **Managed by FDOT**

TOTAL ALL Years ALL Phases: 2,172

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
STIP REPORT
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HIGHWAYS
==========

DATE RUN: 07/24/2013
TIME RUN: 13.14.15
MBRSTIP-1

ITEM NUMBER:249614 4 PROJECT DESCRIPTION:SR 997/KROME AVENUE FROM SW 296 STREET TO SW 136 STREET *SIS*
DISTRICT:06 COUNTY:MIAMI-DADE TYPE OF WORK:PD&E/EMO STUDY
ROADWAY ID:87150000 PROJECT LENGTH: 10.068MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 0

FUND CODE	LESS THAN 2014	2014	2015	2016	2017	GREATER THAN 2017	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: P D & E / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	1,797,245	0	0	0	0	0	1,797,245
DIH	311,238	32,109	30,000	0	0	0	373,347
DS	180,397	0	0	0	0	0	180,397
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: Managed by FDOT							
DS	5,773	0	0	0	0	0	5,773
TOTAL <N/A>	2,294,653	32,109	30,000	0	0	0	2,356,762
TOTAL 249614 4	2,294,653	32,109	30,000	0	0	0	2,356,762

ITEM NUMBER:249614 7 PROJECT DESCRIPTION:SR 997/KROME AVENUE FROM S.W. 136TH STREET TO SR 94/KENDALL DRIVE *SIS*
DISTRICT:06 COUNTY:MIAMI-DADE TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:87150000 PROJECT LENGTH: 3.511MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	LESS THAN 2014	2014	2015	2016	2017	GREATER THAN 2017	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	154,781	0	0	0	0	0	154,781
DIH	191,962	8,578	0	0	0	0	200,540
DS	352,728	0	0	0	0	0	352,728
PHASE: RIGHT OF WAY / RESPONSIBLE AGENCY: Managed by FDOT							
BNIR	0	496,180	3,654,820	0	0	0	4,151,000
DIH	6,626	163,374	0	0	0	0	170,000
PHASE: RAILROAD & UTILITES / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	800,000	0	0	800,000
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	31,897,836	0	0	31,897,836

FM 427369-1

- FY 2014 TIP
- FY 2014 STIP
- FY 2015 TIP

HIGHWAYS

MPO Project Num:	DT4273691
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	2
Project Length:	3.852
District:	6

Project Description: **SR 997/KROME AVENUE** **FROM SW 296 STREET** **TO SW 232 STREET**

Type of Work: **ADD LANES & RECONSTRUCT** SIS or Non-SIS: **Yes**

PHASE :	Funding Source	Proposed Funding (in $000s) <2014	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	>2018	All Years
Preliminary Engineering	DDR	241	0	50	100	0	0	0	391
Preliminary Engineering	DIH	10	10	100	0	0	0	0	120
RESPONSIBLE AGENCY: **Managed by FDOT**	Total	251	10	150	100	0	0	0	511
Railroad and Utilities	DDR	0	0	0	0	575	0	0	575
RESPONSIBLE AGENCY: **Managed by FDOT**	Total	0	0	0	0	575	0	0	575
Right of Way	DIH	0	0	0	0	1,000	636	200	1,836
Right of Way	DDR	0	0	0	0	16,273	16,739	6,000	39,012
Right of Way	DS	0	0	0	0	1,535	900	100	2,535
RESPONSIBLE AGENCY: **Managed by FDOT**	Total	0	0	0	0	18,808	18,275	6,300	43,383
Construction	ACNP	0	0	0	0	0	0	36,878	36,878
RESPONSIBLE AGENCY: **Managed by FDOT**	Total	0	0	0	0	0	0	36,878	36,878

TOTAL ALL Years ALL Phases: 81,348

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
STIP REPORT
==========
HIGHWAYS
==========

DATE RUN: 07/24/2013
TIME RUN: 13.14.15
MBRSTIP-1

ITEM NUMBER:427369 1 PROJECT DESCRIPTION:SR 997/KROME AVENUE FROM SW 296 STREET TO SW 232 STREET *SIS*
DISTRICT:06 COUNTY:MIAMI-DADE TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:87150000 PROJECT LENGTH: 3.852MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	LESS THAN 2014	2014	2015	2016	2017	GREATER THAN 2017	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	223,225	0	50,000	100,000	0	0	373,225
DIH	7,158	15,842	100,000	0	0	0	123,000
PHASE: RIGHT OF WAY / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	0	0	0	0	16,273,235	21,320,773	37,594,008
DIH	0	0	0	0	1,000,000	836,138	1,836,138
DS	0	0	0	0	1,535,072	2,417,800	3,952,872
PHASE: RAILROAD & UTILITES / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	0	0	0	0	575,432	0	575,432
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	0	0	36,877,803	36,877,803
TOTAL <N/A>	230,383	15,842	150,000	100,000	19,383,739	61,452,514	81,332,478
TOTAL 427369 1	230,383	15,842	150,000	100,000	19,383,739	61,452,514	81,332,478

ITEM NUMBER:427369 2 PROJECT DESCRIPTION:SR 997/KROME AVENUE FROM SW 232 STREET TO SW 184TH ST/EUREKA DR. *SIS*
DISTRICT:06 COUNTY:MIAMI-DADE TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:87150000 PROJECT LENGTH: 3.017MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	LESS THAN 2014	2014	2015	2016	2017	GREATER THAN 2017	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	128,805	90,000	85,000	0	0	0	303,805
DIH	6,146	106,854	0	0	0	0	113,000
DS	45,091	0	0	0	0	0	45,091
PHASE: RIGHT OF WAY / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	0	0	0	15,135,675	8,907,938	0	24,043,613

HIGHWAYS

MPO Project Num:	DT4273691
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	2
Project Length:	3.852
District:	06

Project Description: **SR 997/KROME AVENUE** **FROM SW 296 STREET** **TO SW 232 STREET**

Type of Work: **ADD LANES & RECONSTRUCT** SIS or Non-SIS: **Yes**

Extra Description:

	PHASE :	Funding Source	Proposed Funding (in $000s) <2015	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	>2019	All Years
	PRELIMINARY ENGINEERING	GMR	0	2,600	0	0	0	0	0	2,600
	PRELIMINARY ENGINEERING	DS	20	50	0	0	0	0	0	70
	PRELIMINARY ENGINEERING	DIH	23	100	0	0	0	0	0	123
	PRELIMINARY ENGINEERING	DDR	223	0	100	0	0	0	0	323
RESPONSIBLE AGENCY: **MANAGED BY FDOT**		**Total**	**266**	**2,750**	**100**	**0**	**0**	**0**	**0**	**3,116**
	RAILROAD & UTILITES	DDR	0	0	0	570	0	0	0	570
RESPONSIBLE AGENCY: **MANAGED BY FDOT**		**Total**	**0**	**0**	**0**	**570**	**0**	**0**	**0**	**570**
	RIGHT OF WAY	DDR	0	0	0	14,525	15,000	5,000	3,000	37,525
	RIGHT OF WAY	DIH	0	0	0	818	600	400	0	1,818
	RIGHT OF WAY	DS	0	0	0	1,783	1,500	500	0	3,783
RESPONSIBLE AGENCY: **MANAGED BY FDOT**		**Total**	**0**	**0**	**0**	**17,126**	**17,100**	**5,900**	**3,000**	**43,126**
	CONSTRUCTION	ACNP	0	0	0	0	0	32,539	0	32,539
RESPONSIBLE AGENCY: **MANAGED BY FDOT**		**Total**	**0**	**0**	**0**	**0**	**0**	**32,539**	**0**	**32,539**

Item Segment TOTAL ALL Years ALL Phases: 79,351

Item Number: 427369 **Item TOTAL ALL Years ALL Phases All Segments: 170,666**

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

FM 427369-2

- FY 2014 TIP
- FY 2014 STIP
- FY 2015 TIP

HIGHWAYS

MPO Project Num:	DT4273692
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	2
Project Length:	3.017
District:	6

Project Description: **SR 997/KROME AVENUE** **FROM SW 232 STREET** **TO SW 184TH ST/EUREKA DR.**

Type of Work: **ADD LANES & RECONSTRUCT** SIS or Non-SIS: **Yes**

	PHASE :	Funding Source	Proposed Funding (in $000s) <2014	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	>2018	All Years
	Preliminary Engineering	DS	45	0	0	0	0	0	0	45
	Preliminary Engineering	DDR	108	90	85	0	0	0	0	283
	Preliminary Engineering	DIH	10	100	0	0	0	0	0	110
RESPONSIBLE AGENCY: **Managed by FDOT**		**Total**	**163**	**190**	**85**	**0**	**0**	**0**	**0**	**438**
	Railroad and Utilities	ACNP	0	0	0	0	0	0	35	35
	Railroad and Utilities	DS	0	0	0	424	0	0	0	424
RESPONSIBLE AGENCY: **Managed by FDOT**		**Total**	**0**	**0**	**0**	**424**	**0**	**0**	**35**	**459**
	Right of Way	DIH	0	0	0	549	300	0	0	849
	Right of Way	DDR	0	0	0	16,089	10,000	0	0	26,089
	Right of Way	DS	0	0	0	0	2,500	0	0	2,500
RESPONSIBLE AGENCY: **Managed by FDOT**		**Total**	**0**	**0**	**0**	**16,638**	**12,800**	**0**	**0**	**29,438**
	Construction	ACNP	0	0	0	0	0	0	24,071	24,071
RESPONSIBLE AGENCY: **Managed by FDOT**		**Total**	**0**	**0**	**0**	**0**	**0**	**0**	**24,071**	**24,071**

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

HIGHWAYS

MPO Project Num:	DT4273692
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	2
Project Length:	3.017
District:	6

Project Description: **SR 997/KROME AVENUE** **FROM SW 232 STREET** **TO SW 184TH ST/EUREKA DR.**

Type of Work: **ADD LANES & RECONSTRUCT** SIS or Non-SIS: **Yes**

		Proposed Funding (in $000s)							
PHASE :	Funding Source	<2014	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	>2018	All Years

TOTAL ALL Years ALL Phases: 54,406

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
STIP REPORT
==========
HIGHWAYS
==========

DATE RUN: 07/24/2013
TIME RUN: 13.14.15
MBRSTIP-1

ITEM NUMBER:427369 1 PROJECT DESCRIPTION:SR 997/KROME AVENUE FROM SW 296 STREET TO SW 232 STREET *SIS*
DISTRICT:06 COUNTY:MIAMI-DADE TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:87150000 PROJECT LENGTH: 3.852MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	LESS THAN 2014	2014	2015	2016	2017	GREATER THAN 2017	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	223,225	0	50,000	100,000	0	0	373,225
DIH	7,158	15,842	100,000	0	0	0	123,000
PHASE: RIGHT OF WAY / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	0	0	0	0	16,273,235	21,320,773	37,594,008
DIH	0	0	0	0	1,000,000	836,138	1,836,138
DS	0	0	0	0	1,535,072	2,417,800	3,952,872
PHASE: RAILROAD & UTILITES / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	0	0	0	0	575,432	0	575,432
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	0	0	36,877,803	36,877,803
TOTAL <N/A>	230,383	15,842	150,000	100,000	19,383,739	61,452,514	81,332,478
TOTAL 427369 1	230,383	15,842	150,000	100,000	19,383,739	61,452,514	81,332,478

ITEM NUMBER:427369 2 PROJECT DESCRIPTION:SR 997/KROME AVENUE FROM SW 232 STREET TO SW 184TH ST/EUREKA DR. *SIS*
DISTRICT:06 COUNTY:MIAMI-DADE TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:87150000 PROJECT LENGTH: 3.017MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	LESS THAN 2014	2014	2015	2016	2017	GREATER THAN 2017	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	128,805	90,000	85,000	0	0	0	303,805
DIH	6,146	106,854	0	0	0	0	113,000
DS	45,091	0	0	0	0	0	45,091
PHASE: RIGHT OF WAY / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	0	0	0	15,135,675	8,907,938	0	24,043,613

DIH	0	0	0	548,885	300,000	0	848,885
DS	0	0	0	953,068	3,592,062	0	4,545,130
PHASE: RAILROAD & UTILITES / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	0	0	35,000	35,000
DS	0	0	0	424,442	0	0	424,442
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	0	0	24,070,904	24,070,904
TOTAL <N/A>	180,042	196,854	85,000	17,062,070	12,800,000	24,105,904	54,429,870
TOTAL 427369 2	180,042	196,854	85,000	17,062,070	12,800,000	24,105,904	54,429,870

ITEM NUMBER:427369 3 PROJECT DESCRIPTION:SR 997/KROME AVENUE FROM SW 184 STREET TO SW 136 STREET *SIS*
DISTRICT:06 COUNTY:MIAMI-DADE TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:87150000 PROJECT LENGTH: 3.199MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	LESS THAN 2014	2014	2015	2016	2017	GREATER THAN 2017	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	121,566	0	87,000	0	0	0	208,566
DIH	6,378	106,622	0	0	0	0	113,000
DS	44,274	2,000,000	0	0	0	0	2,044,274
PHASE: RIGHT OF WAY / RESPONSIBLE AGENCY: Managed by FDOT							
DIH	0	0	0	436,664	200,000	0	636,664
DS	0	0	0	7,429,934	4,200,000	0	11,629,934
PHASE: RAILROAD & UTILITES / RESPONSIBLE AGENCY: Managed by FDOT							
DS	0	0	0	437,706	0	0	437,706
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	0	0	24,070,904	24,070,904
TOTAL <N/A>	172,218	2,106,622	87,000	8,304,304	4,400,000	24,070,904	39,141,048
TOTAL 427369 3	172,218	2,106,622	87,000	8,304,304	4,400,000	24,070,904	39,141,048

HIGHWAYS

MPO Project Num:	DT4273692
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	2
Project Length:	3.017
District:	06

Project Description: **SR 997/KROME AVENUE** **FROM SW 232 STREET** **TO SW 184TH ST/EUREKA DR.**

Type of Work: **ADD LANES & RECONSTRUCT** SIS or Non-SIS: **Yes**

Extra Description:

	PHASE :	Funding Source	Proposed Funding (in $000s) <2015	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	>2019	All Years
	PRELIMINARY ENGINEERING	DDR	272	0	0	0	0	0	0	272
	PRELIMINARY ENGINEERING	DIH	83	0	0	0	0	0	0	83
	PRELIMINARY ENGINEERING	DS	45	85	0	0	0	0	0	130
	PRELIMINARY ENGINEERING	GMR	0	1,700	0	0	0	0	0	1,700
RESPONSIBLE AGENCY: **MANAGED BY FDOT**		**Total**	**401**	**1,785**	**0**	**0**	**0**	**0**	**0**	**2,186**
	RAILROAD & UTILITES	ACNP	0	0	0	0	0	35	0	35
	RAILROAD & UTILITES	DS	0	0	420	0	0	0	0	420
RESPONSIBLE AGENCY: **MANAGED BY FDOT**		**Total**	**0**	**0**	**420**	**0**	**0**	**35**	**0**	**455**
	RIGHT OF WAY	DIH	0	0	540	200	100	0	0	840
	RIGHT OF WAY	DS	0	0	561	300	0	0	0	861
	RIGHT OF WAY	DDR	0	0	12,299	10,000	5,200	0	0	27,499
RESPONSIBLE AGENCY: **MANAGED BY FDOT**		**Total**	**0**	**0**	**13,400**	**10,500**	**5,300**	**0**	**0**	**29,200**
	CONSTRUCTION	ACNP	0	0	0	0	0	21,239	0	21,239
RESPONSIBLE AGENCY: **MANAGED BY FDOT**		**Total**	**0**	**0**	**0**	**0**	**0**	**21,239**	**0**	**21,239**

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

HIGHWAYS

MPO Project Num:	DT4273692
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	2
Project Length:	3.017
District:	06

Project Description: **SR 997/KROME AVENUE** **FROM SW 232 STREET** **TO SW 184TH ST/EUREKA DR.**

Type of Work: **ADD LANES & RECONSTRUCT** SIS or Non-SIS: **Yes**

Extra Description:

		Proposed Funding (in $000s)							
PHASE :	Funding Source	<2015	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	>2019	All Years

Item Segment TOTAL ALL Years ALL Phases: 53,080

Item Number: 427369 Item TOTAL ALL Years ALL Phases All Segments: 170,666

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

FM 427369-3

- FY 2014 TIP
- FY 2014 STIP
- FY 2015 TIP

HIGHWAYS

MPO Project Num:	DT4273693
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	2
Project Length:	3.199
District:	6

Project Description: **SR 997/KROME AVENUE** **FROM SW 184 STREET** **TO SW 136 STREET**

Type of Work: **ADD LANES & RECONSTRUCT** SIS or Non-SIS: **Yes**

PHASE :	Funding Source	Proposed Funding (in $000s) <2014	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	>2018	All Years
Preliminary Engineering	DS	44	2,000	0	0	0	0	0	2,044
Preliminary Engineering	DDR	97	0	87	0	0	0	0	184
Preliminary Engineering	DIH	10	100	0	0	0	0	0	110
RESPONSIBLE AGENCY: Managed by FDOT	Total	151	2,100	87	0	0	0	0	2,338
Railroad and Utilities	DS	0	0	0	438	0	0	0	438
RESPONSIBLE AGENCY: Managed by FDOT	Total	0	0	0	438	0	0	0	438
Right of Way	DS	0	0	0	7,430	4,200	0	0	11,630
Right of Way	DIH	0	0	0	437	200	0	0	637
RESPONSIBLE AGENCY: Managed by FDOT	Total	0	0	0	7,867	4,400	0	0	12,267
Construction	ACNP	0	0	0	0	0	0	24,071	24,071
RESPONSIBLE AGENCY: Managed by FDOT	Total	0	0	0	0	0	0	24,071	24,071

TOTAL ALL Years ALL Phases: 39,114

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
STIP REPORT
==========
HIGHWAYS
==========

DATE RUN: 07/24/2013
TIME RUN: 13.14.15
MBRSTIP-1

DIH	0	0	0	548,885	300,000	0	848,885
DS	0	0	0	953,068	3,592,062	0	4,545,130
PHASE: RAILROAD & UTILITES / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	0	0	35,000	35,000
DS	0	0	0	424,442	0	0	424,442
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	0	0	24,070,904	24,070,904
TOTAL <N/A>	180,042	196,854	85,000	17,062,070	12,800,000	24,105,904	54,429,870
TOTAL 427369 2	180,042	196,854	85,000	17,062,070	12,800,000	24,105,904	54,429,870

ITEM NUMBER:427369 3 PROJECT DESCRIPTION:SR 997/KROME AVENUE FROM SW 184 STREET TO SW 136 STREET *SIS*
DISTRICT:06 COUNTY:MIAMI-DADE TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:87150000 PROJECT LENGTH: 3.199MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	LESS THAN 2014	2014	2015	2016	2017	GREATER THAN 2017	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: Managed by FDOT							
DDR	121,566	0	87,000	0	0	0	208,566
DIH	6,378	106,622	0	0	0	0	113,000
DS	44,274	2,000,000	0	0	0	0	2,044,274
PHASE: RIGHT OF WAY / RESPONSIBLE AGENCY: Managed by FDOT							
DIH	0	0	0	436,664	200,000	0	636,664
DS	0	0	0	7,429,934	4,200,000	0	11,629,934
PHASE: RAILROAD & UTILITES / RESPONSIBLE AGENCY: Managed by FDOT							
DS	0	0	0	437,706	0	0	437,706
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: Managed by FDOT							
ACNP	0	0	0	0	0	24,070,904	24,070,904
TOTAL <N/A>	172,218	2,106,622	87,000	8,304,304	4,400,000	24,070,904	39,141,048
TOTAL 427369 3	172,218	2,106,622	87,000	8,304,304	4,400,000	24,070,904	39,141,048

HIGHWAYS

MPO Project Num:	DT4273693
LRTP Ref.:	p. 4-36, C-35*
County:	MIAMI-DADE
Roadway ID:	87150000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	2
Project Length:	3.336
District:	06

Project Description: **SR 997/KROME AVENUE** **FROM SW 184 STREET** **TO SW 136 STREET**

Type of Work: **ADD LANES & RECONSTRUCT** SIS or Non-SIS: **Yes**

Extra Description:

PHASE :	Funding Source	Proposed Funding (in $000s) <2015	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	>2019	All Years
PRELIMINARY ENGINEERING	DDR	972	0	0	0	0	0	0	972
PRELIMINARY ENGINEERING	DIH	83	0	0	0	0	0	0	83
PRELIMINARY ENGINEERING	DS	794	87	0	0	0	0	0	881
RESPONSIBLE AGENCY: MANAGED BY FDOT	Total	1,849	87	0	0	0	0	0	1,936
RAILROAD & UTILITES	DS	0	0	433	0	0	0	0	433
RESPONSIBLE AGENCY: MANAGED BY FDOT	Total	0	0	433	0	0	0	0	433
RIGHT OF WAY	DIH	0	0	230	200	200	0	0	630
RIGHT OF WAY	DS	0	0	3,153	6,300	2,100	0	0	11,553
RESPONSIBLE AGENCY: MANAGED BY FDOT	Total	0	0	3,383	6,500	2,300	0	0	12,183
CONSTRUCTION	DDR	0	0	0	0	0	173	0	173
CONSTRUCTION	ACNP	0	0	0	0	0	23,510	0	23,510
RESPONSIBLE AGENCY: MANAGED BY FDOT	Total	0	0	0	0	0	23,683	0	23,683

Item Segment TOTAL ALL Years ALL Phases: 38,236

Item Number: 427369 **Item TOTAL ALL Years ALL Phases All Segments: 170,666**

*C-35 refers to page from the 2035 LRTP Cost Feasible Project List, which can be found at http://www.miamidade2035transportationplan.com/docs/Miami-Dade2035-FinancialResourcesReportAppB.pdf

APPENDIX F

Design Exception

To: Harold Desdunes, P.E. , District Design Engineer Date: June 20, 2005

Subject: **Design Exception**
Financial Project ID: 249614-4-22-01
County Section Number: 87150 State Road Number: SR-997
Federal Aid Number: TBD
Project Description: SR-997 (Krome Avenue) PD&E Study from SW 296th Street to SW 136th Street
Begin Project MP: 3.827 End Project MP: 13.895
New Construction: Yes RRR: No
Plans Phase: PD&E **X** I __ II__ III__ IV__
Federal Oversight: Yes X No __

A design exception is requested for the following element(s):

(X) Design Speed	( ) Lane Widths	( ) Shoulder Widths	( ) Bridge Widths
( ) Structural Capacity	( ) Vertical Clearance	( ) Grades	( ) Cross Slope
( ) Superelevation	( ) Horizontal Alignment	( ) Vertical Alignment	( ) Stopping Sight Distance
( ) Horizontal Clearance			

Description of the Design Exception / Proposed Criteria

The Environmental Management Office is requesting a design exception for a reduction in the required design speed from 65 mph, as called for in the Plans Preparation Manual, and 60 mph as called for in the 2001 AASHTO Guidelines, to 55 mph. In support of this request, we provide the following information.

1.0 DESCRIPTION

a. Project Description

The FDOT is conducting a PD&E Study for the reconstruction of Krome Avenue from SW 296th Street to SW 136th Street. The project limits run south-north approximately 10 miles and is located in Sections 12, 7, 1 and 6; Township 57S; Sections 36, 31, 25, 30, 24, 19, 13, 18, 12, 7, 1 and 6; Township 56S; Sections 36, 31, 25, 30, 24, 19, 13 and 18; Township 55S; Ranges 38E and 39E (*See Figure 1-Location Map*). The section of Krome Avenue from the intersection of SW 136th Street to the intersection of Okeechobee Road in Miami-Dade County is the subject of another PD&E Study that extends approximately 23 miles.

Krome Avenue is a major north-south rural principal arterial that extends from SR-5/US 1 to SR-25/US 27/Okeechobee Road in Miami-Dade County. The typical section, within the study limits, varies slightly consisting primarily of two lanes, varying in width from 10.5 feet to 12 feet; paved shoulders ranging from no shoulder to five 5 feet wide; and roadside swales. The project proposes to develop and analyze alternatives including a no build alternative, a Transportation System Management (TSM) alternative, and several build alternatives consisting of two, three and four-lane typical sections. All alternatives will look at preserving the rural character of the corridor while providing safety and operational enhancements. The Krome Avenue corridor has been the subject of extensive study and discussion for the past two decades.

The existing design speed is 55 mph and the speed limit is posted at 45 mph along the project study limits. The access management classification within the study limits is class (2) Restrictive with Service Roads.

Krome Avenue is part of the Florida Intrastate Highway System (FIHS). It is an important north/south arterial within Miami-Dade County as well as one of the only three evacuation routes serving the Florida Keys and South Miami-Dade County.

b. Design Criteria

According to Volume I, Chapter 1 of the Plans Preparation Manual, Table 1.9.2, it is the Department's policy to provide a minimum design speed of 65 mph for a Florida Intrastate Highway System (FIHS) facility (*See Appendix A-Standards*).

According to Volume I, Chapter 23 of the Plans Preparation Manual, Table 23.4.1, it is the 2001 AASHTO (page 448) policy to provide a minimum design speed of 60 mph for a rural arterial facility (*See Appendix A-Standards*).

Justification

The following are the reasons for applying for a design speed design exception:

- Controversy of the project – The Krome Avenue corridor has a history of controversy beginning in the mid-1980's when various project phases to four-lane Krome Avenue were listed in the work program. As part the Transportation Improvement Plan (TIP),the project was later adopted by the Miami-Dave Planning Organization (MPO). This action set off a string of controversial meeting and hearings regarding the consistency of the TIP, the Miami-Dave County Comprehensive Development Master Plan (CDMP), and the local government comprehensive plans. As a response to the controversy , the MPO modified their TIP to eliminate the four- laning of the Krome Avenue and in 1997 the FDOT conducted a planning study called the Krome Avenue Action Plan. From this study, a series of alternatives were developed to preserve Krome Avenue as a two (2)-lane roadway. During the Action Plan meetings ,many of the Redland residents were concerned about preserving the rural/agricultural characteristics of the are and about the urbanization that had already occurred. The result of the study was that no consensus and public acceptance for any improvement alternative was ever obtained. For instance some citizens were opposed to any additional two-lane improvements because they felt that Korme Avenue was already improved and additional improvements would add traffic to the area.

- Due to the high-level of controversy associated with the proposed project, the anticipated Class of Action for this segment of Krome Avenue is an Environmental Impact Statement (EIS). An EIS is the highest level of documentation required by the National Environmental Policy Act (NEPA).

- Right of Way (R/W) requirements – By lowering the design speed, the proposed typical section will need less R/W acquisition due a lesser recoverable terrain width (clear zone) requirement.

- Context Sensitivity of the area to community and business impacts – The Krome Avenue corridor represents a unique challenge in balancing the preservation of its rural character, while enhancing motorist and pedestrian's safety along the corridor. There is a need of balancing the often-competing interests, between safety enhancements and rural preservation by the use of Context-Sensitive Design (CSD) principles that are consistent with FDOT's policy regarding Transportation Design for Livable Communities (TDLC). Context-Sensitive Design considers the environmental, scenic, aesthetics, historic and community access for other modes of transportation such as bicycling and walking and the natural resource value of the corridor, while providing for a safe and efficient roadway design. The preservation of the rural character is imperative.

- The characteristics of the area are changing from a rural community to an urban transitional area. Some of the existing land uses are currently in the process of change due to urban sprawl – from agriculture to residential/ commercial. The Miami-Dave County Adopted 2005 and 2015 Land Use Plan shows that the project area is expected to continue its current trend, changing from agriculture to residential /commercial land uses. The development and evaluation of the proposed alternatives must be consistent with the current trend ,safety, mobility and community values.

- The proposed use of CSD at the intersections to minimize R/W acquisition and business impacts.

- Avoidance and minimization of social impacts will be a key issue for the successful completion of the project. Existing land uses along the corridor are predominantly agricultural and low-density residential. Community cohesion is an area of concern because of the potential for right of way impacts to businesses and residential areas along the corridor.

c. Compatibility with Adjacent Sections

The requested design exception is compatible with the design and operations of the adjacent sections as the posted speed will remain the same along the corridor.

2.0 OPERATIONAL IMPACTS

a. Amount and Character of Traffic Using the Facility

The existing daily traffic is approximately 15,000 vehicles per day with a projected 2030 traffic that will range between 25,000 to 55,000 vehicles per day, depending on the proposed alternative (2-lane, 2-lane enhanced or 4-lane). Traffic is a mixture of local, short distance trips and thru traffic (longer trips). The truck percentage is approximately between 8-10% during peak hours and around 17% daily.

b. Effect on Capacity of the Deviation

The proposed design exception would not have any negative effect in the capacity of the facility. The capacity will be driven by the number of signals along the corridor (both existing and future). Please note that even the uninterrupted flow facilities generalized volumes listed in the FDOT LOS Handbook assume a design speed of 50 mph for this type of facilities (*See Appendix A-Standards*).

The existing design speed is 55 mph and the speed limit is posted at 45 mph along the project study limits. With a proposed reduction of the design speed to 55 mph, the posted speed limit will remain the same, 45 mph.

3.0 SAFETY IMPACTS

a. Crash History and Analysis

The most recent five (5) year Crash History and Analysis is provided in Appendix B. The crash locations are identified on the enclosed schematic diagrams (Figure 2A and 2B).

b. Impacts Associated with Proposed Criteria

The design exception is not a factor in the crash history because the roadway is undivided. The proposed improvements will help reduce the head on collisions along the corridor due to the placement of a median. The proposed improvements with the design exception are better than the existing, and the associated potential difference in crashes associated with the reduced design speed cannot be quantified.

4.0 BENEFIT/COST ANALYSIS

The Benefit Cost (B/C) ratio for this request can not be calculated. The only applicable cost is the R/W acquisition estimate. The maintenance cost will be approximately the same for both criteria. The crash reduction cost will not be applicable to the B/C ratio because a lower design speed cannot be quantified or associated with traffic accidents along this corridor. Five alternatives (*See Appendix C-Proposed Alternatives)* were considered; 2-lane enhanced, 3-lane, 4-lane with a depressed median (30' & 40' wide median) and 4-lane with a raised median (30' wide median).

Table 1.0

Costs	Design Criteria	Proposed Criteria	Savings
Construction	Same	Same	$0
R/W	36-foot Recoverable Terrain	30-foot Recoverable Terrain (12 feet less of R/W acquisition)	$9,504,000
Crash Reduction	N/A	N/A	N/A
Maintenance	Same	Same	$0
Total Savings	$9,504,000		

A B/C ratio will not be able to be calculated because the only savings (R/W acquisition) is not related to an annual cost. Business damages and relocations are not calculated into the savings, making the R/W savings even greater. The R/W cost ($15 / square foot) was based on the Krome Avenue intersection improvements project completed as Design-Build during the year 2004.

5.0 CONCLUSIONS AND RECOMMENDATIONS

a. Other Deviations

There is no other design exception presented along the roadway project limits. Due to the existing R/W constraints within the area, a Design Variation will be presented and documented for the required border width and median width of the proposed typical

sections. The proposed border and median widths will minimize R/W acquisition and business damages and will meet AASHTO requirements, but not FDOT PPM requirements. Therefore, a Design Variation will be requested along the roadway project limits.

b. Safety Measures Considered

The proposed improvements will increase roadway capacity, reduce congestion and increase public safety by widening the existing 2-lane undivided rural typical section to a multi-lane facility or to enhance the existing 2-lane typical section along Krome Avenue.

c. Course of Action

While the FDOT and AASHTO design criterias for design speed are not met, the proposed design speed (55 mph) will provide benefits to the Department, local residences and businesses and result in a safer roadway. The purpose of this study is to provide the necessary documentation to establish design requirements and define the conceptual design for improvements through the Krome Avenue South corridor. This study will document the existing conditions information of the facility focusing on the engineering/geometric characteristics, operational elements, and the socio-economic/environmental features to address the various deficiencies and impacts associated with the recommended improvements. A reasonable and feasible alternative will then be recommended for final design and construction.

6.0 BACKGROUND AND SUPPORT INFORMATION

Appendix A – Standards
Appendix B – Crash History and Analysis
Appendix C – Proposed Typical Sections

Prepared and
Recommended By: Julio Boucle, P.E.
Responsible Professional Engineer
P.E. # 47671

Date: 6-30-05

URS Corporation
Consultant Firm

Recommended and
Approved by: _____ Date: _____
Harold Desdunes, P.E.
District Design Engineer

Concurrence: _____ Date: _____
State Roadway Design Engineer

Concurrence: N/A Date: N/A
State Structures Design Engineer

Approved by: _____ Date: _____
FHWA Division Administrator

Concurrence: _____ Date: _____
State Highway Engineer

Appendix A
(Standards)

Table 1.9.1 Design Speed
State Highway System - Non-FIHS Facilities

Facility		Design Speed (mph)
Freeways	Rural	70
	Urban	50 - 70
Arterials	Rural	55 - 70
	Urban	40 - 60
Collectors	Rural	55 - 65
	Urban	35 - 50
TDLC		30 - 40

Table 1.9.2 Minimum Design Speed
Florida Intrastate Highway System Facilities

Facility		Minimum Design Speed (mph)
Interstate and Freeways	Rural and Urban*	70
	Urbanized*	60
Arterials	Rural*	65
	Urban and Urbanized*	50

Note: Design Speeds for FIHS facilities less than the above minimums shall be approved by the State Highway Engineer, following a review by the State Transportation Planner, in accordance with the ***FIHS Procedure (Topic No. 525-030-250).***

*Terms based on definitions contained in ***FIHS Procedure (Topic No. 525-030-250)***.

Table 23.4.1 AASHTO Design Speed (Minimum)

Type Facility	Other Factors	Design Speed (mph)	AASHTO
Freeways	Urban Rural	50 70	pg. 507
Urban Arterials	Major Other	30 30	pg. 72
Rural Arterials	Rolling terrain Level terrain	50 60	pg. 448
Urban Collectors		30	pg. 434
Rural Collectors	Level ADT < 400 ADT 400 - 2000 ADT > 2000 Rolling ADT < 400 ADT 400 - 2000 ADT > 2000	40 50 60 30 40 50	pg. 426, Exh. 6-2
CBD	Major or Minor	30	pg. 434
Ramps	Highway Design Speeds (mph) 30 35 40 45 50 55 60 65 70	 15 18 20 23 25 28 30 30 35	pg. 830
Loop Ramps	150 ft. radius	25	pg. 829
Connections	Direct Semi-Direct	40 30	pg. 829

Two-lane arterials generally have all-weather surfaces and are marked and signed in accordance with the current edition of the *Manual on Uniform Traffic Control Devices* (MUTCD) (**1**).

General Design Considerations

Design Speed

Rural arterials, excepting freeways, should be designed for speeds of 60 to 120 km/h [40 to 75 mph] depending on terrain, driver expectancy and, in the case of reconstruction projects, the alignment of the existing facility. Design speeds in the higher range—100 to 120 km/h [60 to 75 mph]—are normally used in level terrain, design speeds in the midrange—80 to 100 km/h [50 to 60 mph]—are normally used in rolling terrain, and design speeds in the lower range—60 to 80 km/h [40 to 50 mph]—are used in mountainous terrain. Where a lower design speed is used, refer to Chapters 2, 3, and 4 to select appropriate design features.

Design Traffic Volume

Before an existing rural arterial is improved or a new rural arterial is constructed, the design traffic volume should be determined. The first step in determining the design traffic volume is to determine the current average daily traffic (ADT) volume for the roadway; in the case of new construction, the ADT can be estimated. These ADT values should then be projected to the design year, normally 20 years into the future. The design of low-volume rural arterials is normally based on ADT values alone because neither capacity nor intersection operations typically govern the overall operation. Such roadways normally provide free flow under all conditions. By contrast, it is usually appropriate to design high-volume rural arterials using an hourly volume as the design traffic volume. The design hourly volume (DHV) that should generally be used in design is the 30th highest hourly volume of the year, abbreviated as 30 HV, which is typically about 15 percent of the ADT on rural roads. For further information on the determination of design traffic volumes, see the section on "Traffic Characteristics" in Chapter 2.

Levels of Service

Procedures for estimating the traffic operational performance of particular highway designs are presented in the *Highway Capacity Manual* (HCM) (**2**), which also presents a thorough discussion of the level-of-service concept. Although the choice of an appropriate design level of service is left to the highway agency, designers should strive to provide the highest level of service practical and consistent with anticipated conditions. Level-of-service characteristics are discussed in Chapter 2 and summarized in Exhibit 2-31. For acceptable degrees of congestion, rural arterials and their auxiliary facilities (i.e., turning lanes, passing sections, weaving sections, intersections, and interchanges) should generally be designed for level-of-service B, except in mountainous areas where level-of-service C is acceptable.

TABLE 4 - 1
GENERALIZED **ANNUAL AVERAGE DAILY** VOLUMES FOR FLORIDA'S **URBANIZED AREAS***

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	2,000	7,000	13,800	19,600	27,000
4	Divided	20,400	33,000	47,800	61,800	70,200
6	Divided	30,500	49,500	71,600	92,700	105,400

STATE TWO-WAY ARTERIALS

Class I (>0.00 to 1.99 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	4,200	13,800	16,400	16,900
4	Divided	4,800	29,300	34,700	35,700	***
6	Divided	7,300	44,700	52,100	53,500	***
8	Divided	9,400	58,000	66,100	67,800	***

Class II (2.00 to 4.50 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	1,900	11,200	15,400	16,300
4	Divided	**	4,100	26,000	32,700	34,500
6	Divided	**	6,500	40,300	49,200	51,800
8	Divided	**	8,500	53,300	63,800	67,000

Class III (more than 4.5 signalized intersections per mile and not within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	5,300	12,600	15,500
4	Divided	**	**	12,400	28,900	32,800
6	Divided	**	**	19,500	44,700	49,300
8	Divided	**	**	25,800	58,700	63,800

Class IV (more than 4.5 signalized intersections per mile and within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	5,200	13,700	15,000
4	Divided	**	**	12,300	30,300	31,700
6	Divided	**	**	19,100	45,800	47,600
8	Divided	**	**	25,900	59,900	62,200

NON-STATE ROADWAYS

Major City/County Roadways

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	9,100	14,600	15,600
4	Divided	**	**	21,400	31,100	32,900
6	Divided	**	**	33,400	46,800	49,300

Other Signalized Roadways
(signalized intersection analysis)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	4,800	10,000	12,600
4	Divided	**	**	11,100	21,700	25,200

Source: Florida Department of Transportation 02/22/02
Systems Planning Office
605 Suwannee Street, MS 19
Tallahassee, FL 32399-0450
http://www11.myflorida.com/planning/systems/sm/los/default.htm

FREEWAYS

Interchange spacing ≥ 2 mi. apart

Lanes	Level of Service A	B	C	D	E
4	23,800	39,600	55,200	67,100	74,600
6	36,900	61,100	85,300	103,600	115,300
8	49,900	82,700	115,300	140,200	156,000
10	63,000	104,200	145,500	176,900	196,400
12	75,900	125,800	175,500	213,500	237,100

Interchange spacing < 2 mi. apart

Lanes	Level of Service A	B	C	D	E
4	22,000	36,000	52,000	67,200	76,500
6	34,800	56,500	81,700	105,800	120,200
8	47,500	77,000	111,400	144,300	163,900
10	60,200	97,500	141,200	182,600	207,600
12	72,900	118,100	170,900	221,100	251,200

BICYCLE MODE

(**Note**: Level of service for the bicycle mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of bicyclists using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/ Bicycle Lane Coverage	Level of Service A	B	C	D	E
0-49%	**	**	3,200	13,800	>13,800
50-84%	**	2,500	4,100	>4,100	***
85-100%	3,100	7,200	>7,200	***	***

PEDESTRIAN MODE

(**Note:** Level of service for the pedestrian mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of pedestrians using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-49%	**	**	**	6,400	15,500
50-84%	**	**	**	9,900	19,000
85-100%	**	2,200	11,300	>11,300	***

BUS MODE (Scheduled Fixed Route)

(Buses per hour)

(**Note:** Buses per hour shown are only for the **peak hour** in the **single direction** of the higher traffic flow.)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-84%	**	>5	≥4	≥3	≥2
85-100%	>6	>4	≥3	≥2	≥1

ARTERIAL/NON-STATE ROADWAY ADJUSTMENTS

DIVIDED/UNDIVIDED

(alter corresponding volume by the indicated percent)

Lanes	Median	Left Turns Lanes	Adjustment Factors
2	Divided	Yes	+5%
2	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE-WAY FACILITIES

Decrease corresponding two-directional volumes in this table by 40% to obtain the equivalent one directional volume for one-way facilities.

*This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are two-way annual average daily volumes (based on K_{100} factors) for levels of service and are for the automobile/truck modes unless specifically stated. Level of service letter grade thresholds are probably not comparable across modes and, therefore, cross modal comparisons should be made with caution. Furthermore, combining levels of service of different modes into one overall roadway level of service is not recommended. The table's input value defaults and level of service criteria appear on the following page. Calculations are based on planning applications of the Highway Capacity Manual, Bicycle LOS Model, Pedestrian LOS Model and Transit Capacity and Quality of Service Manual, respectively for the automobile/truck, bicycle, pedestrian and bus modes.

**Cannot be achieved using table input value defaults.

***Not applicable for that level of service letter grade. For automobile/truck modes, volumes greater than level of service D become F because intersection capacities have been reached. For bicycle and pedestrian modes, the level of service letter grade (including F) is not achievable, because there is no maximum vehicle volume threshold using table input value defaults.

TABLE 4 - 1 (continued)

GENERALIZED **ANNUAL AVERAGE DAILY** VOLUMES FOR FLORIDA'S

Urbanized Areas

INPUT VALUE ASSUMPTIONS

	UNINTERRUPTED FLOW FACILITIES			
	Freeways		Highways	
ROADWAY CHARACATERISTICS	Class III	Class IV		
Number of through lanes	4 - 12	4 - 12	2	4 - 6
Posted speed (mph)	65	55	50	50
Free flow speed (mph)	70	60	55	55
Basic segment length (mi)	1.5	0		
Interchange spacing per mile	2.5	1		
Median (n,y)			n	y
Left turn lanes (n,y)			y	y
Terrain (r,l)	l	l	l	l
% no passing zone			80	
Passing lanes (n,y)			n	
TRAFFIC CHARACTERISTICS				
Planning analysis hour factor (K)	0.097	0.093	0.095	0.095
Directional distribution factor (D)	0.55	0.55	0.55	0.55
Peak hour factor (PHF)	0.95	0.95	0.925	0.925
Base capacity (pcphpl)			1700	2100
Heavy vehicle percent	6.0	4.0	2.0	2.0
Local adjustment factor	0.98	1.00	1.0	1.0

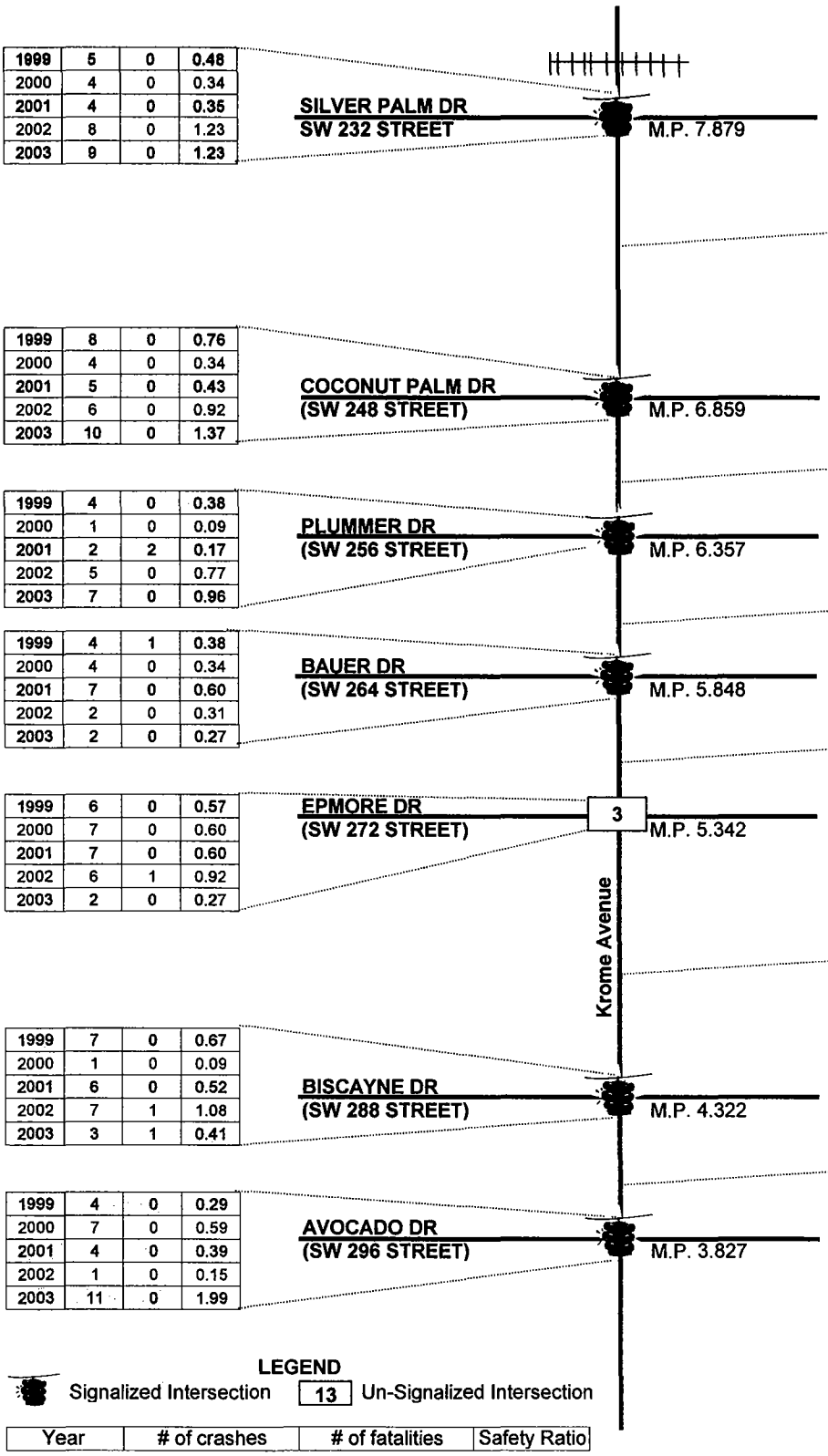
	INTERRUPTED FLOW FACILITIES																	
	State Arterials												Non-State Roadways			Bicycle	Pedestrian	Bus
ROADWAY CHARACTERISTICS	Class I			Class II			Class III			Class IV			Major City/County		Other Signalized	Class II	Class II	
Number of through lanes	2	4 - 6	8	2	4 – 6	8	2	4 - 6	8	2	4 – 6	8	2	4 - 6	2 - 4	4	4	
Posted speed (mph)	45	50	50	45	45	45	35	35	35	30	30	30	45	45		40	40	
Free flow speed (mph)	50	55	55	50	50	50	40	40	40	35	35	35	50	50		45	45	
Median type (n,nr,r)	N	r	r	n	r	r	n	r	r	n	r	r	n	r		r	r	
Left turn lanes (n,y)	Y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	
Paved shoulder/bicycle lane (n,y)																n,50%,y	n	
Outside lane width (n,t,w)																t	t	
Pavement condition (u,t,d)																t		
Sidewalk (n,y)																	n,50%,y	n,y
Sidewalk/roadway separation (a,t,w)																	t	
Sidewalk/roadway protective barrier (n,y)																	n	
Obstacle to bus stop (n,y)																		n
TRAFFIC CHARACTERISTICS																		
Planning analysis hour factor (K)	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	
Directional distribution factor (D)	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	
Peak hour factor (PHF)	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	0.925	
Base saturation flow rate (pcphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Heavy vehicle percent	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	2.0	2.0	
Local adjustment factor	1.0	1.0	0.95	0.98	0.98	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.98	0.98	0.95	0.98	0.98	
% turns from exclusive turn lanes	12	12	12	12	12	12	12	12	12	12	12	12	14	14	16	12	12	
Bus span of service																		15
CONTROL CHARACTERISTICS																		
Signalized intersections per mile	1.5	1.0	1.0	3.0	3.0	3.0	5.0	5.0	5.0	8.0	8.0	8.0	3.0	3.0		3.0	3.0	
Arrival type (1-6)	3	3	3	4	4	4	4	4	4	4	4	4	4	4	3	4	4	
Signal type (a,s,f)	a	a	a	s	s	s	s	s	s	s	s	s	s	s	s	s	s	
Cycle length (C)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	
Effective green ratio (g/C)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.41	0.41	0.31	0.44	0.44	

LEVEL OF SERVICE THRESHOLDS

	Freeways				Highways			State Two-Way Arterials				Non-State Roadways		Bicycle	Pedestrian	Bus
Level of	Class III		Class IV		Two-Lane	Multilane		Class I	Class II	Class III	Class IV	Major City/County	Other Signalized			
Service	v/c	Density	v/c	Density	% FFS	v/c	Density	ATS	ATS	ATS	ATS	ATS	Control Delay	Score	Score	Buses per hr.
A	≤ 0.32	≤ 11	≤ 0.29	≤ 11	> 0.917	≤ 0.29	≤ 11	> 42 mph	> 35 mph	> 30 mph	> 25 mph	> 35 mph	≤ 10 sec	≤ 1.5	≤ 1.5	> 6
B	≤ 0.53	≤ 18	≤ 0.47	≤ 18	> 0.833	≤ 0.47	≤ 18	> 34 mph	> 28 mph	> 24 mph	> 19 mph	> 28 mph	≤ 20 sec	≤2.5	≤ 2.5	> 4
C	≤ 0.74	≤ 26	≤ 0.68	≤ 26	> 0.750	≤ 0.68	≤ 26	> 21 mph	> 22 mph	> 18 mph	> 13 mph	> 22 mph	≤ 35 sec	≤3.5	≤ 3.5	≥ 3
D	≤ 0.90	≤ 35	≤ 0.88	≤ 35	> 0.667	≤ 0.88	≤ 35	> 21 mph	> 17 mph	> 14 mph	> 9 mph	> 17 mph	≤ 55 sec	≤ 4.5	≤ 4.5	≥ 2
E	≤ 1.00	≤ 45	≤ 1.00	≤ 45	> 0.583	≤1.00	≤ 41	> 16 mph	> 13 mph	> 10 mph	> 7 mph	> 13 mph	≤ 80 sec	≤ 5.5	≤ 5.5	≥ 1
F	> 1.00	> 45	> 1.00	> 45	≤ 0.583	>1.00	> 41	≤ 16 mph	≤ 13 mph	≤ 10 mph	≤ 7 mph	≤ 13 mph	> 80 sec	> 5.5	> 5.5	< 1

v/c = Demand to Capacity Ratio % FFS = Percent Free Flow Speed ATS = Average Travel Speed

Appendix B
(Crash History and Analysis)



1999	5	0	0.48
2000	4	0	0.34
2001	4	0	0.35
2002	8	0	1.23
2003	9	0	1.23

1999	1	0	0.20
2000	2	0	0.36
2001	7	0	1.28
2002	2	0	0.35
2003	3	0	0.47

1999	8	0	0.76
2000	4	0	0.34
2001	5	0	0.43
2002	6	0	0.92
2003	10	0	1.37

1999	2	0	0.80
2000	0	0	-
2001	1	0	0.36
2002	3	0	1.05
2003	1	0	0.31

1999	4	0	0.38
2000	1	0	0.09
2001	2	2	0.17
2002	5	0	0.77
2003	7	0	0.96

1999	1	0	0.40
2000	1	0	0.36
2001	1	0	0.36
2002	3	0	1.04
2003	0	0	-

1999	4	1	0.38
2000	4	0	0.34
2001	7	0	0.60
2002	2	0	0.31
2003	2	0	0.27

1999	0	0	-
2000	0	0	-
2001	0	0	-
2002	1	0	0.35
2003	1	2	0.31

1999	6	0	0.57
2000	7	0	0.60
2001	7	0	0.60
2002	6	1	0.92
2003	2	0	0.27

1999	2	0	0.40
2000	4	1	0.73
2001	5	0	0.92
2002	4	0	0.71
2003	4	0	0.63

1999	7	0	0.67
2000	1	0	0.09
2001	6	0	0.52
2002	7	1	1.08
2003	3	1	0.41

1999	3	0	1.22
2000	3	0	1.10
2001	1	0	0.37
2002	0	0	-
2003	2	0	0.63

1999	4	0	0.29
2000	7	0	0.59
2001	4	0	0.39
2002	1	0	0.15
2003	11	0	1.99

LEGEND

Signalized Intersection — 13 Un-Signalized Intersection

Year	# of crashes	# of fatalities	Safety Ratio

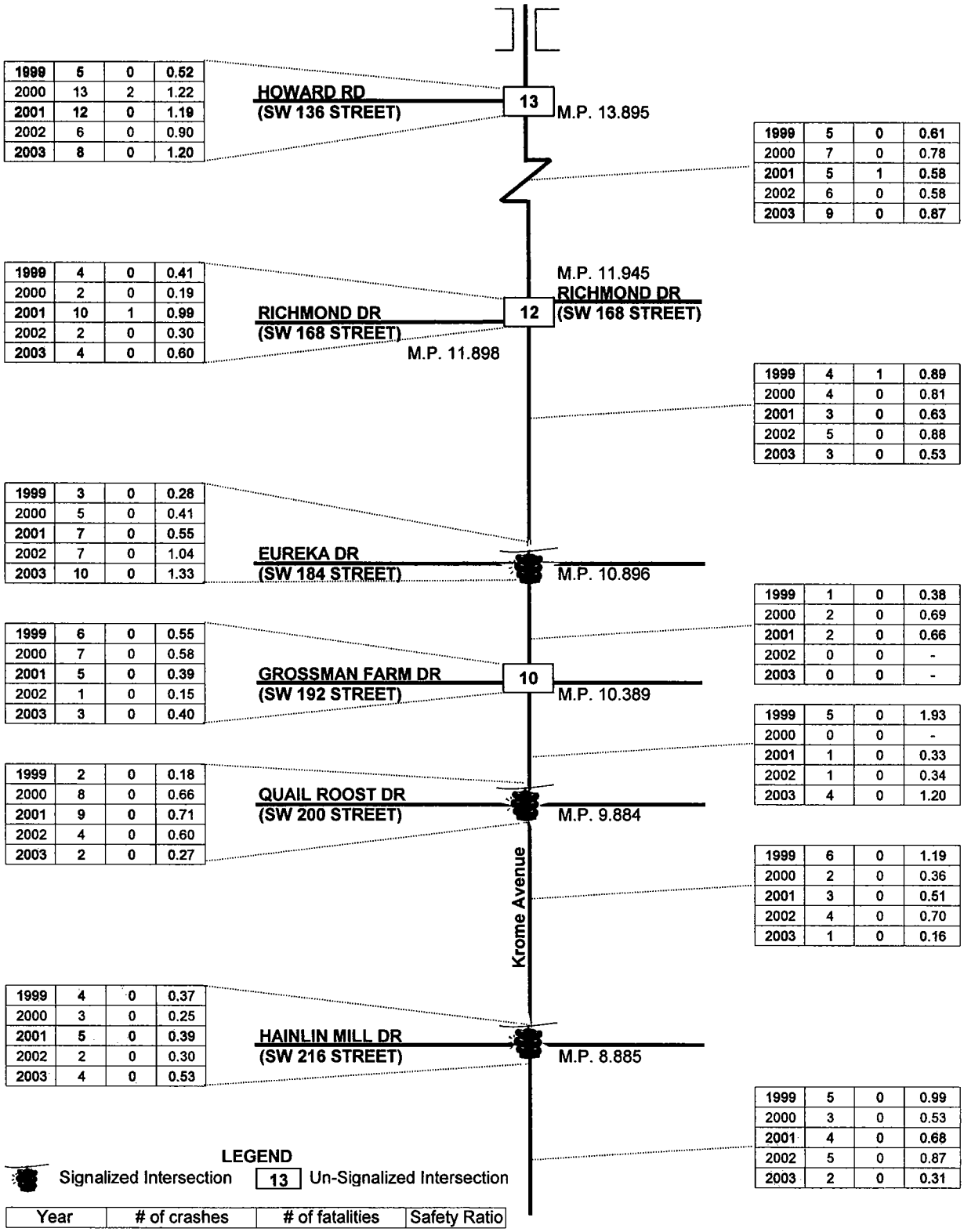
URS

Krome Avenue PD&E Study

Crash Analysis

N

Figure 2A
Not to Scale



Year	# of crashes	# of fatalities	Safety Ratio
1999	5	0	0.52
2000	13	2	1.22
2001	12	0	1.19
2002	6	0	0.90
2003	8	0	1.20

Year	# of crashes	# of fatalities	Safety Ratio
1999	5	0	0.61
2000	7	0	0.78
2001	5	1	0.58
2002	6	0	0.58
2003	9	0	0.87

Year	# of crashes	# of fatalities	Safety Ratio
1999	4	0	0.41
2000	2	0	0.19
2001	10	1	0.99
2002	2	0	0.30
2003	4	0	0.60

Year	# of crashes	# of fatalities	Safety Ratio
1999	4	1	0.89
2000	4	0	0.81
2001	3	0	0.63
2002	5	0	0.88
2003	3	0	0.53

Year	# of crashes	# of fatalities	Safety Ratio
1999	3	0	0.28
2000	5	0	0.41
2001	7	0	0.55
2002	7	0	1.04
2003	10	0	1.33

Year	# of crashes	# of fatalities	Safety Ratio
1999	1	0	0.38
2000	2	0	0.69
2001	2	0	0.66
2002	0	0	-
2003	0	0	-

Year	# of crashes	# of fatalities	Safety Ratio
1999	6	0	0.55
2000	7	0	0.58
2001	5	0	0.39
2002	1	0	0.15
2003	3	0	0.40

Year	# of crashes	# of fatalities	Safety Ratio
1999	5	0	1.93
2000	0	0	-
2001	1	0	0.33
2002	1	0	0.34
2003	4	0	1.20

Year	# of crashes	# of fatalities	Safety Ratio
1999	2	0	0.18
2000	8	0	0.66
2001	9	0	0.71
2002	4	0	0.60
2003	2	0	0.27

Year	# of crashes	# of fatalities	Safety Ratio
1999	6	0	1.19
2000	2	0	0.36
2001	3	0	0.51
2002	4	0	0.70
2003	1	0	0.16

Year	# of crashes	# of fatalities	Safety Ratio
1999	4	0	0.37
2000	3	0	0.25
2001	5	0	0.39
2002	2	0	0.30
2003	4	0	0.53

Year	# of crashes	# of fatalities	Safety Ratio
1999	5	0	0.99
2000	3	0	0.53
2001	4	0	0.68
2002	5	0	0.87
2003	2	0	0.31

URS

Krome Avenue
PD&E Study

Crash
Analysis

N

Figure 2B
Not to Scale

(Segment Analysis)

SW 296 Street to SW 288 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	3.877	to	4.272		
ADT	=	12,000	13,600	13,500	0	16,200
Nearest Node	=	873				
Crash Rate Class Category	=	S-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	0	3	0	0	0
	Head On	0	0	0	0	0
	Angle	1	0	0	0	1
	Left Turn	0	0	0	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	2	0	1	0	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	2	0	1	1	1
	Injury Crashes	1	3	0	0	1
LIGHT CONDITIONS	Daylite	2	2	1	0	2
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	1	1	0	0	0
	Dark (wo/Street Lites)	0	0	0	0	0
	Unknown	0	0	0	0	0
WEATHER	Dry	2	1	0	0	1
	Cloudy	1	2	0	0	1
	Rain	0	0	0	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	2	3	0	0	2
	Wet	1	0	0	0	0
	Others	0	0	1	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	0
	February	1	1	0	0	0
	March	1	0	0	0	0
	April	0	0	0	0	0
	May	0	0	0	0	0
	June	0	0	1	0	0
	July	0	1	0	0	0
	August	0	1	0	0	0
	September	1	0	0	0	0
	October	0	0	0	0	2
	November	0	0	0	0	0
	December	0	0	0	0	0
DAY OF WEEK	Sunday	0	0	0	0	0
	Monday	0	1	0	0	0
	Tuesday	0	0	0	0	0
	Wednesday	0	1	0	0	0
	Thursday	1	0	0	0	2
	Friday	1	0	1	0	0
	Saturday	1	1	0	0	0
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	1	0	0	0	0
	09:00-12:00	0	0	0	0	1
	12:00-15:00	0	1	1	0	1
	15:00-18:00	1	2	0	0	0
	18:00-21:00	0	0	0	0	0
	21:00-24:00	1	0	0	0	0

SW 288 Street to SW 272 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	4.372	to	5.292		
ADT	=	12,000	13,600	13,500	14,100	16,200
Nearest Node	=	874				
Crash Rate Class Category	=	S-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	0	0	0	2
	Head On	0	1	0	0	0
	Angle	0	0	0	3	0
	Left Turn	0	0	1	0	1
	Right Turn	0	0	0	0	0
	Sideswipe	0	1	1	1	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	2	3	0	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	1	2	0	1
	Injury Crashes	1	3	3	4	3
LIGHT CONDITIONS	Daylite	1	2	3	2	3
	Dusk	0	0	0	1	0
	Dawn	0	1	1	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	1	1	1	1	1
	Unknown	0	0	0	0	0
WEATHER	Dry	2	4	3	2	1
	Cloudy	0	0	1	2	2
	Rain	0	0	1	0	1
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	2	4	4	4	3
	Wet	0	0	1	0	1
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	1	1	0	0	0
	February	0	0	0	0	1
	March	1	0	2	0	0
	April	0	0	0	1	0
	May	0	0	1	0	0
	June	0	1	0	1	1
	July	0	1	0	0	0
	August	0	1	0	0	1
	September	0	0	0	1	0
	October	0	0	0	0	0
	November	0	0	2	1	1
	December	0	0	0	0	0
DAY OF WEEK	Sunday	0	0	1	1	1
	Monday	1	1	2	1	0
	Tuesday	0	0	1	0	0
	Wednesday	0	0	0	1	1
	Thursday	1	1	0	1	1
	Friday	0	1	1	0	0
	Saturday	0	1	0	0	1
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	0	2	1	2	2
	09:00-12:00	0	0	0	0	0
	12:00-15:00	1	0	2	1	1
	15:00-18:00	1	0	0	1	0
	18:00-21:00	0	2	2	0	0
	21:00-24:00	0	0	0	0	1

SW 272 Street to SW 264 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	5.392	to	5.798		
ADT	=	0	0	0	14,100	16,200
Nearest Node	=				878	
Crash Rate Class Category	=					

		Number	Number	Number	Number	Number
CRASH TYPE	Rear End	0	0	0	1	0
	Head On	0	0	0	0	0
	Angle	0	0	0	0	0
	Left Turn	0	0	0	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	0	0	0	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	1	1	1	0
	Injury Crashes	0	0	0	0	1
LIGHT CONDITIONS	Daylite	0	0	0	1	0
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	0	0	0	0	1
	Unknown	0	0	0	0	0
WEATHER	Dry	0	0	0	1	0
	Cloudy	0	0	0	0	1
	Rain	0	0	0	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	0	0	0	1	1
	Wet	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	0
	February	0	0	0	0	0
	March	0	0	0	0	0
	April	0	0	0	0	0
	May	0	0	0	0	1
	June	0	0	0	1	0
	July	0	0	0	0	0
	August	0	0	0	0	0
	September	0	0	0	0	0
	October	0	0	0	0	0
	November	0	0	0	0	0
	December	0	0	0	0	0
DAY OF WEEK	Sunday	0	0	0	0	0
	Monday	0	0	0	1	0
	Tuesday	0	0	0	0	0
	Wednesday	0	0	0	0	0
	Thursday	0	0	0	0	0
	Friday	0	0	0	0	1
	Saturday	0	0	0	0	0
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	0	0	0	0	0
	09:00-12:00	0	0	0	0	0
	12:00-15:00	0	0	0	0	0
	15:00-18:00	0	0	0	1	0
	18:00-21:00	0	0	0	0	1
	21:00-24:00	0	0	0	0	0

SW 264 Street to SW 256 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	5.898	to	6.307		
ADT	=	12,000	13,600	13,500	14,100	0
Nearest Node	=	879				
Crash Rate Class Category	=	R-2UN				

		Number	Number	Number	Number	Number
CRASH TYPE	Rear End	0	1	0	0	0
	Head On	0	0	0	0	0
	Angle	0	0	0	1	0
	Left Turn	0	0	0	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	1	0	1	2	0
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	0	0	0	0	1
	Injury Crashes	1	1	1	3	0
LIGHT CONDITIONS	Daylite	0	1	1	1	0
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	1	0	0	2	0
	Unknown	0	0	0	0	0
WEATHER	Dry	0	0	0	1	0
	Cloudy	1	1	1	2	0
	Rain	0	0	0	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	1	1	1	3	0
	Wet	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	0	1	0
	February	0	0	1	0	0
	March	0	1	0	0	0
	April	1	0	0	0	0
	May	0	0	0	0	0
	June	0	0	0	0	0
	July	0	0	0	0	0
	August	0	0	0	0	0
	September	0	0	0	1	0
	October	0	0	0	0	0
	November	0	0	0	0	0
	December	0	0	0	1	0
DAY OF WEEK	Sunday	0	1	1	1	0
	Monday	0	0	0	0	0
	Tuesday	0	0	0	0	0
	Wednesday	0	0	0	0	0
	Thursday	1	0	0	0	0
	Friday	0	0	0	0	0
	Saturday	0	0	0	2	0
HOUR OF DAY	00:00-03:00	0	0	0	1	0
	03:00-06:00	0	0	0	1	0
	06:00-09:00	0	0	0	0	0
	09:00-12:00	0	0	0	0	0
	12:00-15:00	0	1	1	0	0
	15:00-18:00	0	0	0	0	0
	18:00-21:00	0	0	0	0	0
	21:00-24:00	1	0	0	1	0

SW 256 Street to SW 248 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	6.407	to	6.809		
ADT	=	12,000	0	13,500	14,100	16,200
Nearest Node	=	881				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	1	0	0	1	0
	Head On	0	0	0	0	0
	Angle	1	0	0	0	0
	Left Turn	0	0	0	2	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	1	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	0	0	0	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	0	1	1	0	1
	Injury Crashes	2	0	0	3	0
LIGHT CONDITIONS	Daylite	2	0	1	3	0
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	0	0	0	0	1
	Unknown	0	0	0	0	0
WEATHER	Dry	2	0	0	2	1
	Cloudy	0	0	0	1	0
	Rain	0	0	1	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	2	0	0	3	1
	Wet	0	0	1	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	0
	February	1	0	0	1	0
	March	0	0	0	0	0
	April	0	0	0	0	0
	May	0	0	0	0	0
	June	0	0	1	0	0
	July	1	0	0	0	1
	August	0	0	0	1	0
	September	0	0	0	0	0
	October	0	0	0	1	0
	November	0	0	0	0	0
	December	0	0	0	0	0
DAY OF WEEK	Sunday	0	0	1	0	1
	Monday	0	0	0	0	0
	Tuesday	0	0	0	0	0
	Wednesday	1	0	0	0	0
	Thursday	0	0	0	3	0
	Friday	1	0	0	0	0
	Saturday	0	0	0	0	0
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	2	0	0	1	0
	09:00-12:00	0	0	0	2	0
	12:00-15:00	0	0	0	0	0
	15:00-18:00	0	0	0	0	0
	18:00-21:00	0	0	1	0	0
	21:00-24:00	0	0	0	0	1

SW 248 Street to SW 232 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	6.909	to	7.829		
ADT	=	12,000	13,600	13,500	14,100	16,200
Nearest Node	=	5732				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	0	1	1	0	0
	Head On	0	0	0	0	0
	Angle	0	0	1	1	0
	Left Turn	0	0	1	1	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	2	0	1
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	1	1	2	0	2
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	0	0	0	0	2
	Injury Crashes	1	2	7	2	1
LIGHT CONDITIONS	Daylite	0	2	4	2	2
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	2	0	0
	Dark (wo/Street Lites)	1	0	1	0	1
	Unknown	0	0	0	0	0
WEATHER	Dry	0	0	5	0	1
	Cloudy	1	1	2	2	2
	Rain	0	1	0	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	1	1	7	2	3
	Wet	0	1	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	2	0	0
	February	0	0	1	1	0
	March	0	0	0	0	0
	April	0	0	1	0	0
	May	0	0	1	0	0
	June	0	1	1	0	0
	July	0	0	0	0	0
	August	0	0	1	0	1
	September	0	1	0	0	1
	October	0	0	0	0	0
	November	0	0	0	0	1
	December	1	0	0	1	0
DAY OF WEEK	Sunday	1	0	0	0	0
	Monday	0	1	1	1	0
	Tuesday	0	0	2	0	0
	Wednesday	0	1	2	0	0
	Thursday	0	0	0	0	1
	Friday	0	0	1	1	0
	Saturday	0	0	1	0	2
HOUR OF DAY	00:00-03:00	0	0	0	0	1
	03:00-06:00	0	0	0	0	0
	06:00-09:00	0	1	0	2	0
	09:00-12:00	0	0	0	0	0
	12:00-15:00	0	0	3	0	1
	15:00-18:00	0	0	1	0	1
	18:00-21:00	1	1	2	0	0
	21:00-24:00	0	0	1	0	0

SW 232 Street to SW 216 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	7.929	to	8.835		
ADT	=	12,500	14,300	15,100	14,600	16,800
Nearest Node	=	884				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	1	2	3	2
	Head On	0	0	0	0	0
	Angle	1	0	0	0	0
	Left Turn	0	1	1	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	2	1	1	2	0
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	1	0	3	1
	Injury Crashes	4	2	4	2	1
LIGHT CONDITIONS	Daylite	3	2	2	4	0
	Dusk	0	1	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	2	0	2	1	2
	Unknown	0	0	0	0	0
WEATHER	Dry	3	2	2	3	1
	Cloudy	1	1	1	2	0
	Rain	1	0	1	0	1
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	4	3	3	5	1
	Wet	1	0	1	0	1
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	1	0	0
	February	1	0	0	0	0
	March	0	1	0	1	1
	April	1	0	0	2	0
	May	1	1	0	0	1
	June	0	1	1	0	0
	July	0	0	0	0	0
	August	1	0	1	1	0
	September	1	0	1	0	0
	October	0	0	0	1	0
	November	0	0	0	0	0
	December	0	0	0	0	0
DAY OF WEEK	Sunday	0	0	1	1	2
	Monday	1	0	0	0	0
	Tuesday	1	0	0	1	0
	Wednesday	0	0	0	1	0
	Thursday	0	1	2	1	0
	Friday	0	1	0	0	0
	Saturday	3	1	1	1	0
HOUR OF DAY	00:00-03:00	2	0	0	1	1
	03:00-06:00	0	0	1	0	0
	06:00-09:00	0	1	1	0	0
	09:00-12:00	1	0	1	1	0
	12:00-15:00	1	0	0	0	0
	15:00-18:00	1	1	0	1	0
	18:00-21:00	0	1	1	2	0
	21:00-24:00	0	0	0	0	1

SW 216 Street to SW 200 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	8.935	to	9.834		
ADT	=	12,500	14,300	15,100	14,600	16,800
Nearest Node	=	885				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	3	0	1	0	0
	Head On	0	0	0	0	0
	Angle	1	0	0	2	0
	Left Turn	0	1	1	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	1	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	2	1	1	1	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	4	0	2	1	1
	Injury Crashes	2	2	1	3	0
LIGHT CONDITIONS	Daylite	4	1	1	3	1
	Dusk	1	0	1	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	0	1	1	1	0
	Unknown	1	0	0	0	0
WEATHER	Dry	3	2	3	2	1
	Cloudy	2	0	0	2	0
	Rain	0	0	0	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	5	2	3	3	1
	Wet	0	0	0	0	0
	Others	1	0	0	1	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	0
	February	2	0	0	0	0
	March	0	0	0	2	1
	April	0	0	0	0	0
	May	1	0	1	0	0
	June	0	0	0	1	0
	July	0	0	0	0	0
	August	1	0	0	0	0
	September	0	0	0	0	0
	October	0	0	1	0	0
	November	1	0	1	0	0
	December	1	2	0	1	0
DAY OF WEEK	Sunday	0	0	1	3	0
	Monday	2	0	0	0	0
	Tuesday	0	0	0	0	0
	Wednesday	1	0	0	0	0
	Thursday	2	1	2	1	1
	Friday	1	1	0	0	0
	Saturday	0	0	0	0	0
HOUR OF DAY	00:00-03:00	0	0	0	1	0
	03:00-06:00	1	0	1	0	0
	06:00-09:00	1	1	1	0	1
	09:00-12:00	1	0	0	0	0
	12:00-15:00	2	0	0	2	0
	15:00-18:00	0	0	1	0	0
	18:00-21:00	1	1	0	1	0
	21:00-24:00	0	0	0	0	0

SW 200 Street to SW 192 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	9.934	to	10.339		
ADT	=	12,500	0	15,100	14,600	16,800
Nearest Node	=	887				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	0	1	1	3
	Head On	0	0	0	0	0
	Angle	2	0	0	0	1
	Left Turn	0	0	0	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	1	0	0	0	0
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	0	1	1	0	2
	Injury Crashes	5	0	0	1	2
LIGHT CONDITIONS	Daylite	3	0	1	1	1
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	1	0	0	0	1
	Dark (wo/Street Lites)	1	0	0	0	2
	Unknown	0	0	0	0	0
WEATHER	Dry	1	0	1	0	3
	Cloudy	3	0	0	0	1
	Rain	1	0	0	1	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	3	0	1	0	4
	Wet	2	0	0	1	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	1
	February	1	0	1	1	0
	March	0	0	0	0	0
	April	1	0	0	0	1
	May	0	0	0	0	0
	June	0	0	0	0	0
	July	0	0	0	0	0
	August	1	0	0	0	1
	September	0	0	0	0	1
	October	0	0	0	0	0
	November	1	0	0	0	0
	December	1	0	0	0	0
DAY OF WEEK	Sunday	2	0	0	0	0
	Monday	0	0	0	0	1
	Tuesday	2	0	0	0	0
	Wednesday	0	0	0	0	1
	Thursday	0	0	1	0	1
	Friday	0	0	0	0	0
	Saturday	1	0	0	1	1
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	1	0	0	0	1
	06:00-09:00	0	0	1	0	1
	09:00-12:00	2	0	0	0	0
	12:00-15:00	1	0	0	1	0
	15:00-18:00	0	0	0	0	0
	18:00-21:00	1	0	0	0	2
	21:00-24:00	0	0	0	0	0

SW 192 Street to SW 184 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	10.439	to	10.846		
ADT	=	12,500	14,300	15,100	0	0
Nearest Node	=	7189				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	0	1	2	0	0
	Head On	1	0	0	0	0
	Angle	0	0	0	0	0
	Left Turn	0	0	0	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	1	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	0	0	0	0
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	0	1	1	1
	Injury Crashes	0	2	1	0	0
LIGHT CONDITIONS	Daylite	0	1	2	0	0
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	1	1	0	0	0
	Unknown	0	0	0	0	0
WEATHER	Dry	1	1	0	0	0
	Cloudy	0	0	1	0	0
	Rain	0	1	1	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	1	1	1	0	0
	Wet	0	1	1	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	0
	February	0	0	0	0	0
	March	0	0	0	0	0
	April	0	0	0	0	0
	May	0	0	0	0	0
	June	0	0	0	0	0
	July	0	0	1	0	0
	August	0	0	0	0	0
	September	0	1	1	0	0
	October	0	0	0	0	0
	November	0	0	0	0	0
	December	1	1	0	0	0
DAY OF WEEK	Sunday	0	0	0	0	0
	Monday	0	0	0	0	0
	Tuesday	0	1	0	0	0
	Wednesday	0	0	0	0	0
	Thursday	0	0	0	0	0
	Friday	0	0	2	0	0
	Saturday	1	1	0	0	0
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	0	1	0	0	0
	09:00-12:00	0	0	1	0	0
	12:00-15:00	0	0	0	0	0
	15:00-18:00	0	0	1	0	0
	18:00-21:00	0	0	0	0	0
	21:00-24:00	1	1	0	0	0

SW 184 Street to SW 168 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	10.946	to	11.848		
ADT	=	10,900	12,200	11,500	14,500	14,500
Nearest Node	=	890				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	1	1	1	1	2
	Head On	0	0	0	1	0
	Angle	0	2	0	0	1
	Left Turn	1	0	2	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	1	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	1	1	0	3	0
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	3	2	0	3	1
	Injury Crashes	1	2	3	2	2
LIGHT CONDITIONS	Daylite	2	3	1	3	2
	Dusk	0	0	0	1	0
	Dawn	0	0	1	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	2	1	1	1	1
	Unknown	0	0	0	0	0
WEATHER	Dry	3	0	0	3	3
	Cloudy	1	2	2	1	0
	Rain	0	1	1	1	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	4	2	2	4	3
	Wet	0	1	1	0	0
	Others	0	1	0	1	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	1	0	0	0	0
	February	0	0	0	0	0
	March	0	0	0	0	0
	April	1	1	0	0	1
	May	0	0	0	0	0
	June	0	0	0	0	0
	July	0	2	1	1	1
	August	1	1	0	3	0
	September	0	0	0	0	1
	October	1	0	1	0	0
	November	0	0	1	0	0
	December	0	0	0	1	0
DAY OF WEEK	Sunday	0	1	1	0	0
	Monday	1	2	1	1	0
	Tuesday	2	0	0	1	1
	Wednesday	0	0	0	1	1
	Thursday	0	0	1	0	0
	Friday	1	0	0	1	0
	Saturday	0	1	0	1	1
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	1	0	0	0	0
	06:00-09:00	0	0	1	1	0
	09:00-12:00	1	0	0	0	0
	12:00-15:00	0	1	0	1	0
	15:00-18:00	0	2	1	2	2
	18:00-21:00	2	0	1	0	0
	21:00-24:00	0	1	0	1	1

SW 168 Street to SW 136 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	11.995	to	13.845		
ADT	=	10,900	12,200	11,500	14,500	14,500
Nearest Node	=	7424				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	1	0	0	1	0
	Head On	1	1	0	0	3
	Angle	1	0	2	0	1
	Left Turn	1	1	0	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	2	2	2	1
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	1	3	1	3	4
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	3	2	3	1	1
	Injury Crashes	2	5	2	5	8
LIGHT CONDITIONS	Daylite	3	6	2	4	5
	Dusk	1	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	1	0
	Dark (wo/Street Lites)	1	1	3	0	3
	Unknown	0	0	0	1	1
WEATHER	Dry	5	3	2	3	4
	Cloudy	0	2	2	2	3
	Rain	0	1	1	0	2
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	5	5	4	5	6
	Wet	0	1	1	0	3
	Others	0	1	0	1	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	1	0	0	1
	February	0	1	1	1	0
	March	1	1	1	0	1
	April	2	1	0	1	0
	May	0	1	1	0	0
	June	1	0	1	2	2
	July	1	0	0	0	1
	August	0	1	1	0	0
	September	0	1	0	0	2
	October	0	0	0	2	1
	November	0	0	0	0	0
	December	0	0	0	0	1
DAY OF WEEK	Sunday	0	1	3	1	2
	Monday	1	1	0	0	1
	Tuesday	2	1	0	0	2
	Wednesday	1	0	1	0	0
	Thursday	0	0	0	2	2
	Friday	0	0	1	1	1
	Saturday	1	4	0	2	1
HOUR OF DAY	00:00-03:00	0	0	1	1	1
	03:00-06:00	0	0	0	0	0
	06:00-09:00	2	1	0	0	0
	09:00-12:00	0	0	0	1	3
	12:00-15:00	0	2	0	0	0
	15:00-18:00	1	3	1	3	3
	18:00-21:00	2	1	3	1	2
	21:00-24:00	0	0	0	0	0

Krome Avenue
SW 296 Street to SW 288 Street (BMP - 3.877 - EMP - 4.272)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	3	12,000	0.395	1.734	0.679	1.645	1.421	1.221	1	0	$656,700
2000	3	13,600	0.395	1.530	0.679	1.645	1.392	1.099	3	0	$656,700
2001	1	13,500	0.395	0.514	0.679	1.645	1.394	0.369	0	0	$218,900
2002	0	0	0.395	#DIV/0!	#N/A	1.645	#N/A	#DIV/0!	0	0	$0
2003	2	16,200	0.395	0.856	0.679	1.645	1.352	0.633	1	0	$437,800
	9										

Krome Avenue
SW 288 Street to SW 272 Street (BMP - 4.372 - EMP - 5.292)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	2	12,000	0.920	0.496	0.679	1.645	1.230	0.403	1	0	$437,800
2000	4	13,600	0.920	0.876	0.679	1.645	1.204	0.728	2	1	$875,600
2001	5	13,500	0.920	1.103	0.679	1.645	1.205	0.915	3	0	$1,094,500
2002	4	14,100	0.920	0.845	0.679	1.645	1.196	0.706	4	0	$875,600
2003	4	16,200	0.920	0.735	0.679	1.645	1.168	0.629	3	0	$875,600
	19										

Krome Avenue
SW 272 Street to SW 264 Street (BMP - 5.392 - EMP - 5.798)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	0	0	0.406	#DIV/0!	0.679	1.645	#DIV/0!	#DIV/0!	0	0	$0
2000	0	0	0.406	#DIV/0!	0.679	1.645	#DIV/0!	#DIV/0!	0	0	$0
2001	0	0	0.406	#DIV/0!	0.679	1.645	#DIV/0!	#DIV/0!	0	0	$0
2002	1	14,100	0.406	0.479	0.679	1.645	1.377	0.347	0	0	$218,900
2003	1	16,200	0.406	0.417	0.679	1.645	1.346	0.310	4	2	$218,900
	2										

Krome Avenue
SW 264 Street to SW 256 Street (BMP - 5.898 - EMP - 6.307)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	1	12,000	0.409	0.558	0.679	1.645	1.413	0.395	1	0	$218,900
2000	1	13,600	0.409	0.493	0.679	1.645	1.384	0.356	1	0	$218,900
2001	1	13,500	0.409	0.496	0.679	1.645	1.386	0.358	1	0	$218,900
2002	3	14,100	0.409	1.425	0.679	1.645	1.376	1.036	3	0	$656,700
2003	0	0	0.409	#DIV/0!	0.679	1.645	#DIV/0!	#DIV/0!	0	0	$0
	6										

Krome Avenue
SW 256 Street to SW 248 Street (BMP - 6.407 - EMP - 6.809)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	2	12,000	0.402	1.136	0.679	1.645	1.417	0.802	2	0	$437,800
2000	0	0	0.402	#DIV/0!	0.679	1.645	#DIV/0!	#DIV/0!	0	0	$0
2001	1	13,500	0.402	0.505	0.679	1.645	1.390	0.363	0	0	$218,900
2002	3	14,100	0.402	1.450	0.679	1.645	1.380	1.051	3	0	$656,700
2003	1	16,200	0.402	0.421	0.679	1.645	1.348	0.312	0	0	$218,900
	7										

Krome Avenue
SW 248 Street to SW 232 Street (BMP - 6.909 - EMP - 7.829)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injusr Crashes	Fatal Crashes	Total Economic Loss
1999	1	12,000	0.920	0.248	0.679	1.645	1.230	0.202	1	0	$218,900
2000	2	13,600	0.920	0.438	0.679	1.645	1.204	0.364	2	0	$437,800
2001	7	13,500	0.920	1.544	0.679	1.645	1.205	1.281	7	0	$1,532,300
2002	2	14,100	0.920	0.422	0.679	1.645	1.196	0.353	2	0	$437,800
2003	3	16,200	0.920	0.551	0.679	1.645	1.168	0.472	1	0	$656,700
	15										

Krome Avenue
SW 232 Street to SW 216 Street (BMP - 7.929 - EMP - 8.835)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	5	12,500	0.906	1.210	0.679	1.645	1.225	0.988	4	0	$1,094,500
2000	3	14,300	0.906	0.634	0.679	1.645	1.197	0.530	2	0	$656,700
2001	4	15,100	0.906	0.801	0.679	1.645	1.185	0.676	4	0	$875,600
2002	5	14,600	0.906	1.036	0.679	1.645	1.192	0.869	2	0	$1,094,500
2003	2	16,800	0.906	0.360	0.679	1.645	1.164	0.309	1	0	$437,800
	19										

Krome Avenue
SW 216 Street to SW 200 Street (BMP - 8.935 - EMP - 9.834)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	6	12,500	0.899	1.463	0.679	1.645	1.226	1.193	2	0	$1,313,400
2000	2	14,300	0.899	0.426	0.679	1.645	1.198	0.356	2	0	$437,800
2001	3	15,100	0.899	0.605	0.679	1.645	1.187	0.510	1	0	$656,700
2002	4	14,600	0.899	0.835	0.679	1.645	1.194	0.699	3	0	$875,600
2003	1	16,800	0.899	0.181	0.679	1.645	1.166	0.156	0	0	$218,900
	16										

Krome Avenue
SW 200 Street to SW 192 Street (BMP - 9.934 - EMP - 10.339)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	5	12,500	0.405	2.706	0.679	1.645	1.406	1.925	5	0	$1,094,500
2000	0	0	0.405	#DIV/0!	0.679	1.645	#DIV/0!	#DIV/0!	0	0	$0
2001	1	15,100	0.405	0.448	0.679	1.645	1.362	0.329	0	0	$218,900
2002	1	14,600	0.405	0.463	0.679	1.645	1.370	0.338	1	0	$218,900
2003	4	16,800	0.405	1.611	0.679	1.645	1.338	1.204	2	0	$875,600
	11										

Krome Avenue
SW 192 Street to SW 184 Street (BMP - 10.439 - EMP - 10.846)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	1	12,500	0.407	0.539	0.679	1.645	1.404	0.383	0	0	$218,900
2000	2	14,300	0.407	0.941	0.679	1.645	1.374	0.685	2	0	$437,800
2001	2	15,100	0.407	0.892	0.679	1.645	1.361	0.655	1	0	$437,800
2002	0	0	0.407	#DIV/0!	0.679	1.645	#DIV/0!	#DIV/0!	0	0	$0
2003	0	0	0.407	#DIV/0!	0.679	1.645	#DIV/0!	#DIV/0!	0	0	$0
	5										

Krome Avenue
SW 184 Street to SW 168 Street (BMP - 10.946 - EMP - 11.848)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	4	10,900	0.902	1.115	0.679	1.645	1.255	0.888	1	1	$875,600
2000	4	12,200	0.902	0.996	0.679	1.645	1.231	0.809	2	0	$875,600
2001	3	11,500	0.906	0.789	0.679	1.645	1.243	0.635	3	0	$656,700
2002	5	14,500	0.902	1.047	0.679	1.645	1.195	0.877	2	0	$1,094,500
2003	3	14,500	0.902	0.628	0.679	1.645	1.195	0.526	2	0	$656,700
	19										

Krome Avenue
SW 168 Street to SW 136 Street (BMP - 11.995 - EMP - 13.845)

Year	Number of Crashes	ADT (vpd)	Segment Length	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	5	10,900	1.850	0.679	0.679	1.645	1.111	0.612	2	0	$1,094,500
2000	7	12,200	1.850	0.850	0.679	1.645	1.091	0.779	5	0	$1,532,300
2001	5	11,500	1.850	0.644	0.679	1.645	1.101	0.585	2	1	$1,094,500
2002	6	14,500	1.850	0.613	0.679	1.645	1.061	0.577	5	0	$1,313,400
2003	9	14,500	1.850	0.919	0.679	1.645	1.061	0.866	8	0	$1,970,100
	32										

(Spot Analysis)

Krome Avenue at SW 296 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	3.777	to	3.877		
ADT	=	16,300	13,900	11,700	14,100	11,600
Nearest Node	=	872				
Crash Rate Class Category	=	S-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	3	1	2	1	3
	Head On	0	0	0	0	0
	Angle	1	1	1	0	4
	Left Turn	0	0	0	0	1
	Right Turn	0	0	0	0	0
	Sideswipe	0	1	0	0	2
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	4	1	0	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	0	3	1	0	5
	Injury Crashes	4	4	3	1	6
LIGHT CONDITIONS	Daylite	1	3	2	1	7
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	2	3	2	0	4
	Dark (wo/Street Lites)	0	1	0	0	0
	Unknown	1	0	0	0	0
WEATHER	Dry	3	4	2	0	8
	Cloudy	1	2	1	1	3
	Rain	0	1	1	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	4	6	3	1	11
	Wet	0	1	1	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	1	0	1	1	2
	February	2	1	0	0	0
	March	0	1	1	0	3
	April	0	1	0	0	0
	May	0	2	0	0	2
	June	0	0	0	0	0
	July	0	0	0	0	0
	August	0	1	0	0	1
	September	1	0	1	0	0
	October	0	0	0	0	2
	November	0	1	1	0	1
	December	0	0	0	0	0
DAY OF WEEK	Sunday	1	1	0	0	2
	Monday	1	0	1	0	2
	Tuesday	0	1	0	0	0
	Wednesday	1	2	0	0	0
	Thursday	0	0	1	1	1
	Friday	0	1	1	0	1
	Saturday	1	2	1	0	5
HOUR OF DAY	00:00-03:00	0	0	1	0	3
	03:00-06:00	0	1	0	0	0
	06:00-09:00	3	0	0	1	0
	09:00-12:00	0	0	0	0	0
	12:00-15:00	0	1	0	0	2
	15:00-18:00	0	2	2	0	4
	18:00-21:00	0	1	1	0	2
	21:00-24:00	1	2	0	0	0

Krome Avenue at SW 288 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	4.272	to	4.372		
ADT	=	12,000	13,600	13,500	14,100	16,200
Nearest Node	=	874				
Crash Rate Class Category	=	S-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	0	1	4	0
	Head On	0	0	0	0	0
	Angle	4	0	4	3	1
	Left Turn	0	1	0	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	1	0	0	0	1
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	0	1	0	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	1	2	2	2
	Injury Crashes	6	0	4	5	1
LIGHT CONDITIONS	Daylite	4	1	5	7	2
	Dusk	0	0	0	0	0
	Dawn	1	0	0	0	0
	Dark (w/Street Lites)	1	0	1	0	1
	Dark (wo/Street Lites)	1	0	0	0	0
	Unknown	0	0	0	0	0
WEATHER	Dry	2	1	2	4	1
	Cloudy	4	0	3	2	1
	Rain	1	0	1	1	1
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	6	1	4	6	2
	Wet	1	0	2	1	1
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	1	0	1	0	0
	February	0	0	0	1	0
	March	1	0	1	2	0
	April	0	0	0	0	0
	May	0	0	1	1	0
	June	2	0	0	1	1
	July	0	1	2	0	0
	August	2	0	0	0	0
	September	0	0	1	0	1
	October	1	0	0	0	0
	November	0	0	0	1	0
	December	0	0	0	1	1
DAY OF WEEK	Sunday	0	0	1	1	0
	Monday	3	0	0	2	0
	Tuesday	1	0	0	0	0
	Wednesday	0	0	1	0	1
	Thursday	0	0	2	2	0
	Friday	1	0	0	1	0
	Saturday	2	1	2	1	2
HOUR OF DAY	00:00-03:00	1	0	1	0	0
	03:00-06:00	1	0	0	0	0
	06:00-09:00	3	0	3	2	0
	09:00-12:00	0	0	0	2	1
	12:00-15:00	0	0	1	2	0
	15:00-18:00	2	1	0	1	0
	18:00-21:00	0	0	1	0	2
	21:00-24:00	0	0	0	0	0

Krome Avenue at SW 272 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	5.292	to	5.392		
ADT	=	12,000	13,600	13,500	14,100	16,200
Nearest Node	=	877				
Crash Rate Class Category	=	S-2UN	S-2UN	S-2UN	S-2UN	S-2UN

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	0	1	1	0	1
	Head On	0	0	0	0	0
	Angle	3	2	3	3	1
	Left Turn	1	2	3	3	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	2	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	2	0	0	0	0
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	-4	2	2	2	1
	Injury Crashes	4	5	5	4	1
LIGHT CONDITIONS	Daylite	4	2	5	3	1
	Dusk	0	1	0	1	0
	Dawn	0	1	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	1	3	2	2	1
	Unknown	1	0	0	0	0
WEATHER	Dry	2	4	4	3	1
	Cloudy	2	3	3	2	1
	Rain	0	0	0	1	0
	Fog	1	0	0	0	0
	Others	0	0	0	0	0
	Unknown	1	0	0	0	0
SURFACE CONDITIONS	Dry	5	6	6	5	2
	Wet	0	1	1	1	0
	Others	0	0	0	0	0
	Unknown	1	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	0
	February	2	0	0	1	0
	March	0	0	0	0	0
	April	0	1	1	0	0
	May	0	0	0	0	0
	June	0	1	3	1	0
	July	1	1	1	1	0
	August	0	0	0	0	0
	September	1	0	2	0	0
	October	1	3	0	0	0
	November	0	1	0	1	0
	December	1	0	0	2	2
DAY OF WEEK	Sunday	2	1	1	0	1
	Monday	0	2	1	1	0
	Tuesday	1	0	0	3	1
	Wednesday	0	0	0	1	0
	Thursday	1	1	2	0	0
	Friday	0	2	3	0	0
	Saturday	2	1	0	1	0
HOUR OF DAY	00:00-03:00	1	0	0	0	0
	03:00-06:00	1	1	0	0	1
	06:00-09:00	0	1	0	0	0
	09:00-12:00	1	0	0	1	0
	12:00-15:00	1	2	2	2	1
	15:00-18:00	2	0	1	1	0
	18:00-21:00	0	2	4	0	0
	21:00-24:00	0	1	0	2	0

Krome Avenue at SW 264 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	5.798	to	5.898		
ADT	=	12,000	13,600	13,500	14,100	16,200
Nearest Node	=	879				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	2	4	0	1
	Head On	0	0	0	0	0
	Angle	1	0	1	1	0
	Left Turn	1	2	1	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	0	1	1	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	0	3	3	2	2
	Injury Crashes	4	1	4	0	0
LIGHT CONDITIONS	Daylite	2	2	4	0	1
	Dusk	0	0	0	1	0
	Dawn	0	1	0	0	0
	Dark (w/Street Lites)	0	1	0	0	0
	Dark (wo/Street Lites)	2	0	3	1	1
	Unknown	0	0	0	0	0
WEATHER	Dry	3	2	3	1	1
	Cloudy	1	1	2	1	1
	Rain	0	1	2	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	4	2	4	2	2
	Wet	0	2	3	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	2	0	2	1	0
	February	0	0	0	0	0
	March	0	0	1	1	0
	April	0	1	0	0	0
	May	0	0	0	0	0
	June	0	0	0	0	1
	July	1	0	0	0	0
	August	0	1	2	0	0
	September	0	1	1	0	0
	October	0	1	0	0	0
	November	0	0	1	0	0
	December	1	0	0	0	1
DAY OF WEEK	Sunday	0	0	2	0	0
	Monday	1	2	0	0	1
	Tuesday	0	0	0	0	0
	Wednesday	2	0	0	1	0
	Thursday	0	0	2	0	1
	Friday	1	1	2	0	0
	Saturday	0	1	1	1	0
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	0	2	4	0	0
	09:00-12:00	1	0	0	0	0
	12:00-15:00	1	0	0	1	0
	15:00-18:00	0	1	1	0	1
	18:00-21:00	0	0	1	0	1
	21:00-24:00	2	1	1	1	0

Krome Avenue at SW 256 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	6.307	to	6.407		
ADT	=	12,000	13,600	13,500	14,100	16,200
Nearest Node	=	880				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	0	1	4	3
	Head On	0	0	0	0	0
	Angle	0	1	1	0	1
	Left Turn	1	0	0	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	1
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	1	0	0	1	2
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	2	0	1	0	1
	Injury Crashes	2	1	1	5	6
LIGHT CONDITIONS	Daylite	3	0	1	2	3
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	1	0
	Dark (wo/Street Lites)	0	1	1	2	4
	Unknown	1	0	0	0	0
WEATHER	Dry	1	1	1	2	7
	Cloudy	2	0	1	2	0
	Rain	0	0	0	1	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	1	0	0	0	0
SURFACE CONDITIONS	Dry	3	1	2	3	7
	Wet	0	0	0	2	0
	Others	0	0	0	0	0
	Unknown	1	0	0	0	0
MONTH OF YEAR	January	0	0	0	1	3
	February	0	0	0	0	2
	March	1	0	0	0	0
	April	0	0	1	0	0
	May	1	0	0	0	0
	June	0	0	0	2	0
	July	1	0	0	1	1
	August	0	0	0	0	0
	September	0	0	0	1	0
	October	0	1	0	0	0
	November	1	0	0	0	1
	December	0	0	1	0	0
DAY OF WEEK	Sunday	1	0	0	0	1
	Monday	3	0	1	1	0
	Tuesday	0	0	0	0	0
	Wednesday	0	0	0	0	1
	Thursday	0	0	0	2	0
	Friday	0	0	0	0	3
	Saturday	0	1	1	2	2
HOUR OF DAY	00:00-03:00	1	0	0	0	3
	03:00-06:00	0	0	0	1	0
	06:00-09:00	1	0	0	0	0
	09:00-12:00	1	0	0	1	1
	12:00-15:00	0	0	0	0	0
	15:00-18:00	0	0	0	2	1
	18:00-21:00	1	0	1	0	2
	21:00-24:00	0	1	1	1	0

Krome Avenue at SW 248 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	6.809	to	6.909		
ADT	=	12,000	13,600	13,500	14,100	16,200
Nearest Node	=	882				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	4	2	2	1	4
	Head On	0	0	0	0	0
	Angle	1	2	1	2	3
	Left Turn	2	0	1	1	0
	Right Turn	0	0	0	1	0
	Sideswipe	1	0	0	0	2
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	0	1	1	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	4	2	1	1	8
	Injury Crashes	4	2	4	5	2
LIGHT CONDITIONS	Daylite	8	3	3	5	7
	Dusk	0	0	0	0	1
	Dawn	0	0	0	1	0
	Dark (w/Street Lites)	0	1	1	0	0
	Dark (wo/Street Lites)	0	0	1	0	2
	Unknown	0	0	0	0	0
WEATHER	Dry	4	2	4	3	5
	Cloudy	3	2	1	3	5
	Rain	1	0	0	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	6	3	5	6	9
	Wet	2	1	0	0	1
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	0
	February	1	1	1	1	1
	March	2	0	1	0	1
	April	1	0	0	2	0
	May	0	0	0	1	3
	June	2	0	2	1	0
	July	0	0	0	0	1
	August	1	1	0	0	1
	September	0	0	0	1	1
	October	0	2	1	0	1
	November	0	0	0	0	1
	December	1	0	0	0	0
DAY OF WEEK	Sunday	2	0	2	1	2
	Monday	1	1	1	0	2
	Tuesday	1	1	0	1	3
	Wednesday	1	2	1	1	2
	Thursday	0	0	0	0	0
	Friday	1	0	0	2	1
	Saturday	2	0	1	1	0
HOUR OF DAY	00:00-03:00	0	0	0	0	1
	03:00-06:00	0	1	1	1	0
	06:00-09:00	0	0	0	1	1
	09:00-12:00	2	0	1	2	1
	12:00-15:00	3	1	1	1	0
	15:00-18:00	2	2	0	1	5
	18:00-21:00	1	0	1	0	2
	21:00-24:00	0	0	1	0	0

Krome Avenue at SW 232 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	7.829	to	7.929		
ADT	=	12,000	13,600	13,500	14,100	16,200
Nearest Node	=	883				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	0	2	2	2	6
	Head On	1	0	1	0	0
	Angle	2	1	1	2	0
	Left Turn	1	1	0	1	1
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	1	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	0	0	3	2
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	2	2	7	2
	Injury Crashes	4	2	2	1	7
LIGHT CONDITIONS	Daylite	3	3	3	6	4
	Dusk	0	0	0	0	1
	Dawn	0	0	0	1	0
	Dark (w/Street Lites)	2	0	0	0	1
	Dark (wo/Street Lites)	0	1	1	1	3
	Unknown	0	0	0	0	0
WEATHER	Dry	3	3	4	5	5
	Cloudy	2	1	0	3	3
	Rain	0	0	0	0	1
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	5	4	4	8	7
	Wet	0	0	0	0	2
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	1	0	1	0	0
	February	1	1	0	0	1
	March	1	2	1	2	0
	April	1	0	1	2	0
	May	0	0	0	1	0
	June	0	0	0	1	1
	July	0	0	0	0	0
	August	0	1	0	0	0
	September	1	0	1	0	0
	October	0	0	0	1	3
	November	0	0	0	0	2
	December	0	0	0	1	2
DAY OF WEEK	Sunday	0	0	0	0	2
	Monday	0	1	0	0	2
	Tuesday	1	0	1	1	1
	Wednesday	0	0	0	1	0
	Thursday	0	2	2	0	2
	Friday	4	1	1	4	1
	Saturday	0	0	0	2	1
HOUR OF DAY	00:00-03:00	0	0	0	1	0
	03:00-06:00	0	0	0	1	1
	06:00-09:00	2	0	0	0	0
	09:00-12:00	0	0	2	2	2
	12:00-15:00	0	1	0	1	2
	15:00-18:00	2	1	1	0	0
	18:00-21:00	1	1	1	3	3
	21:00-24:00	0	1	0	0	1

Krome Avenue at SW 216 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	8.835	to	8.935		
ADT	=	12,500	14,300	15,100	14,600	16,800
Nearest Node	=	885				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	1	2	0	2	0
	Head On	0	0	0	0	0
	Angle	2	1	3	0	2
	Left Turn	0	0	0	0	1
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	1	0	2	0	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	1	2	0	2
	Injury Crashes	3	2	3	2	2
LIGHT CONDITIONS	Daylite	3	3	2	2	3
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	1	0	1	0	1
	Dark (wo/Street Lites)	0	0	2	0	0
	Unknown	0	0	0	0	0
WEATHER	Dry	2	3	4	2	2
	Cloudy	1	0	1	0	2
	Rain	1	0	0	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	2	3	5	2	4
	Wet	2	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	1	1	0	0
	February	0	0	0	0	2
	March	0	1	0	0	0
	April	0	0	1	0	0
	May	0	0	0	0	0
	June	1	0	1	0	0
	July	0	1	0	0	1
	August	1	0	1	0	0
	September	0	0	0	1	0
	October	0	0	0	0	1
	November	1	0	1	1	0
	December	1	0	0	0	0
DAY OF WEEK	Sunday	1	0	1	0	1
	Monday	0	0	0	0	0
	Tuesday	0	0	0	1	1
	Wednesday	1	0	1	0	1
	Thursday	0	1	1	0	0
	Friday	2	0	1	1	1
	Saturday	0	2	1	0	0
HOUR OF DAY	00:00-03:00	1	0	1	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	1	0	2	0	0
	09:00-12:00	0	0	0	0	2
	12:00-15:00	1	0	1	2	1
	15:00-18:00	1	3	1	0	0
	18:00-21:00	0	0	0	0	0
	21:00-24:00	0	0	0	0	1

Krome Avenue at SW 200 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	9.834	to	9.934		
ADT	=	12,500	14,300	15,100	14,600	16,800
Nearest Node	=	886				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	6	3	1	0
	Head On	0	0	0	0	0
	Angle	0	2	3	1	0
	Left Turn	0	0	0	1	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	1	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	0	2	1	2
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	5	3	1	1
	Injury Crashes	1	3	6	3	1
LIGHT CONDITIONS	Daylite	1	5	7	2	0
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	2	0	1	1
	Dark (wo/Street Lites)	1	1	2	1	1
	Unknown	0	0	0	0	0
WEATHER	Dry	0	4	7	1	1
	Cloudy	2	4	1	2	0
	Rain	0	0	1	1	1
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	2	8	8	3	1
	Wet	0	0	1	1	1
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	2	0	0
	February	0	1	0	0	1
	March	0	0	1	1	0
	April	0	0	0	0	0
	May	1	0	0	0	0
	June	0	1	0	1	0
	July	0	2	1	0	0
	August	0	0	0	0	0
	September	0	0	2	0	1
	October	0	1	1	0	0
	November	0	1	1	1	0
	December	1	2	1	1	0
DAY OF WEEK	Sunday	0	0	2	1	0
	Monday	2	1	1	1	1
	Tuesday	0	0	0	1	0
	Wednesday	0	1	2	0	1
	Thursday	0	4	0	0	0
	Friday	0	0	2	1	0
	Saturday	0	2	2	0	0
HOUR OF DAY	00:00-03:00	0	0	1	0	1
	03:00-06:00	0	0	0	0	0
	06:00-09:00	0	1	1	0	0
	09:00-12:00	0	2	2	1	0
	12:00-15:00	0	0	2	1	0
	15:00-18:00	1	2	2	0	0
	18:00-21:00	1	1	1	0	1
	21:00-24:00	0	2	0	2	0

Krome Avenue at SW 192 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	10.339	to	10.439		
ADT	=	12,500	14,300	15,100	14,600	16,800
Nearest Node	=	889				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	0	3	3	1	1
	Head On	0	0	0	0	0
	Angle	2	2	0	0	2
	Left Turn	1	2	1	0	0
	Right Turn	0	0	0	0	0
	Sideswipe	1	0	0	0	0
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	2	0	1	0	0
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	3	1	2	0	0
	Injury Crashes	3	6	3	1	3
LIGHT CONDITIONS	Daylite	3	5	3	1	2
	Dusk	0	2	0	0	0
	Dawn	1	0	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	0	0	2	0	1
	Unknown	2	0	0	0	0
WEATHER	Dry	0	5	1	0	1
	Cloudy	4	1	3	0	2
	Rain	0	1	1	1	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	1	0	0	0	0
SURFACE CONDITIONS	Dry	4	6	3	0	3
	Wet	0	1	1	1	0
	Others	1	0	1	0	0
	Unknown	1	0	0	0	0
MONTH OF YEAR	January	0	0	0	0	1
	February	0	0	0	0	1
	March	1	0	1	0	0
	April	0	1	0	0	0
	May	0	1	0	0	0
	June	1	0	2	0	0
	July	1	0	0	0	0
	August	1	1	1	0	0
	September	1	1	0	0	1
	October	1	1	1	0	0
	November	0	1	0	0	0
	December	0	1	0	1	0
DAY OF WEEK	Sunday	0	0	0	0	1
	Monday	0	1	0	1	1
	Tuesday	1	2	1	0	0
	Wednesday	0	2	0	0	0
	Thursday	3	1	1	0	0
	Friday	2	1	0	0	0
	Saturday	0	0	3	0	1
HOUR OF DAY	00:00-03:00	1	0	0	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	1	3	1	0	1
	09:00-12:00	1	1	1	0	0
	12:00-15:00	1	0	1	0	1
	15:00-18:00	1	2	1	1	0
	18:00-21:00	1	1	1	0	1
	21:00-24:00	0	0	0	0	0

Krome Avenue at SW 184 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	10.846	to	10.946		
ADT	=	12,500	14,300	15,100	14,600	16,800
Nearest Node	=	890				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	2	2	2	4
	Head On	0	0	0	0	0
	Angle	0	2	1	1	4
	Left Turn	0	0	2	1	0
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	1	0	1
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	1	1	1	3	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	2	1	4	6	5
	Injury Crashes	1	4	3	1	5
LIGHT CONDITIONS	Daylite	2	4	5	5	5
	Dusk	0	0	0	0	0
	Dawn	0	1	0	0	1
	Dark (w/Street Lites)	0	0	1	1	3
	Dark (wo/Street Lites)	1	0	1	1	1
	Unknown	0	0	0	0	0
WEATHER	Dry	3	2	2	6	6
	Cloudy	0	2	3	1	3
	Rain	0	1	2	0	1
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	3	2	4	6	7
	Wet	0	3	3	1	3
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	2	0	1
	February	0	0	0	0	0
	March	0	0	0	2	1
	April	1	0	0	0	0
	May	0	1	0	1	1
	June	0	0	1	1	0
	July	0	0	2	0	1
	August	0	1	0	1	2
	September	0	1	1	1	0
	October	0	1	1	0	2
	November	1	0	0	0	1
	December	1	1	0	1	1
DAY OF WEEK	Sunday	0	2	1	1	2
	Monday	2	0	2	0	1
	Tuesday	0	1	0	1	2
	Wednesday	0	0	2	0	1
	Thursday	0	1	1	2	2
	Friday	1	1	0	2	1
	Saturday	0	0	1	1	1
HOUR OF DAY	00:00-03:00	0	0	1	1	0
	03:00-06:00	0	0	1	0	2
	06:00-09:00	1	2	0	2	3
	09:00-12:00	0	0	0	0	0
	12:00-15:00	0	1	1	2	2
	15:00-18:00	1	2	3	0	1
	18:00-21:00	1	0	1	1	1
	21:00-24:00	0	0	0	1	1

Krome Avenue at SW 168 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	11.895	to	11.995		
ADT	=	10,900	12,200	11,500	14,500	14,500
Nearest Node	=	894				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	2	1	2	1	2
	Head On	0	0	2	0	0
	Angle	1	0	1	0	1
	Left Turn	1	0	2	0	1
	Right Turn	0	0	0	0	0
	Sideswipe	0	0	2	0	1
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	0	1	1	1	0
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	1	2	0	2
	Injury Crashes	3	1	8	2	3
LIGHT CONDITIONS	Daylite	4	2	4	1	3
	Dusk	0	0	0	0	0
	Dawn	0	0	0	0	0
	Dark (w/Street Lites)	0	0	0	0	0
	Dark (wo/Street Lites)	0	0	6	1	2
	Unknown	0	0	0	0	0
WEATHER	Dry	3	2	6	1	3
	Cloudy	0	0	4	1	2
	Rain	1	0	0	0	0
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	3	2	9	2	5
	Wet	1	0	1	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	1	1	0
	February	0	0	0	0	1
	March	0	1	0	0	0
	April	2	0	1	0	0
	May	0	0	1	0	0
	June	1	1	1	0	0
	July	0	0	0	0	1
	August	1	0	0	0	1
	September	0	0	2	0	0
	October	0	0	0	0	1
	November	0	0	2	1	1
	December	0	0	2	0	0
DAY OF WEEK	Sunday	0	1	0	0	1
	Monday	2	0	2	1	0
	Tuesday	0	0	1	1	2
	Wednesday	0	0	1	0	1
	Thursday	1	0	0	0	1
	Friday	1	0	4	0	0
	Saturday	0	1	2	0	0
HOUR OF DAY	00:00-03:00	0	0	0	0	0
	03:00-06:00	0	0	0	0	0
	06:00-09:00	1	0	1	0	2
	09:00-12:00	1	0	1	0	0
	12:00-15:00	0	1	1	0	1
	15:00-18:00	2	0	1	1	0
	18:00-21:00	0	1	3	1	0
	21:00-24:00	0	0	3	0	2

Krome Avenue at SW 136 Street

CRASH STATISTICS

State Road No.	=	997				
Roadway Section	=	87150000				
Mile Post Limits	=	13.845	to	13.945		
ADT	=	10,900	12,200	11,500	14,500	14,500
Nearest Node	=	897				
Crash Rate Class Category	=	R-2UN				

		1999	2000	2001	2002	2003
CRASH TYPE	Rear End	1	1	4	4	2
	Head On	0	0	0	0	1
	Angle	1	4	6	1	2
	Left Turn	0	6	1	1	1
	Right Turn	0	1	0	0	0
	Sideswipe	0	0	1	0	1
	Pedestrian/Bicycle	0	0	0	0	0
	Fixed Object	0	0	0	0	0
	Other	3	1	0	0	1
SEVERITY	Fatal Crashes	0	0	0	0	0
	PDO	1	2	6	1	3
	Injury Crashes	4	11	6	5	5
LIGHT CONDITIONS	Daylite	1	4	6	3	5
	Dusk	0	0	0	0	0
	Dawn	1	0	0	0	0
	Dark (w/Street Lites)	0	1	0	1	1
	Dark (wo/Street Lites)	3	8	6	2	2
	Unknown	0	0	0	0	0
WEATHER	Dry	3	9	6	3	2
	Cloudy	2	3	6	3	5
	Rain	0	1	0	0	1
	Fog	0	0	0	0	0
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
SURFACE CONDITIONS	Dry	5	11	12	6	7
	Wet	0	2	0	0	1
	Others	0	0	0	0	0
	Unknown	0	0	0	0	0
MONTH OF YEAR	January	0	0	1	1	1
	February	1	2	1	0	0
	March	2	1	1	1	0
	April	0	0	1	1	0
	May	1	3	1	0	0
	June	0	1	1	0	0
	July	1	0	1	0	0
	August	0	0	0	1	0
	September	0	1	2	1	1
	October	0	4	2	0	1
	November	0	1	0	0	1
	December	0	0	1	1	4
DAY OF WEEK	Sunday	1	1	3	0	1
	Monday	0	1	3	0	1
	Tuesday	2	5	0	1	1
	Wednesday	0	1	1	0	0
	Thursday	0	1	2	0	2
	Friday	1	0	0	1	0
	Saturday	1	4	3	4	3
HOUR OF DAY	00:00-03:00	0	4	2	0	0
	03:00-06:00	1	0	0	0	0
	06:00-09:00	1	2	2	1	2
	09:00-12:00	0	1	0	0	0
	12:00-15:00	0	1	2	0	2
	15:00-18:00	1	1	1	2	0
	18:00-21:00	0	1	3	1	1
	21:00-24:00	2	3	2	2	3

Krome Avenue at SW 296 Street
(BMP 3.777 - EMP 3.877)

Year	Number of Crashes	ADT (vpd)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes	Total Economic Loss
1999	4	16,300	0.672	1.534	1.645	2.285	0.294	4	0	$875,600
2000	7	13,900	1.380	1.534	1.645	2.340	0.590	4	0	$1,532,300
2001	4	11,700	0.937	1.534	1.645	2.403	0.390	3	0	$875,600
2002	1	14,100	0.194	0.739	1.645	1.265	0.154	1	0	$218,900
2003	11	11,600	2.598	0.739	1.645	1.308	1.986	6	0	$2,407,900
	27									

Krome Avenue at SW 288 Street
(BMP 4.272 - EMP 4.372)

Year	Number of Crashes	ADT (vpd)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	7	12,000	1.598	1.534	1.645	2.393	0.668	6	0
2000	1	13,600	0.201	1.534	1.645	2.348	0.086	0	0
2001	6	13,500	1.218	1.534	1.645	2.350	0.518	4	0
2002	7	14,100	1.360	0.739	1.645	1.265	1.075	4	1
2003	3	16,200	0.507	0.739	1.645	1.236	0.410	1	1
	24								

Krome Avenue at SW 272 Street
(BMP 5.292 - EMP 5.392)

Year	Number of Crashes	ADT (100)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	6	12,000	1.370	1.534	1.645	2.393	0.572	4	0
2000	7	13,600	1.410	1.534	1.645	2.348	0.601	5	0
2001	7	13,500	1.421	1.534	1.645	2.350	0.604	5	0
2002	6	14,100	1.166	0.739	1.645	1.265	0.921	3	1
2003	2	16,200	0.338	0.739	1.645	1.236	0.274	1	0
	28								

Krome Avenue at SW 264 Street
(BMP 5.798 - EMP 5.898)

Year	Number of Crashes	ADT (vpd)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	4	12,000	0.913	1.534	1.645	2.393	0.382	3	1
2000	4	13,600	0.806	1.534	1.645	2.348	0.343	1	0
2001	7	13,500	1.421	1.534	1.645	2.350	0.604	4	0
2002	2	14,100	0.389	0.739	1.645	1.265	0.307	0	0
2003	2	16,200	0.338	0.739	1.645	1.236	0.274	0	0
	19								

Krome Avenue at SW 256 Street
(BMP 6.307 - EMP 6.407)

Year	Number of Crashes	ADT (vpd)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	4	12,000	0.913	1.534	1.645	2.393	0.382	2	0
2000	1	13,600	0.201	1.534	1.645	2.348	0.086	1	0
2001	2	13,500	0.406	1.534	1.645	2.350	0.173	2	2
2002	5	14,100	0.972	0.739	1.645	1.265	0.768	5	0
2003	7	16,200	1.184	0.739	1.645	1.236	0.958	6	0
	19								

Krome Avenue at SW 248 Street
(BMP 6.809 - EMP 6.909)

Year	Number of Crashes	ADT (vpd)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	8	12,000	1.826	1.534	1.645	2.393	0.763	4	0
2000	4	13,600	0.806	1.534	1.645	2.348	0.343	2	0
2001	5	13,500	1.015	1.534	1.645	2.350	0.432	4	0
2002	6	14,100	1.166	0.739	1.645	1.265	0.921	5	0
2003	10	16,200	1.691	0.739	1.645	1.236	1.368	2	0
	33								

Krome Avenue at SW 232 Street
(BMP 7.829 - EMP 7.929)

Year	Number of Crashes	ADT (vpd)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	5	12,000	1.142	1.534	1.645	2.393	0.477	4	0
2000	4	13,600	0.806	1.534	1.645	2.348	0.343	2	0
2001	4	13,500	0.812	1.534	1.645	2.350	0.345	2	0
2002	8	14,100	1.554	0.739	1.645	1.265	1.229	1	0
2003	9	16,200	1.522	0.739	1.645	1.236	1.231	7	0
	30								

Krome Avenue at SW 216 Street
(BMP 8.835 - EMP 8.935)

Year	Number of Crashes	ADT (vpd)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	4	12,500	0.877	1.534	1.645	2.378	0.369	3	0
2000	3	14,300	0.575	1.534	1.645	2.330	0.247	2	0
2001	5	15,100	0.907	1.534	1.645	2.311	0.393	3	0
2002	2	14,600	0.375	0.739	1.645	1.258	0.298	2	0
2003	4	16,800	0.652	0.739	1.645	1.229	0.531	2	0
	18								

Krome Avenue at SW 200 Street
(BMP 9.834 - EMP 9.934)

Year	Number of Crashes	ADT (veh)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	2	12,500	0.438	1.534	1.645	2.378	0.184	1	0
2000	8	14,300	1.533	1.534	1.645	2.330	0.658	3	0
2001	9	15,100	1.633	1.534	1.645	2.311	0.707	6	0
2002	4	14,600	0.751	0.739	1.645	1.258	0.597	3	0
2003	2	16,800	0.326	0.739	1.645	1.229	0.265	1	0
	25								

Krome Avenue at SW 192 Street
(BMP 10.339 - EMP 10.439)

Year	Number of Crashes	ADT (Veh)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	6	12,500	1.315	1.534	1.645	2.378	0.553	3	0
2000	7	14,300	1.341	1.534	1.645	2.330	0.576	6	0
2001	5	15,100	0.907	1.534	1.645	2.311	0.393	3	0
2002	1	14,600	0.188	0.739	1.645	1.258	0.149	1	0
2003	3	16,800	0.489	0.739	1.645	1.229	0.398	3	0
	22								

Krome Avenue at SW 184 Street
(BMP 10.846 - EMP 10.946)

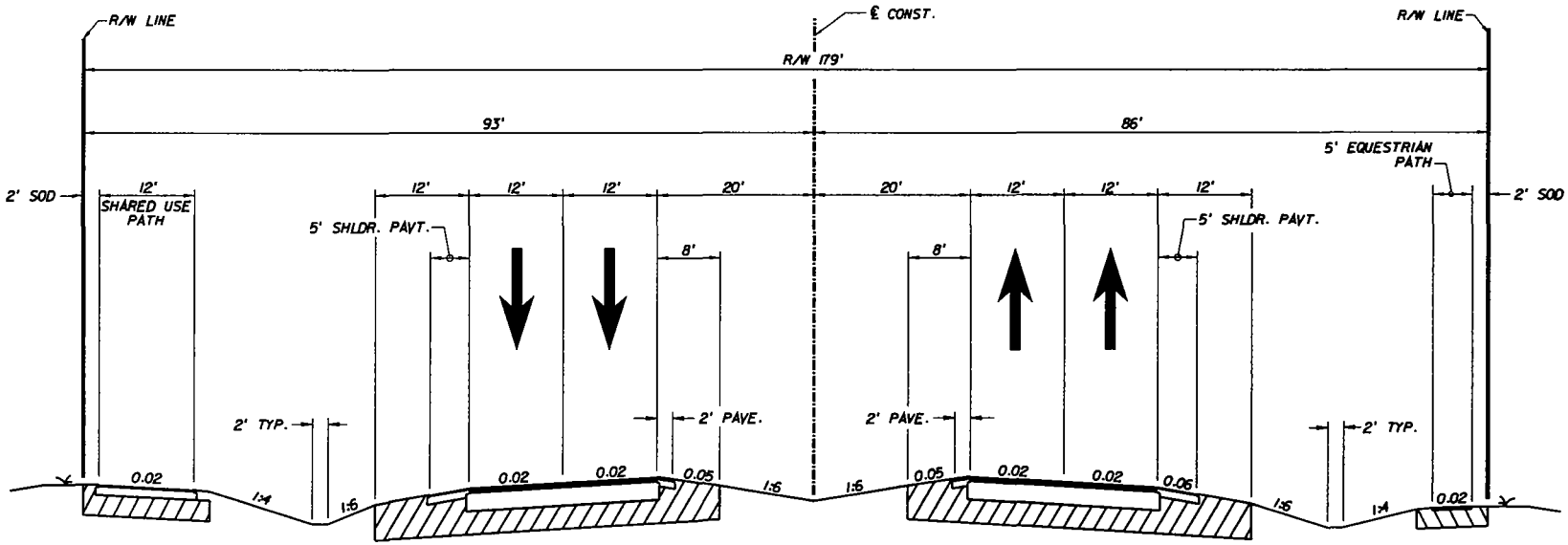
Year	Number of Crashes	ADT (vpd)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	3	12,500	0.658	1.534	1.645	2.378	0.276	1	0
2000	5	14,300	0.958	1.534	1.645	2.330	0.411	4	0
2001	7	15,100	1.270	1.534	1.645	2.311	0.550	3	0
2002	7	14,600	1.314	0.739	1.645	1.258	1.044	1	0
2003	10	16,800	1.631	0.739	1.645	1.229	1.327	5	0
	32								

Krome Avenue at SW 168 Street
(BMP 11.848 - EMP 11.995)

Year	Number of Crashes	ADT (MVD)	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	4	10,900	1.005	1.534	1.645	2.430	0.414	3	0
2000	2	12,200	0.449	1.534	1.645	2.387	0.188	1	0
2001	10	11,500	2.382	1.534	1.645	2.409	0.989	8	1
2002	2	14,500	0.378	0.739	1.645	1.259	0.300	2	0
2003	5	14,500	0.945	0.739	1.645	1.259	0.750	3	0
	23								

Krome Avenue at SW 136 Street
(BMP 13.845 - EMP 13.945)

Year	Number of Crashes	ADT Vpd	Actual Crash Rate	Average Crash Rate	K	Critical Crash Rate	Safety Ratio	Injury Crashes	Fatal Crashes
1999	5	10,900	1.257	1.534	1.645	2.430	0.517	4	0
2000	13	12,200	2.919	1.534	1.645	2.387	1.223	9	2
2001	12	11,500	2.859	1.534	1.645	2.409	1.187	6	0
2002	6	14,500	1.134	0.739	1.645	1.259	0.900	5	0
2003	8	14,500	1.512	0.739	1.645	1.259	1.200	5	0
	44								



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

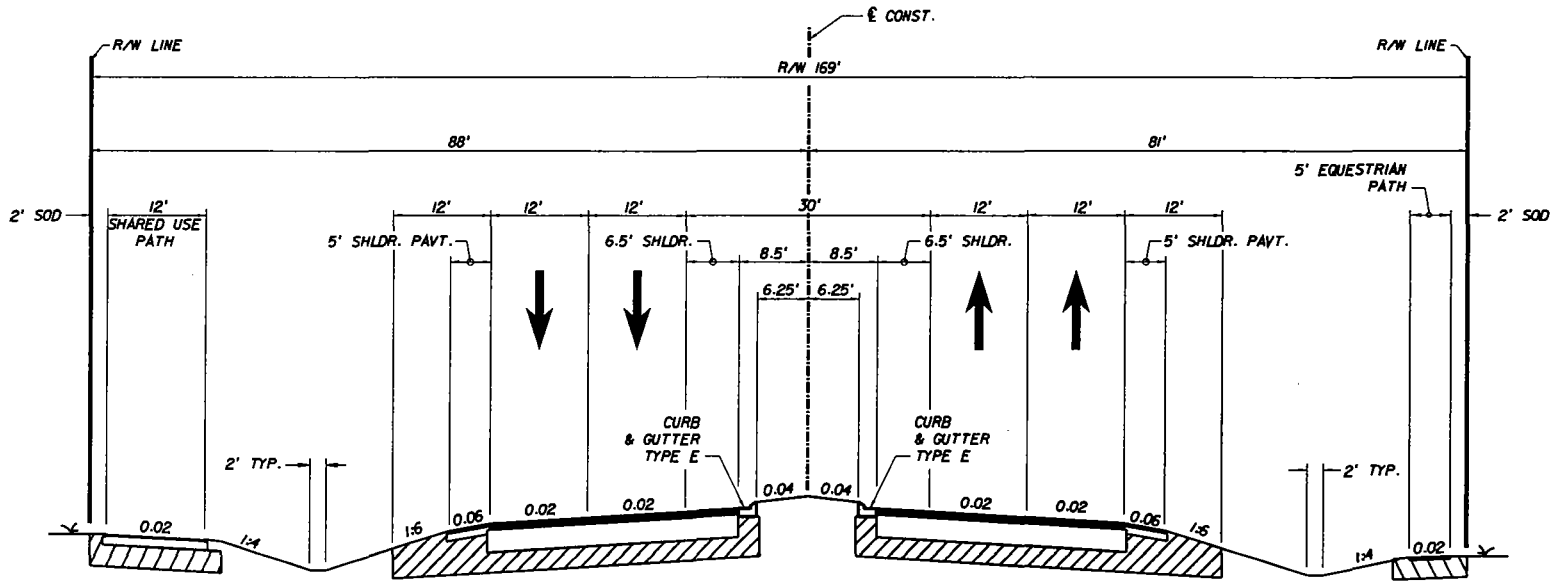
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
		- - -

KROME AVE. - TYP. SECTION
ALTERNATIVE 1

FIGURE NO. 2

$USER$ 5/27/2005 2:45:32 PM J:\3399\CADD\typ_prop02.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
		- - -

KROME AVE. - TYP. SECTION
ALTERNATIVE 2

FIGURE NO. 3

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APPENDIX G

State Historic Preservation Officer Correspondence

FLORIDA DEPARTMENT *of* STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Cathy Kendall
US Department of Transportation
Federal Highway Administration
Florida Division Office
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

August 24, 2012

RECEIVED
AUG 31 2012
PLANNING ... MENTAL
MANAG...

RE: DHR No.: 2012-3489 (x-ref: 2007-3203)/Received by DHR: July 30, 2012
Financial Management No.: 249614-4-22-01/ETDM No. 7800
Project: *State Road (SR) 997/SW 177th Avenue/Krome Ave From SW 296th Street to SW 136th Street*
County: Miami-Dade

Dear Ms. Kendall:

Our office received and reviewed the referenced case study report in accordance with Section 106 of the National Historic Preservation Act of 1966, *as amended*, and implementing regulations 36 C.F.R. Part 800 and Chapter 267, *Florida Statutes*, for possible impact to historic properties listed, or eligible for listing, in the National Register of Historic Places (NRHP). The State Historic Preservation Officer is to advise and assist state and federal agencies assessing effects on this property and considering alternatives to avoid or minimize adverse effects.

The current report is an update to the previous project review in 2007 (2007-3203). The Federal Highway Administration (FHWA) has determined no historic properties will be adversely affected by the five proposed alternatives for this project. This office concurs with the determinations of the FHWA with one exception. Based on the conditions set forth in the 2007 report and the eligibility of the Howard Schaff Residence/27450 SW 177th Avenue (8DA9674) this office finds that the removal of the mango trees on the property necessitated by Alternative 3 is an adverse effect. However, Alternatives 1, 2, 4, and 5 would not have an adverse impact on the Schaff Residence or any of the other identified historic properties.

If there are any questions concerning our comments or recommendations, please contact Ginny Jones, Architectural Historian, by phone at 850.245.6333, or by electronic mail at *ginny.jones@dos.myflorida.com*.

Sincerely,

Laura A. Kammerer

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance

PC: Barbara Culhane, FDOT D. 6, Miami
Roy Jackson, FDOT CEMO, Tallahassee/#5500

Enclosure

Florida Department of Transportation

RICK SCOTT
GOVERNOR

1000 NW 111 Avenue
Miami, Florida 33172-5800

ANANTH PRASAD, P.E.
SECRETARY

June 28, 2012

Mr. Martin Knopp, P.E.
Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303
Attention: Mr. Buddy Cunill, Environmental Coordinator

Mr. Robert Bendus
Director of Cultural and Historical Programs
Division of Historical Resources and
State Historic Preservation Officer
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250
Attention: Ms. Laura Kammerer, Historic Preservationist Supervisor

Subject: Addendum to the Cultural Resource Assessment Survey (CRAS) for SR 997 / SW 177th Avenue / Krome Avenue From SW 296th Street to SW 136th Street
Miami-Dade County, Florida
FM NO.: 249614-4-22-01
ETDM No. 7800

Dear Mr. Bendus:

Please find enclosed a copy of the final report for the above-referenced project, Florida Master Site File forms, and a complete survey log sheet for your review and comment. In 2005, Janus Research conducted a CRAS of *Krome Avenue (SW 177th Avenue/ State Road (SR)-997) from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive) in Miami-Dade County, Florida* at the request of the Florida Department of Transportation (FDOT) District 6. The objective was to document the historic and archaeological resources within the proposed project area of potential effect (APE), and assess them in terms of their eligibility for listing in the National Register of Historic Places (National Register) according to the criteria set forth in 36 CFR Section 60.4. The CRAS resulted in the identification of five previously recorded historic resources (8DA2764, 8DA2765, 8DA2818, 8DA6762, and 8DA9603), one golf course (8DA10051), and 27 newly recorded historic buildings (8DA9669-8DA9672, 8DA9674-96).

Since the time of the previous study, an additional alternative has been added to the proposed improvements. An addendum to the *CRAS of Krome Avenue (SW 177th Avenue/SR-997) from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive)* was requested by the FDOT, District 6. The objectives were to identify any additional cultural resources within the proposed APE which were not considered historic at the time of the previous CRAS, assess them in terms of their eligibility for listing in the National Register according to the criteria set forth in 36 CFR Section 60.4, and examine the potential effects of the project.

The CRAS Addendum resulted in the identification of 11 newly recorded historic resources within the project APE (8DA10753, 8DA12347-8DA12356). One of the newly recorded resources, the Seaboard Air Line (CSX) Railway (8DA10753), is considered eligible for listing in the National Register. The remaining ten historic resources are considered ineligible for listing in the National Register.

In summary, based on the project information available the improvements will have no adverse effect on the significant historic resources. The qualities which qualify the Howard Schaff Residence/27450 SW 177th Avenue (8DA9674), Clarence J. Parman Residence/27250 SW 177th Avenue (8DA9675), Redlands Golf Course (8DA10051), and the Seaboard Air Line (CSX) Railroad (8DA10753) for listing in the National Register will not be adversely affected by the proposed improvements. In addition, the historic resources located at 27101 SW 177th Avenue, 26430 SW 177th Avenue, 20901 SW 177th Avenue, and 20345 SW 177th Avenue which were not documented during this study as they are not visible from the ROW, will not be adversely affected due to their distance and buffer from the proposed improvements.
The No Build Alternative, Action Plan Alternative, and Alternatives 1, 2, 3, 4, and 5 will have no adverse effect on the Howard Schaff Residence/27450 SW 177th Avenue (8DA9674), Clarence J. Parman Residence/27250 SW 177th Avenue (8DA9675), Redlands Golf Course (8DA10051), and the Seaboard Air Line (CSX) Railroad (8DA10753). At the locations of the two significant residences, the Howard Schaff Residence/27450 SW 177th Avenue (8DA9674) and the Clarence J. Parman Residence/27250 SW 177th Avenue (8DA9675), all work will be occurring within the existing ROW for Alternatives 1, 2, 4 and 5, and there will be no adverse effect to the resources. A small acquisition of ROW from the residences is necessary for Alternative 3; however, due to the large distance from the roadway to the residences, they will not be adversely affected by the proposed improvements. A noise analysis was undertaken for both residences, and based on the predicted noise levels and the assumed conditions, use of the interior spaces of the residences will not be impacted by the project. Exterior noise impacts are considered unavoidable at the Clarence J. Parman Residence, but no exterior noise impacts are predicted at the Howard Schaff Residence.

A small portion of ROW from the Redlands Golf Course (8DA10051) is required as part of the proposed improvements for Alternatives 1, 2, 3, 4, and 5. With the exception of this area of ROW acquisition, the improvements for the build alternatives will all take place within the existing ROW at the golf course and there will be no alterations to the physical dimensions or

course layout as a result of the roadway improvements. Additionally, the noise analysis revealed that areas of frequent human use on the country club property would not be impacted by traffic noise due to the project. Therefore, there will be no adverse effect to the Redlands Golf Course (8DA10051) as a result of Alternatives 1, 2, 3, 4, and 5.
Alternatives 1, 2, 3, 4, and 5 will require roadway construction and the installation of a shared path at the intersection of the Seaboard Air Line (CSX) Railroad (8DA10753) and Krome Avenue within the project APE. However, it is only to a small portion of the track within the overall CSX system that is comprised of hundreds of miles of track, the rail corridor will still be used for rail travel, and the overall route will remain unchanged. As a result of Alternatives 1, 2, 3, 4, and 5, there will be no adverse effect to the characteristics which qualify the Seaboard Air Line (CSX) Railroad (8DA10753) for listing in the National Register.

No archaeological resources were identified during the previous surveys of the project APE. An updated search of the FMSF and Miami-Dade County local data resulted in no previously recorded archaeological sites identified within one mile of the project APE. No further archaeological work is recommended.

Please review the submitted materials and provide a determination on the significance of the documented resources and potential effects to the previously identified significant resources. This information is being provided in accordance with *Section 106 of the National Historic Preservation Act of 1966*. If you have questions or need additional information regarding subject documentation please contact me at 305-470-5221.

Sincerely,

Barbara Culhane
District Cultural Resources Coordinator

Attachments
cc: Jorge Gomez, FDOT
Amy Streelman, Janus Research

The FHWA finds the attached Addendum to the Cultural Resources Assessment Report complete and sufficient and ✓ approves / ___ does not approve the above recommendations and findings.

The FHWA requests the SHPO's opinion on the sufficiency of the attached report and the SHPO's opinion on the recommendations and findings contained in this cover letter and in the comment block below.

FHWA Comments:

It is FHWA's intent that for very small acquisitions of the historic properties that result in a "no adverse effect" finding, a Section 4(f) de minimis finding would also be made.

/s/ [signature] for
Martin C. Knopp
Division Administrator
Florida Division
Federal Highway Administration

7/27/12
Date

The Florida State Historic Preservation Officer:

✓ finds the attached report complete and sufficient and ___ concurs/ ✓ does not concur with the findings and recommendations contained in this cover letter.

___ does not find the attached report complete and sufficient and requires additional information in order to provide an opinion on the potential effects of the proposed project on historic resources.

/s/ See letter dated 8/24/12
Robert F. Bendus
Florida State Historic Preservation Officer

8. 24. 2012
Date

2012-3489
DHR Project No.

FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. David C. Gibbs
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, FL 32303

May 7, 2007

RE: DHR Project File Number: 2007-3203
Received by DHR: March 8, 2007
RAI Received by DHR: April 1, 2007
Project: *Section 106 Documentation and Determination of Effects SR 997/Krome Avenue from SW 296th Street to SW 136th Street*
Financial Management Numbers: 249614-4-21-02
Counties: Miami-Dade

Dear Mr. Gibbs:

Our office received and reviewed the above referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966 as amended, 36 CFR Part 800: Protection of Historic Properties, and Chapter 267, Florida Statutes. It is the responsibility of the State Historic Preservation Officer to advise and assist, as appropriate, Federal and State agencies in carrying out their historic preservation responsibilities; to cooperate with Federal and State agencies to ensure that historic properties are taken into consideration at all levels of planning and development; and to consult with the appropriate Federal agencies in accordance with the National Historic Preservation Act of 1966 as amended, on Federal undertakings that may affect historic properties and the content and sufficiency of any plans developed to protect, manage, or to reduce or mitigate harm to such properties.

A survey was previously conducted to identify historic structures or archaeological sites within the area of potential effect of the proposed undertaking and three significant historic resources were identified: the *Howard Schaff Residence* (8DA9674), the *Clarence J. Parman Residence* (8DA9675), and the *Redland Golf Course* (8DA10051). The Federal Highway Administration (FHWA) has determined that Alternatives 1 and 2 will not require any additional right of way (ROW) from the *Schaff* and *Parman Residences* and will, therefore, have no effect on these resources. Alternative 3 and 4 do require additional ROW from the *Schaff Residence* (.28 and .02 acres respectively) and the *Parman Residence* (.06 and .005 acres respectively) but no historic features will be removed and the at-grade roadway will not introduce any visual/aesthetic impacts. Consequently, the FHWA has concluded that Alternatives 3 and 4 will have no adverse effect on the *Schaff* and *Parman Residences*.

Alternatives 1, 2, 3, and 4 were found to have no adverse effect on *the Redland Golf Course*. Although all the alternatives will take additional ROW (.12 acres for Alternatives 1 and 2; 1.10 acres for Alternative

3; and .21 acres for Alternative 4), the acquisitions remain at the perimeter of the property and the golf course itself will not be affected. Additionally, no trees are to be removed along this perimeter. The at-grade roadway in this location will not introduce any visual/aesthetic effects.

Based on the information provided, our office concurs with these determinations conditional on the following:

- The large mango trees and oolitic limestone pedestals in front of the *Schaff Residence* will not be removed. These historic features will be cordoned off in order to protect them during staging and construction activities.
- No trees that provide a visual barrier between the golf course and the roadway will be removed.
- Noise barrier analysis will be submitted to our office for review and comment once the preferred alternative is chosen.

If you have any questions, please contact Sherry Anderson, Architectural Historian, Transportation Compliance Review Program, by email *sanderson@dos.state.fl.us*, or at 850-245-6432.

Sincerely,

Frederick P. Gaske, Director, and
State Historic Preservation Officer

XC: Ms. Alice Bravo, FDOT, District 6
Ms. Catherine Owen, FDOT, District 6
Roy Jackson, FDOT CEMO
Amy Streelman, Janus Research

Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

District VI
Planning and Environmental
Management Office
1000 Northwest 111th Avenue
Miami, Florida 33172

STEPHANIE KOPELOUSOS
INTERIM SECRETARY

January 30, 2007

Mr. David C. Gibbs, Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Attention: Greg Williams, District Transportation Engineer

Re: **Request for Section 106 Concurrence of Effect**
SR 997/Krome Avenue/SW 177th Avenue ("Krome South PD&E Study")
From: SW 296th Street/Avocado Drive
To: SW 136th Street/Howard Drive
Financial Management No.: 249614-4-21-01
Federal Aid Project No.: Not Assigned
County: Miami-Dade

Dear Mr. Gibbs:

Enclosed please find a Section 106 Documentation and Determination of Effects Report for the above-referenced Environmental Impact Statement project. Krome Avenue, part of the Florida Intrastate Highway System, provides regional connectivity and serves as an alternate hurricane evacuation route to US-1 and the Florida Turnpike for those living in south Miami-Dade County. The existing corridor is physically and functionally deficient, and can neither meet the current needs nor future demands of the area with regard to safety and mobility. The existing typical section varies slightly, consisting primarily of two lanes varying in width from 10.5 to 12 feet, paved shoulders ranging from no shoulder to five feet in width, and roadside swales. The PD&E Study alternatives include the No Build, Transportation System Management, and four Build Alternatives (consisting of two, three, and four lane typical sections). All alternatives include an evaluation of preservation of the rural character of the corridor while providing for safety and operational improvements.

The following resources were identified in the Cultural Resource Assessment Survey (CRAS) and CRAS Addendum as being eligible for listing in the National Register of Historic Places (NRHP):

- *Howard Schaff Residence, 27450 SW 177th Avenue (8DA9674)*
- *Clarence J. Parman Residence, 27250 SW 177th Avenue (8DA9675)*
- *Redland Golf Course (8DA10051)*

The FHWA transmitted the CRAS to the State Historic Preservation Officer (SHPO) on April 6, 2005, and a CRAS Addendum on June 28, 2005. The SHPO subsequently concurred with these findings on August 1, 2005 (DHR Project File No. 2005-3375).

The following is a summary description of the project's proposed improvements for the four Build Alternatives (refer to Proposed Alternatives section of the attached report for descriptions of Alternatives 1 & 2 [Two-lane divided roadway], and 3 & 4 [Four-lane divided roadway], with typical section widths of 148, 160, 206 & 172 feet, respectively), with respect to each of the three resources listed above:

Howard Schaff Residence, 27450 SW 177th Avenue (8DA9674):
This resource is located on the west side of Krome Avenue/SW 177 Avenue, between SW 278 and 272 Streets (adjacent to *8DA9675*). For all four Build Alternatives, no traffic noise impacts or air quality impacts will occur. The existing vehicular access to the property (as well as parking) will not be impacted. For both Alternatives 1 and 2, no additional right-of-way is required from the property. Alternatives 3 and 4 will include right-of-way acquisition from this property. Alternative 3 requires 12,365.4 square feet (0.28 acres) along the portion of the property closest to Krome Avenue. The needed right-of-way extends across the entire width of the parcel, which is 668.4 feet. The house is located on a 20-acre piece of property, and is set back from Krome Avenue. With the acquisition of this portion of property, the proposed improvements will be 187.5 feet from the house. Alternative 4 requires 1,002.6 square feet (0.02 acres) along the portion of the property closest to Krome Avenue. With the acquisition of this portion of property, the proposed improvements will be 204.5 feet from the house.

Alternatives 1 and 2 will have no effect on the resource, and the characteristics that qualify it for listing in the NRHP will not be affected. Both Alternatives 3 and 4 will require right-of-way acquisition on the east side of the property. The acquisition for both of these alternatives does not require the removal of contributing resources on the property, and it will not impact the character or function of this historic resource or affect its historic and architectural significance, which is primarily associated with the original owner and the building's architecture. Because the improvements will also be at-grade, the views to or from the historic resource will not be diminished, so there will not be any visual/aesthetic effects. Alternatives 3 and 4 will have no adverse effect on the NRHP-eligible resource and the characteristics that qualify it for listing in the NRHP (refer to Effects to Historic Resources section of the attached report).

Clarence J. Parman Residence, 27250 SW 177th Avenue (8DA9675):
This resource is located on the west side of Krome Avenue/SW 177 Avenue, between SW 278 and 272 Streets (adjacent to *8DA9674*). For all four build alternatives, no traffic noise impacts or air quality impacts will occur. The existing vehicular access to the property (as well as parking) will not be impacted. For both Alternatives 1 and 2, no additional right-of-way is required from the property. Alternatives 3 and 4 will include right-of-way acquisition from this property. Alternative 3 requires

2,471.6 square feet (0.06 acres) along the portion of the property closest to Krome Avenue. The needed right-of-way extends across the entire width of the parcel, which is 133.6 feet. The house is located on a 6-acre piece of property, and is set back from Krome Avenue. With the acquisition of this portion of property, the proposed improvements will be 51.2 feet from the house. Alternative 4 requires 200.4 square feet (0.005 acres) along the portion of the property closest to Krome Avenue. With the acquisition of this portion of property, the proposed improvements will be 68.2 feet from the house.

Alternatives 1 and 2 will have no effect on the resource, and the characteristics that qualify it for listing in the NRHP will not be affected. Both Alternatives 3 and 4 will require right-of-way acquisition on the east side of the property. The acquisition for both of these alternatives does not require the removal of contributing resources on the property, and it will not impact the character or function of this historic resource or affect its historic and architectural significance, which is primarily associated with the original owner and the building's architecture. Because the improvements will also be at-grade, the views to or from the historic resource will not be diminished, so there will not be any visual/aesthetic effects. Alternatives 3 and 4 will have no adverse effect on the NRHP-eligible resource and the characteristics that qualify it for listing in the NRHP (refer to Effects to Historic Resources section of the attached report).

Redland Golf Course (8DA10051)
This resource is located on the east side of Krome Avenue/SW 177 Avenue, north of SW 245 Terrace/SW 246 Street. For all four build alternatives, no traffic noise impacts or air quality impacts will occur. The existing vehicular access to the property (as well as parking) will not be impacted. Right-of-way acquisition is needed for all four Build Alternatives; however, the overall total size of the golf course is 117 acres. For Alternatives 1 and 2, 4,992 square feet (0.12 acres) is required along the portion of the property closest to Krome Avenue. The portion of property to be acquired is quite small and does not appear to encroach upon the actual golf course itself, but is confined to the course property perimeter closest to the road. Alternative 3 requires 48,151 square feet (1.10 acres) along the portion of the property closest to Krome Avenue. Although this alternative requires the largest amount of property of the four build alternatives, the acquisitions still remain at the perimeter of the golf course property closest to the road. Alternative 4 requires 9,126 square feet (0.21 acres) along the portion of the property closest to Krome Avenue. The portion of property to be acquired is quite small and does not appear to encroach upon the actual golf course itself, but is confined to the course property perimeter closest to the road.

Upon evaluating the four proposed build alternatives, it has been determined that Alternatives 1, 2, 3, and 4 will have no adverse effect on the NRHP-eligible golf course and the characteristics that qualify it for listing in the NRHP. Because the improvements will be at-grade, the views to or from the historic resource will not be diminished, so there will not be any visual/aesthetic effects. All Alternatives will require right-of-way acquisition on the west side of the property, which does fall within the historic property boundaries. The right-of-way acquisition for these alternatives does not

require the removal of contributing resources on the property, and it will not impact the character or function of this historic resource or affect its significance, which is primarily associated with the original golf course designer and the original front nine holes.

Based on information provided in the Section 106 Documentation and Determination of Effects Report, the following concurrences of effect are requested:
- *Howard Schaff Residence, 27450 SW 177th Avenue (8DA9674)*: "No effect" for Alternatives 1 and 2; "No adverse effect" for Alternatives 3 and 4;
- *Clarence J. Parman Residence, 27250 SW 177th Avenue (8DA9675)*: "No effect" for Alternatives 1 and 2; "No adverse effect" for Alternatives 3 and 4;
- *Redland Golf Course (8DA10051)*: "No adverse effect" for Alternatives 1, 2, 3 and 4.

This information is being provided in accordance with the provisions of the National Historic Preservation Act of 1966, as amended, which are implemented by the procedures contained in 36 C.F.R., Part 800, as amended, as well as the provisions contained in the revised F.S. Chapter 267. If you have any questions regarding the subject project, please contact Marjorie Bixby, District Environmental Administrator, or Catherine Owen, District Cultural Resource Coordinator, at (305) 470-5220.

Sincerely,

Marjorie B. for Alice Bravo

Alice N. Bravo, P.E.
District Planning and Environmental Management Engineer

ANB/cbo/cbo
Attachments

cc: Catherine Owen, FDOT
Monica Cejas, FDOT
Susanne Travis, FDOT
Marjorie Bixby, FDOT
Roy Jackson, FDOT
Amy Streelman, Janus Research

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Robert S. Wright
Acting Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, FL 32303

August 1, 2005

RE: DHR Project File Number: 2005-3375
Received by DHR: April 8, 2005; RAI received July 1, 2005
Financial Management No.: 249614-4-21-01
Project: *Cultural Resource Assessment Survey. SR 997/Krome Avenue/SW 117th Avenue ("Krome South PD&E Study") from SW 296th Street/Avocado Drive to SW 136th Street/Howard Drive*
County: Miami-Dade

Dear Mr. Wright:

Our office received and reviewed the above referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, 36 CFR Part 800: Protection of Historic Properties, Chapter 267, Florida Statutes, and applicable local ordinances. It is the responsibility of the State Historic Preservation Officer to advise and assist, as appropriate, Federal and State agencies and local governments in carrying out their historic preservation responsibilities; to cooperate with Federal and State agencies to ensure that historic properties are taken into consideration at all levels of planning and development; and to consult with the appropriate Federal agencies in accordance with the National Historic Preservation Act of 1966, as amended, on Federal undertakings that may affect historic properties and the content and sufficiency of any plans developed to protect, manage, or to reduce or mitigate harm to such properties.

A survey was conducted to identify historic structures or archaeological sites within the Area of Potential Effect (APE) of the proposed undertaking and to assess the effects of the project on those historic properties. Results of the survey and a request for additional information from our office resulted in the identification of six previously recorded buildings (8DA2764-2765, 8DA2817-2818, 8DA6762, and 8DA9603), one historic golf course (8DA10051), and 27 newly identified historic buildings (8DA9669-9672 and 9674-9696). Of the previously recorded buildings, one (8DA2817) has been demolished.

Based on the information provided, our office concurs that the *Howard Schaff Residence* (8DA9674) and the *Clarence J. Parman Residence* (8DA9675) are potentially eligible for listing on the National Register of Historic Places (NRHP). Sherry Anderson and Scott Edwards from our office reviewed the information regarding the *Redlands Golf Course* (8DA10051) and have concluded that this resource is also potentially eligible for listing. In addition to its association with the development of the Redlands community, the front nine holes were designed by prominent golf course architect, Robert "Red" Lawrence, in 1947. The original golf course has retained its historic physical integrity and is one of Lawrence's earliest designs.

Please note that we cannot determine the potential eligibility of the following resources at this time because they were inaccessible to the surveyors.

Site Name	FMSF #
16405 S.W. 177th Avenue	
17101 S.W. 177th Avenue	8DA9695
20345 S.W. 177th Avenue	
26430 S.W. 177th Avenue	

Because these resources are located within the project's APE, our office should be consulted about their potential eligibility when the properties become accessible. Although 8DA9695 was surveyed, the building is mostly obscured and the surveyor was unable to discern the style and plan of the house. We concur that the remaining buildings (8DA2764-2765, 8DA2818, 8DA6762, 8DA9603, 8DA9669-9672, 8DA9676-9694, and 8DA9696) are ineligible.

We look forward to further consultation with your office regarding potential effects to the significant properties listed herein. If you have any questions concerning our comments, please contact Sherry Anderson, Architectural Historian, Transportation Compliance Review Program, at 850-245-6432 or by electronic mail at *sanderson@dos.state.fl.us*.

Sincerely,

Barbara C. Mattick
Deputy SHPO

for Frederick P. Gaske, Director, and
State Historic Preservation Officer

XC: Ms. Alice Bravo, FDOT District Six, EMO
Ken Hardin, Janus Research

MEMORANDUM

To: Catherine Owen, Environmental Manager/FDOT, District 6

From: Amy Streelman, Preservation Planner/Janus Research

Date: June 15, 2005

Re: Cultural Resources Assessment Survey of (CRAS) of SR 997/Krome Avenue from S.W. 296th Street (Avocado Drive) to S.W. 136th Street (Howard Drive)
Addendum
Miami-Dade County

This memorandum is intended to fulfill the email request dated May 23, 2005 from Sherry Anderson at Division of Historical Resources for additional information regarding several resources related to the abovementioned report.

As part of this CRAS we recorded the Frame Vernacular building at 27727 S.W. 177th Avenue and it was assigned the Florida Master Site File (FMSF) number 8DA9673. However, it appears that this building was originally recorded during the Dade County Historic Survey in the early 1980s as 27750 Krome Avenue (8DA2764). We have looked at aerials dating from 1938 through the present day, and the house is sited in the same location. It appears that this building was given the wrong address on the Dade County Historic Survey form. We contacted the County regarding a location map for this resource, and they could not locate one. In the current CRAS report narrative it was noted that this house was relocated after World War II, but as mentioned earlier in this memorandum, this does not appear correct based on the most recent aerial analysis. We returned FMSF number 8DA9673 that is on the current FMSF form and updated the form using the 8DA2764 FMSF number. The address will remain 27727 S.W. 177th Avenue on the updated FMSF form. This updated FMSF form is attached to this memorandum.

As part of this CRAS a Ranch style house constructed circa 1955 was recorded at 27750 Krome Avenue and assigned the FMSF number 8DA9672. The 1955 construction date was noted in the Miami-Dade Property Appraiser's information. Also this house shows up on a 1963 aerial, but is not visible on a 1952 aerial. This form has been updated as well and is attached to this memorandum.

As requested, we recorded the Redland Golf Course (8DA10051) and did additional research concerning the golf course. Although a 1949 source had the course architect listed as E.L. Lawrence, further research indicated that the course architect was actually Robert "Red" Lawrence. We have also updated the form for the Redland Golf and Country Club and taken E.L. Lawrence off the form as the architect for the building. I contacted the club several times, and no one was able to provide me with information on the building architect. Aerial research does reveal that the building was constructed after the first nine holes of the golf course were developed. Neither the course nor the country club building is considered eligible for inclusion in the National Register of Historic

Places. Both the new golf course form (8DA10051) and the updated country club form (8DA9684) are attached to this memorandum.

The C-103 Canal was mentioned in the Krome Avenue roadway narrative in the CRAS report. During a telephone conversation on May 26, 2005 with Jim Barnes, an engineer at the Homestead field office of the South Florida Water Management District, he said the C-103 Canal was built between 1962 and 1964. This information came from the as-built plans from the Army Corps of Engineers dated 1965, and therefore the canal was built a couple of years before the plans were produced. We also reviewed aerials of the area, and this date was confirmed through the analysis. Therefore in the fourth paragraph on page 73 of our report, the sentence, "Within the project area, bridge construction over the Canal C-103 occurred in 1935; the bridge and its approaches were later improved in 1966" does not refer to the canal crossing at Krome Avenue. The C-103 (Mowry) Canal is a small canal system, and parts of the canal may be historic, however, not in the Krome South project area. Additionally, Julio Boucle of URS, the Consultant Project Manager, stated that the C-103 Canal at the Krome Avenue location will not be modified as part of the project improvements.

APPENDIX H

U.S. Fish and Wildlife Service and
Florida Fish and Wildlife Conservation Commission
Advance Notification Responses

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

APR 01 2004

RECEIVED
D.E.M.
APR 07 2004
DEPT. OF TRANSPORTATION
MIAMI, FLORIDA

Alice N. Bravo
Florida Department of Transportation
1000 Northwest 111th Avenue, Room 6103
Miami, Florida 33172-5800

Service Log No.: 4-1-04-TA-6593
Project: Krome Avenue, SW 136th Street to SW 296th Street
County: Miami-Dade

Dear Ms. Bravo:

Thank you for your letter dated February 27, 2004, in which you request the Fish and Wildlife Service's (Service) technical assistance on the project referenced above.

PROJECT DESCRIPTION

The project consists of constructing improvements to Krome Avenue from SW 136th Street to SW 296th Street. The purpose of the improvements is to address existing deficiencies of the roadway associated with safety, flooding, mobility, and hurricane evacuation. The Florida Department of Transportation (FDOT) proposes to analyze reconstruction and widening alternatives, as well as the "no build" alternative. The project is located in Miami-Dade County, Florida.

THREATENED AND ENDANGERED SPECIES

The Service has reviewed our Geographic Information Systems (GIS) database for recorded locations of federally listed threatened and endangered species on or adjacent to your property. The GIS database is a compilation of data received from several sources. Two active breeding colonies of the endangered wood stork (*Mycteria americana*) occur approximately 10 miles northwest of the project site. The project is located in the Core Foraging Areas (CFA) (within 18.6 miles) of these nesting colonies. The Service believes that the loss of wetlands within a CFA due to an action could result in the loss of foraging habitat for the wood stork. To minimize adverse effects to the wood stork, we recommend that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. Moreover, wetlands provided as mitigation should adequately replace the wetland functions lost as a result of the action.

TAKE PRIDE® IN AMERICA

No other federally listed species were identified on your project site. The Service has not conducted a site inspection to verify species occurrence or validate the GIS results. However, we assume that listed species occur in suitable ecological communities and recommend site surveys to determine the presence or absence of listed species. Ecological communities suitable for listed species can be found in the species accounts in the *South Florida Multi-Species Recovery Plan* (1999). This document is available on the internet at http://verobeach.fws.gov/Programs/Recovery/esvb-recovery.html.

We have also provided for your consideration two computer links: (1) http://verobeach.fws.gov/Programs/Permits/Section7.html and (2) http: //migratorybirds.fws.gov/. The first link is a table of species by county that are protected as either threatened or endangered under the Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*) for counties in south Florida. Because this table does not include State-listed species, contact the Florida Fish and Wildlife Conservation Commission at 772-778-5094 to identify those species potentially present in the vicinity. The second link provides species that the Service is required to protect and conserve under other authorities, such as the Fish and Wildlife Coordination Act of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*) and the Migratory Bird Treaty Act (40 Stat. 755; 16 U.S.C. 701 *et seq.*). A variety of habitats in south Florida occasionally provide resting, feeding, and nesting sites for a variety of migratory bird species. As a public trust resource, migratory birds must be taken into consideration during project planning and design.

Thank you for the opportunity to comment. If you have any questions, please contact John Wrublik at 772-562-3909, extension 282.

Sincerely yours,

Robert Trakin

for James J. Slack
Field Supervisor
South Florida Ecological Services Office

cc:
FWC, Vero Beach, Florida
DEP, West Palm Beach, Florida
EPA, West Palm Beach, Florida

COUNTY: MIAMI-DADE

DATE: 3/5/2004

COMMENTS DUE DATE: 4/4/2004

CLEARANCE DUE DATE: 5/4/2004

SAI#: FL200403085571C

MESSAGE:
REFERENCE SAI # FL199908270695C

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
COMMUNITY AFFAIRS	SOUTH FLORIDA WMD	ENVIRONMENTAL POLICY UNIT	
ENVIRONMENTAL PROTECTION			
X FISH and WILDLIFE COMMISSION			
STATE			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

X **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**

Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

DEPARTMENT OF TRANSPORTATION - ADVANCE NOTIFICATION - SR 977/KROME AVENUE/SW 177 AVENUE SOUTH, FROM SW 296TH STREET/AVOCADO DRIVE TO SW 136TH STREET - FINANCIAL MANAGEMENT NO.: 249614-4-21-01 - MIAMI-DADE COUNTY, FLORIDA.

To: Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)
3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

EO. 12372/NEPA

- [x] No Comment
- [ ] Comment Attached
- [ ] Not Applicable

Federal Consistency

- [x] No Comment/Consistent
- [ ] Consistent/Comments Attached
- [ ] Inconsistent/Comments Attached
- [ ] Not Applicable

From:

Division/Bureau: FWC - OES
Reviewer: Stephen R. Lau
Date: 3-30-04

RECEIVED BY FWC
MAR 09 2004
OFFICE OF ENVIRONMENTAL SERVICES

RECEIVED
APR 01 2004
OIP/OLGA

REC'D MAR 22 2004

APPENDIX I

United States Fish and Wildlife Service and
Florida Department of Agriculture and Consumer Services
Coordination Logs

June 2006

SUBJECT .

Protection status of State-listed endangered and threatened plants (in regards to State-listed plant species observed at the Owaissa Bauer Addition #1 property located in the southeast quadrant of the intersection of Krome Avenue and SW 264th Street

CONTACT

Dan Phelps - Florida Department of Agriculture and Consumer Services (FDACS) Division of Plant Industry

SUMMARY

Mr. Phelps stated that according to Florida Statutes Section 581.185(8), statutory protection of State-listed plants is not applicable if the clearing of land is performed by a public agency when acting in the performance of its obligation to provide service to the public.

April 2006

SUBJECT .

Protection status of plants species with Federal Candidate status (in reference to *Linum carteri* observed at the Owaissa Bauer Addition #1 property located in the southeast quadrant of the intersection of Krome Avenue and SW 264th Street.

CONTACT

John Wrublik – United States Fish and Wildlife Service (USFWS) South Florida Ecological Services Office

SUMMARY

Mr. Wrublik stated that Federal Candidate plant species do not receive Federal statutory protection. The USFWS requests that candidate species are voluntarily protected as if they were Federally listed.

APPENDIX J

Miami-Dade County Schools Correspondence

Superintendent of Schools
Alberto M. Carvalho

Miami-Dade County School Board
Perla Tabares Hantman, Chair
Dr. Lawrence S. Feldman, Vice Chair
Dr. Dorothy Bendross-Mindingall
Carlos L. Curbelo
Renier Diaz de la Portilla
Dr. Wilbert "Tee" Holloway
Dr. Martin Karp
Dr. Marta Pérez
Raquel A. Regalado

November 6, 2012

VIA ELECTRONIC MAIL

Ms. Teresita Alvarez, P.E.
District Six Consultant Management Engineer
Florida Department of Transportation
1000 N.W. 111 Avenue
Miami, Florida 33172
E-Mail: Teresita.alvarez@dot.state.fl.us

SUBJECT: Project Development and Environment (PD&E) Study
State Road 997/Krome Avenue/S.W. 177 Avenue South
From S.W. 296 Street/Avocado Drive to S.W. 136 Street/Howard Drive
Miami-Dade County
Financial Project ID Number: 249614-4-22-01
Federal Aid Project Number: N/A

Dear Ms. Alvarez:

Your recent letter addressed to Mr. Alberto M. Carvalho, Superintendent of Schools, regarding the above mentioned project was referred to my office. Please note that after review by appropriate District Departments, the following school has been identified as being located in close proximity to the project area:

NAME OF SCHOOL	SCHOOL ADDRESS	PRINCIPAL
Avocado Elementary School	16969 S.W. 294 Street Miami, Fla 33030	Ms. Crystal C. Coffey

Office of School Facilities
Mr. Jaime G. Torrens, Chief Facilities Officer • 1450 N.E. 2nd Avenue, Suite 923 • Miami, Florida 33132
305-995-1401 • 305-995-1489 (FAX) • jtorrens@dadeschools.net

Understanding that the Project is currently in its preliminary planning stage, please contact Miami-Dade County Public Schools District staff once the Project reaches Phase 1/Design so that key District and Florida Department of Transportation (FDOT) staff can meet to discuss the maintenance of traffic and other measures to ensure the safety of student pedestrians and to help minimize disruptions to school operations, including bus transportation.

If you have any questions or require additional information please contact Ms. Ana Rijo-Conde, Eco-Sustainability Officer, Planning, Design, and Sustainability, at 305-995-7285.

Sincerely,

Jaime G. Torrens
Chief Facilities Officer

JGT:dlam
L060 (R583)

cc: Mr. Alberto M. Carvalho
Mrs. Valtena Brown
Dr. Alexis Martinez
Ms. Ana Rijo-Conde
Mr. Jerry Klein
Mr. John Dibenedetto
Ms. Vivian G. Villaamil
Ms. Crystal C. Coffey
Mr. Gus Pego
Mr. Jorge Gomez

APPENDIX K

Section 4(f) Determination of Applicability Agency Correspondence

Florida Department of Transportation

JEB BUSH
GOVERNOR

1000 Northwest 111th Avenue
Miami, Florida 33172-5800

DENVER J. STUTLER, JR.
SECRETARY

District Six Planning and Environmental Management Office
1000 N.W. 111th Avenue, Room 6109
Miami, FL 33172

June 19, 2006

Mr. David C. Gibbs, Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Attention: Mr. Greg Williams, District Transportation Engineer

Subject: **Request for Determination of Section 4(f) Applicability**
SR 997/SW 177th Avenue/Krome Avenue 'South'
From: SW 296th Street/Avocado Drive
To: SW 136th Street/Howard Drive
Financial Management Number: 249614-4-22-01
Federal Aid Project Number: Not Assigned
County: Miami-Dade

Dear Mr. Gibbs:

The FDOT is proposing to reconstruct a 10-mile section of SR 997/SW 177th Avenue/Krome Avenue 'South'. This letter is to request that the FHWA make a formal Determination of Section 4(f) Applicability (DOA) on a property designated as a preserve adjacent to the above-referenced project limits. Please find the pertinent information enclosed as per the Project Development & Environment (PD&E) Manual, Part 2, Chapter 13-2.2.

Based on the information contained within this DOA, it is our opinion that Section 4(f) does not apply to the above-referenced property. Should you require any further information, please contact me or Susanne Travis at (305) 470-5220.

Sincerely,

Alice N. Bravo, P.E.
District Planning and Environmental Management Engineer

Attachments
cc: Monica Cejas, Marjorie Bixby, Susanne Travis

The FHWA [☒ does / ☐ does not] concur with the above determination.

Division Administrator
Federal Highway Administration

6/26/06
Date

RECYCLED PAPER

Florida Department of Transportation

JEB BUSH
GOVERNOR

1000 Northwest 111th Avenue
Miami, Florida 33172-5800

DENVER J. STUTLER, JR.
SECRETARY

District Six Planning and Environmental Management Office
1000 N.W. 111th Avenue, Room 6109
Miami, FL 33172

May 24, 2006

Mr. David C. Gibbs, Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Attention: Mr. Greg Williams, District Transportation Engineer

Subject: Request for Determination of Section 4(f) Applicability
SR 997/SW 177th Avenue/Krome Avenue 'South'
From: SW 296th Street/Avocado Drive
To: SW 136th Street/Howard Drive
Financial Management Number: 249614-4-22-01
Federal Aid Project Number: Not Assigned
Miami-Dade County, Florida

Dear Mr. Gibbs:

The FDOT is proposing to reconstruct a 10-mile section of SR 997/SW 177th Avenue/Krome Avenue 'South'. This letter is to request that the FHWA make a formal Determination of Section 4(f) Applicability (DOA) on a property designated as a preserve adjacent to the above-referenced project limits. Please find the pertinent information enclosed as per the Project Development & Environment (PD&E) Manual, Part 2, Chapter 13-2.2.

Based on the information contained within this DOA, it is our opinion that Section 4(f) does not apply to the above-referenced property. Should you require any further information, please contact me or Susanne Travis at (305) 470-5220.

Sincerely,

Alice N. Bravo, P.E.
District Planning and Environmental Management Engineer

ANB/cfp
Attachments

cc: Monica Cejas, Marjorie Bixby, Susanne Travis

SECTION 4(F) DETERMINATION OF APPLICABILITY (DOA)

SR 997/KROME AVENUE PROJECT DEVELOPMENT & ENVIRONMENT STUDY

FROM SW 296th STREET/AVOCADO DRIVE

TO SW 136th STREET/HOWARD DRIVE

Prepared By
Florida Department of Transportation

MAY 2006

SECTION 4(F) DETERMINATION OF APPLICABILITY (DOA)

INTRODUCTION

The Florida Department of Transportation (FDOT) is currently conducting a Project Development and Environment (PD&E) Study to widen and reconstruct the existing SR 997/Krome Avenue/SW 177th Avenue corridor. As part of this study, the FDOT has conducted a Section 4(f) Determination of Applicability for a potential Section 4(f) Property, named Owaissa Bauer Addition No. 1. This property is located within the project corridor and will be discussed in more detail within this report. The limits of the project include from Avocado Drive/SW 296th Street to Howard Drive/SW 136th Street, a distance of approximately ten (10) miles. The project is located in Sections 12, 7, 1 and 6; Township 57S; Sections 36, 31, 25, 30, 24, 19, 13, 18, 12, 7, 1 and 6; Township 56S; Sections 36, 31, 25, 30, 24, 19, 13 and 18; Township 55S; Ranges 38E and 39E ***(See Figure No. 1, Project Location Map)***. The section of Krome Avenue from the intersection of SW 136th Street northward to the intersection of SR-25/US 27/Okeechobee Road in Miami-Dade County is the subject of another PD&E Study that extends approximately twenty–three (23) miles.

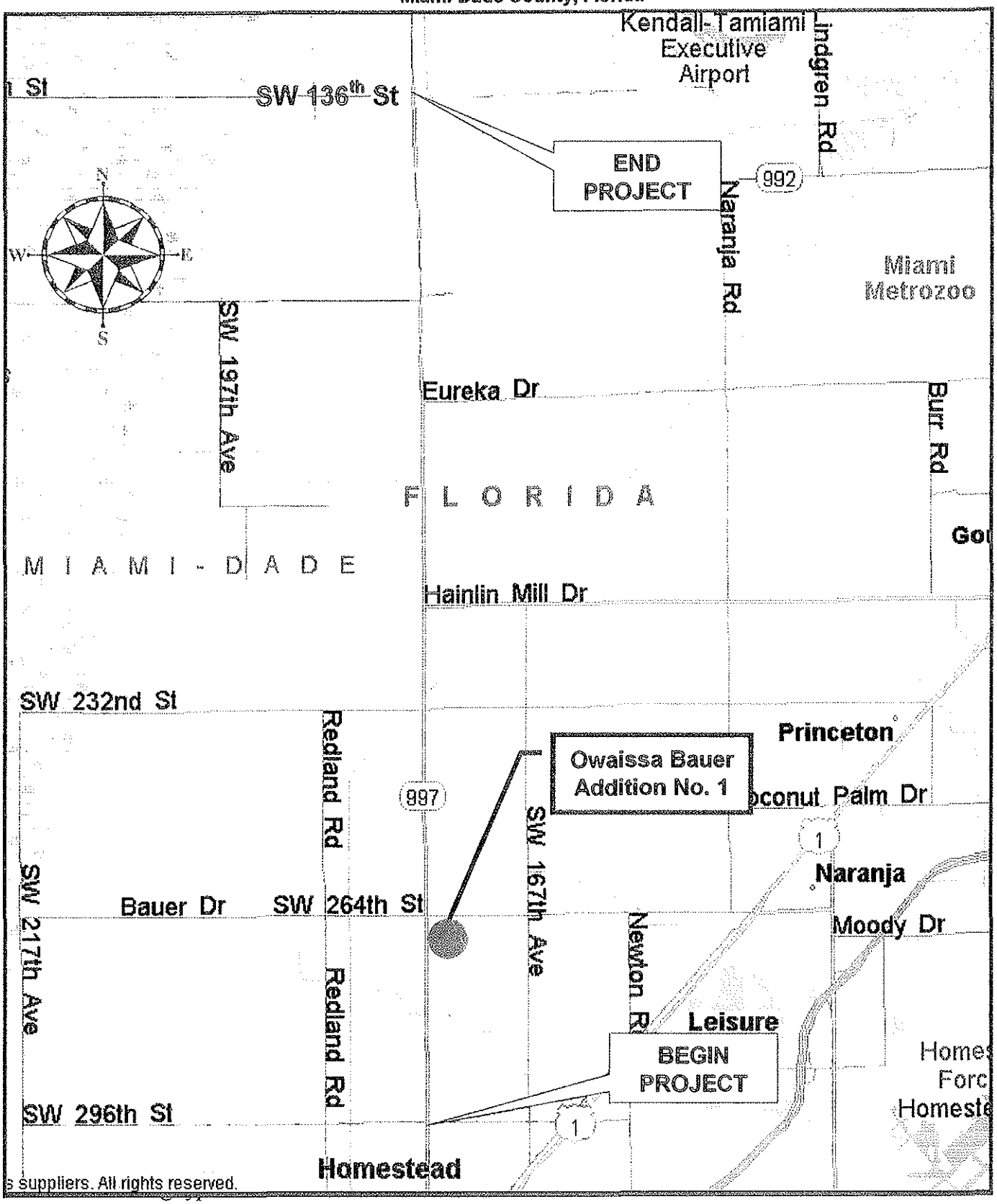
Krome Avenue is a major north-south rural/urban principal arterial that extends from SR-5/US 1 to SR-25/US 27/Okeechobee Road in Miami-Dade County. The project proposes to develop and analyze alternatives including a no build alternative, a Transportation System Management (TSM) alternative, and several build alternatives consisting of two, three, and four-lane typical sections. All alternatives will look at preserving the rural character of the corridor while providing safety and operational enhancements.

The Krome Avenue corridor has been the subject of extensive study and discussion for the past two decades. It provides regional connectivity from as far south as the Florida Keys to Broward County and points north. Further, it is one of only three evacuation routes serving the Florida Keys and southern Miami-Dade County. Other concerns include safety issues, roadway crashes, sight distance problems at intersections, inconsistent roadway shoulders, and inadequate signage.

Project objectives include the following: Improve roadway conditions; increase capacity to mitigate existing traffic congestion and to accommodate future traffic demand; improve drainage by providing the necessary stormwater treatment; improve access management; provide bicycle/pedestrian access and continuity; incorporate landscaping and aesthetic treatments, and maintain an adequate level of service for traffic during construction.

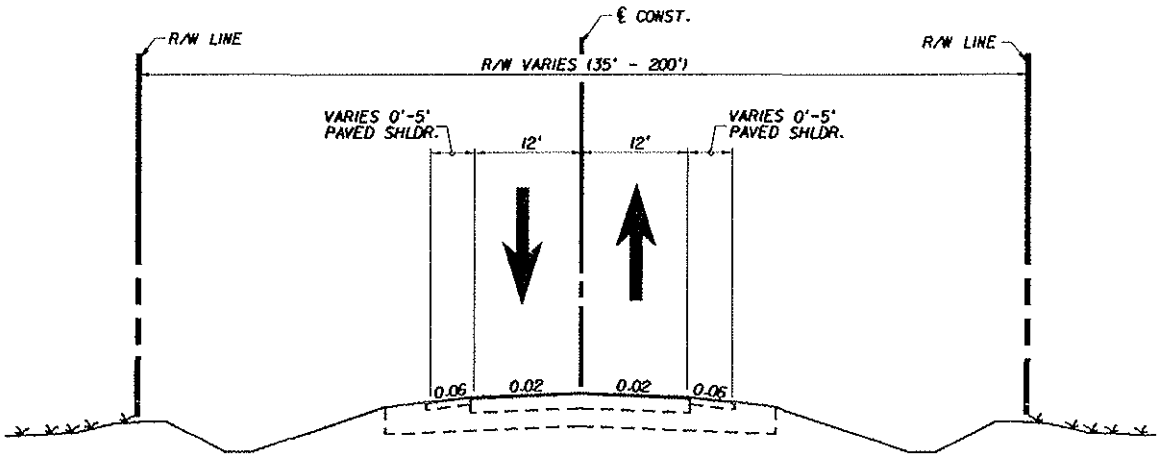
Project alternatives consider corridor options, typical section concepts, horizontal alignment concepts, intersection options, shared use path options, drainage treatment options, etc. Alternatives emphasize engineering, environmental, and socio-economic aspects. Other issues include a preliminary design analysis of bridge widening alternatives, maintenance of traffic, constructability issues, drainage, utilities, soils and geotechnical issues, socio-economic and environmental impacts, construction, and right-of-way costs.

Figure No. 1 – PROJECT LOCATION MAP
SR 997 / Krome Avenue
From SW 296th Street to SW 136th Street
Miami-Dade County, Florida



136th Street/Howard Drive varies slightly, consisting primarily of two twelve-foot (12') travel lanes (less than 12' at some locations), with variable paved shoulders (0-5') and soil/grass swales. The existing right of way varies from 35 feet to 200 feet (***See Figure No. 2 - Existing Typical Section***). There are no existing pedestrian or bicycle facilities along Krome Avenue or any of the adjacent side streets. There are no crosswalks and/or pedestrian pushbuttons provided at the signalized intersections.

Figure No. 2 - Existing Typical Section



SUPPORTING INFORMATION

1) A detailed map identifying the relationship of the proposed project alternatives to the Section 4(f) properties:

See Appendix, Figure Nos. 3, 4, and 5, Aerials showing the proposed project alternatives adjacent to the potential Section 4(f) property, Owaissa Bauer Addition No. 1.

Based on the four different alternatives considered, direct impacts to this property include the following: 0.82 acres of impact for Alternatives 1 & 2, 1.25 acres of impact for Alternative 3, and 1.0 acres of impact for Alternative 4.

2) Size and location of the affected Section 4(f) properties:

Section 4(f) properties can be divided into three categories: (A) publicly owned parks, recreation areas, and wildlife and waterfowl refuges, (B) historic and archaeological sites, and (C) properties which represent public multiple-use land holdings. They must also qualify as significant.

The potential Section 4(f) property, Owaissa Bauer Addition No. 1, is located on the southeast corner of Krome Avenue and SW 264th Street, including Section 13, Township 56 S, and Range 39 E. The entire property encompasses 9.35 acres ***(See Appendix, Figure No. 6 – Existing Conditions Aerial)***.

3) ***Ownership and type of Section 4(f) property (park, recreation, historic etc.):***

In January of 1996, the Miami-Dade County Department of Environmental Resources Management (DERM) - Office of Environmentally Endangered Lands (EEL) purchased the property, and the title was transferred to the State of Florida Trustees of the Internal Improvement Trust Fund (TIITF) on August 27, 2002. Both State Conservation and Recreation Lands (CARL) and DERM - EEL Program funds were utilized to purchase the property. The DERM - EEL Office currently manages the property. The Statement of Significance from the DERM - EEL Office ***(See Appendix, Figure No. 7 - Statement of Significance Letter dated April 11, 2006)*** indicates that the property is described as a critically imperiled pine rockland preserve that was originally purchased for the purpose of conservation in perpetuity, and is designated as a significant preserve that provides a significant habitat for plants and animals. However, based on coordination between the FDOT consultants and DERM - EEL staff in March 2006, the EEL staff has stated that this site is not designated as a park, recreation, or wildlife refuge. Therefore, under the definition of Section 4(f) properties, this site does not fall under any of the three subject categories.

4) ***Function or available activities on the properties:***

Based on a review of a DERM – EEL Office draft Biological Evaluation Report (BER) prepared for Owaissa Bauer Addition No. 1 (undated) and a field review conducted in March 2006 by FDOT Consultants, this site appears to function primarily as a natural pine preserve and also serves as a significant habitat for plants. From additional information contained in the BER and the Statement of Significance Letter, the DERM - EEL Office indicates that several migratory bird species and raptors have been observed on site. The site also contains one Federally-listed Candidate Plant, *Linum carteri var carteri*, which is found in clusters within the proposed right-of-way footprint for all alternatives on the east side of Krome Avenue. One Federally-listed Plant, the endangered *chamaesyce deltoidea ssp. adhaerens*, has also been identified within the preserve. However, this plant will not be impacted by any proposed alternatives. ***See Appendix, Figure No. 8 - Locations of State & Federally Listed Plants at Owaissa Bauer Addition No. 1 (includes listing of plants observed),*** **and** ***Appendix, Figure No. 9 - Listed Animal Species Observed at Owaissa Bauer Addition No. 1).***

Even though several migratory bird species and raptors have been observed at Owaissa Bauer Addition No. 1, this kind of usage appears to be incidental or secondary to the primary function of the site, which is to provide a habitat for rare plant species.

5) ***Description/location of all existing and planned facilities:***

Currently there are no existing or planned facilities on this site. Access control, interpretive

signs, and walking paths may be installed in the future. However, based on coordination with Emilie Young, Director of the DERM EEL Office, this site will continue to function as a preserve in the future. As a requirement of this site under the EEL Program, a management plan for the property will be developed within the next year.

6) ***Access (pedestrian, vehicular) and usage (approximate number of users/visitors):***

Access to the property is provided to pedestrians. Two asphalt roads enter into Owaissa Bauer Addition No. 1 from SW 264th Street, but both roads are closed off with metal locking gates.

Therefore, the site is closed to vehicular traffic. One of the roads extends south (approximately 300 feet) and ends near the center of the property. The second road extends south (approximately 550 feet) along the entire length of the western property boundary. A chain link fence extends along the eastern property boundary. Thick vegetation surrounds most edges of the site making access from pedestrians difficult. Legal access by pedestrians is currently available from Krome Avenue and SW 264th Street.

Because the preserve is an undeveloped, naturally vegetated site and does not have any existing facilities, usage from the general public appears to be low especially since the site is open by appointment only, according to additional information provided in the Statement of Significance letter package from the DERM – EEL Office to the FDOT.

7) ***Relationship to other similarly used lands in the vicinity:***

Immediately adjacent to the Owaissa Bauer Addition No. 1 site is another pineland property, named Owaissa Bauer Addition No. 2, which comprises a total of 20 acres. This site is located further east along SW 264th Street, and is designated as a Natural Forest Community by Miami-Dade County, and on the acquisition list for the EEL Program. In addition, Camp Owaissa Bauer is a 79-acre Miami-Dade County Park, which is located on the north side of SW 264 Street, further north and east of Krome Avenue. Owaissa Bauer Addition No. 1 site is also a pine rockland forest fragment which was historically connected to a larger natural area, part of which remains in Camp Owaissa Bauer Park, another pineland property that is under Miami-Dade County Parks and Recreation jurisdiction. However, both sites serve different purposes. The Owaissa Bauer Park is primarily a recreational park facility, and Owaissa Bauer Addition No. 1 is primarily a plant preserve.

8) ***Applicable clause affecting ownership, such as lease, easement, covenants, restrictions, or conditions, including forfeiture:***

Within the Owaissa Bauer Addition No. 1 site, 7.42 acres are subject to Natural Forest Community restrictions as designated within Chapter 24 - Section 49 (Tree Preservation and Protection) and Section 50 (Environmentally Endangered Lands Program) of the Miami-Dade County Code ***(See Appendix, Figure No. 10 - Code of Miami-Dade County, Chapter 24, Sections 49 & 50)***. The northern 55 feet and western 35 feet of the property are dedicated rights-of-way of Miami-Dade County. The property also is subject to terms of the Board of

Trustees of the Internal Improvement Trust Fund of the State of Florida - Lease Agreement No. 3941 ***(See Appendix, Figure No. 11 – Multiple Agency Lease Agreement)***, which leases the property to Miami-Dade County for the purpose of conservation and protection of public lands.

9) Unusual characteristics of the Section 4(f) properties (flooding, terrain, other features) that either reduce or enhance the value of all or part of the property:

As discussed previously, a number of rare State and Federal (Candidate and Listed) protected plant species enhance the value of this property. As noted in the Statement of Significance letter ***(See Appendix, Figure No. 7 – Statement of Significance Letter)***, the Florida Natural Areas Inventory designates pine rockland habitat as "G1 which means Critically imperiled globally." This is a designation which indicates extreme rarity (5 or fewer occurrences or less than 1000 individual plants) or because of extreme vulnerability to extinction due to some natural or man-made factor. Pine rockland habitat is extremely rare and exists in limited areas of the Florida Keys and the Bahamas.

10) Statement on significance from the official who has jurisdiction over the Section 4(f) property (regarding the entire property, not of the proposed use):

The FDOT solicited Statements of Significance from the corresponding officials regarding the potential Section 4(f) properties described in this DOA ***(Appendix, See Figure No. 11 - FDOT Request for Statement of Significance Letter)***. As discussed before, the DERM - EEL Office responded by providing a Statement of Significance letter ***(See Appendix, Figure No. 7 - Statement of Significance Letter)*** which states "the subject property, Owaissa Bauer Addition No. 1, is a critically imperiled pine rockland, acquired for the purpose of conservation, that will function as a natural pine rockland preserve in perpetuity." Also within the letter, the following statement is made, "the Owaissa Bauer Addition #1 is a natural preserve of statewide Significance."

11) Project activities which may result in proximity impacts to the resources, and attributes or features of the Section 4(f) properties which may be sensitive to proximity impacts from potential constructive use:

There will be no proximity impacts from the proposed project because the site will not be substantially impaired from functioning as a preserve. In addition, the proposed project will not substantially impair the activities, features, or attributes that qualify these resources as a preserve. Before construction of this project, the DERM – EEL Office indicated that they would be erecting a fence around the entire site so that no construction staging of equipment or other construction activities will take place within the site.

12) Grants Applicable to Section 4(f) Properties:

This site has been designated by the Board of County Commissioners as an Environmentally Endangered Lands (EEL) site and has been ranked No. 1 on the State CARL Bargain Share List as part of the "Dade Archipelago" project. The Dade Archipelago project was an

acquisition program started in the 1990's to purchase natural pine rockland sites within the Miami-Dade County area. Through this program, Miami-Dade County and the State acquired the site with 50-50 matching funds in order to protect its natural resources.

KROME AVENUE SOUTH
DETERMINATION OF APPLICABILITY
APPENDIX

FIGURE NO. 3

Krome Avenue PD&E Study
Illustrating Proposed Footprints of Alternatives 1 & 2
And EEL Right of Way Impacts
(From Approximate Station 213 + 20 to Approximate Station 219 + 50)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		PD&E STUDY DRAFT SUBJECT TO CHANGE	4-12-06		LEGEND: EXISTING R/W ALTERNATIVE 1 PARCEL LINES CENTER LINE OF CONSTRUCTION

URS
7650 Corporate Center Drive, Suite 400
Miami, Florida, 33331-1220
Ph : (305) 262-7466 - Fax : (305) 261-4017

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-997	MIAMI-DADE	249614-4-22-01

KROME AVENUE
ALTERNATIVES 1 & 2
EEL RIGHT OF WAY IMPACTS

FIGURE NO. 3

FIGURE NO. 4

Krome Avenue PD&E Study
Illustrating Proposed Footprints of Alternative 3
And EEL Right of Way Impacts
(From Approximate Station 213 + 20 to Approximate Station 219 + 50)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		PD&E STUDY DRAFT SUBJECT TO CHANGE	4-12-06		LEGEND: EXISTING R/W ALTERNATIVE 3 PARCEL LINES CENTER LINE OF CONSTRUCTION

URS
7650 Corporate Center Drive, Suite 400
Miami, Florida, 26331-1220
Ph : (305) 262-7466 - Fax : (305) 261-4017

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-997	MIAMI-DADE	249614-4-22-01

KROME AVENUE ALTERNATIVE 3 EEL RIGHT OF WAY IMPACTS

FIGURE NO. 4

FIGURE NO. 5

Krome Avenue PD&E Study
Illustrating Proposed Footprints of Alternative 4
And EEL Right of Way Impacts
(From Approximate Station 213 + 20 to Approximate Station 219 + 50)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		PD&E STUDY DRAFT SUBJECT TO CHANGE	4-12-06		LEGEND: EXISTING R/W ALTERNATIVE 4 PARCEL LINES CENTER LINE OF CONSTRUCTION

URS
7650 Corporate Center Drive, Suite 400
Miami, Florida, 26331-1220
Ph : (305) 262-7466 - Fax : (305) 261-4017

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-997	MIAMI-DADE	249614-4-22-01

KROME AVENUE
ALTERNATIVE 4
EEL RIGHT OF WAY IMPACTS

FIGURE NO.
5

FIGURE NO. 6

Krome Avenue PD&E Study
Illustrating Krome Avenue Project Corridor
Existing Conditions and the EEL Property
(From Approximate Station 213 + 20 to Approximate Station 219 + 50)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		PD&E STUDY DRAFT SUBJECT TO CHANGE	4-12-06		LEGEND: EXISTING R/W PARCEL LINES CENTER LINE OF CONSTRUCTION

URS
7650 Corporate Center Drive, Suite 400
Miami, Florida, 26331-1220
Ph : (305) 262-7466 - Fax : (305) 261-4017

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-997	MIAMI-DADE	249614-4-22-01

KROME AVENUE
EXISTING CONDITIONS
EEL PROPERTY

FIGURE NO. 6

FIGURE NO. 7

RESPONSE LETTER FROM OFFICIALS HAVING JURISDICTION OVER POTENTIAL SECTION 4(f) PROPERTY

For Owaissa Bauer Addition No. 1 Property

April 11, 2006
Ms. Emilie M. Young, Program Director
Environmentally Endangered Lands Program
Miami-Dade County Department of Environmental Resources Management

MIAMI-DADE COUNTY

Department of Environmental Resources Management
Environmentally Endangered Lands Program
33 SW 2nd Avenue, PH 2
Miami, Florida 33130-1540
T 305-372-6687 F 305-372-6759

miamidade.gov

RECEIVED
D.E.M.O.
APR 17 2006
DEPT OF TRANSPORTATION
FLORIDA

ADA Coordination
Agenda Coordination
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Building
Business Development
Capital Improvements
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Emergency Management
Employee Relations
Enterprise Technology Services
Environmental Resources Management
Fair Employment Practices
Finance
Fire Rescue
General Services Administration
Historic Preservation
Homeless Trust
Housing Agency
Housing Finance Authority
Human Services
Independent Review Panel
International Trade Consortium
Juvenile Assessment Center
Medical Examiner
Metropolitan Planning Organization
Park and Recreation
Planning and Zoning
Police
Procurement Management
Property Appraiser
Public Library System
Public Works
Safe Neighborhood Parks
Seaport
Solid Waste Management
Strategic Business Management
Team Metro
Transit
Urban Revitalization Task Force
Vizcaya Museum and Gardens
Water and Sewer

April 11, 2006

Ms. Alice N. Bravo, P.E.
Florida Department of Transportation
District Planning and Environmental Management Office
1000 NW 111th Avenue, Rm. 6109
Miami, FL 33172

Re: Statement of Significance—Owaissa Bauer Addition No. 1, Krome Avenue South Project Development & Environmental Study, FDOT Financial Mgmt No: 249614-4-21-1, Miami-Dade.

Dear Ms. Bravo:

We have reviewed your information request for the Krome Avenue South Project that is proposed to occur adjacent to EEL property, Owaissa Bauer Addition #1.

Our Statement of Significance is as follows:
The subject property, Owaissa Bauer Addition #1, is critically imperiled pine rockland, acquired for the purpose of conservation, that will function as a natural pine rockland preserve in perpetuity. This remnant pine rockland forest fragment was historically connected to a larger natural area, part of which remains in Camp Owaissa Bauer Park. The property is designated by the Board of County Commissioners as an Environmentally Endangered Lands (EEL) site and has been ranked #1 on the States Conservation and Recreation Lands (CARL) Bargain Share List as part of the "Dade Archipelago" project. The site was acquired with 50-50 matching funds by the County and the State in order to protect its natural resources.

The Florida Natural Areas Inventory designates pine rockland habitat as "**G1** = Critically imperiled globally" a designation which indicates extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor. Pine rockland habitat is extremely rare and exists in limited areas of the Florida Keys and the Bahamas. The Owaissa Bauer preserve area serves as significant habitat for plants and animals. Several migratory bird species and raptors have been observed on site. The Owaissa Bauer Addition #1 is a natural preserve of Statewide significance.

This Department has the responsibility to protect and manage the subject property in accordance with Ch. 24-50 of the Miami-Dade County Code and

Delivering Excellence Every Day

Figure No. 7 - Statement of Significance Letter

to regulate impacts to this natural forest community in accordance with Ch. 24-49 of the County Code.

Our response to your request for information regarding this site is attached, along with the following documents:

1. EEL Ordinance (Ch. 24-50)
2. Natural Forest Community regulations (Ch24-49)
3. Owaissa Bauer Addition #1 Biological Evaluation
4. Owaissa Bauer Addition #1 FY 2004-2005 Workplan & Budget
5. Owaissa Bauer Addition #1 Plant List compiled by Institute for Regional Conservation

Please contact me at (305) 372-6687 should you have any further questions or concerns.

Sincerely,

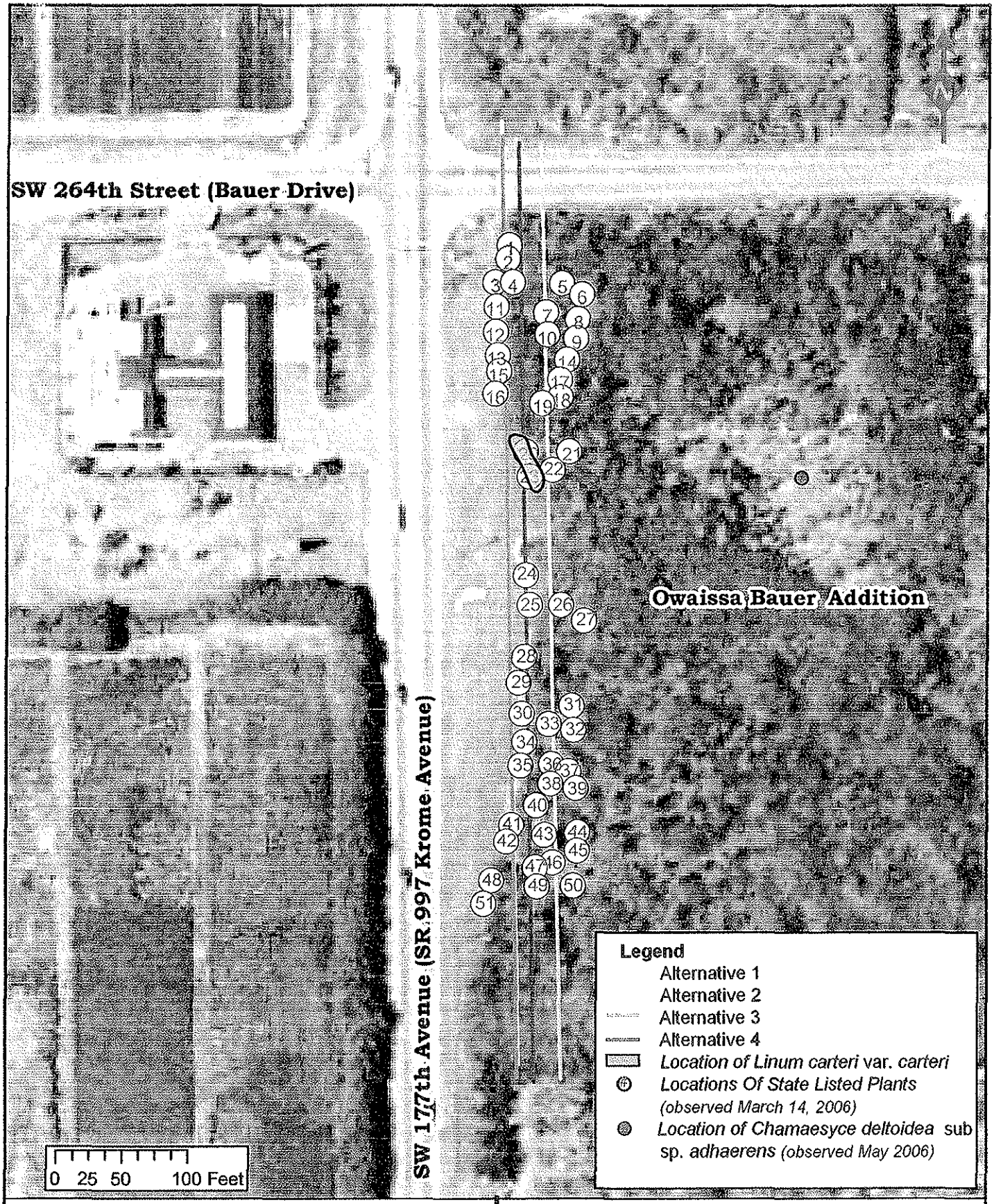
Emilie M. Young

Emilie M. Young, Program Director
Environmentally Endangered Lands Program

Figure No. 7 - Statement of Significance Letter

FIGURE NO. 8

Locations of State Listed Plants at Owaissa Bauer Addition No. 1 (includes listing of plants observed - March 14, 2006 and May 2006)



Source: Miami-Dade County IT Dept.
Project: Krome Ave South PD&E Study
Location: Miami-Dade County, Florida
Proj. No.: 249614-4-22-01
Scale: 1 inch = 100 feet

Locations Of State & Federally Listed Plants At Owaissa Bauer

FLORIDA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL MGMT. OFFICE

Exhibit No. 8

Key to State Listed Plants Observed At Owaissa Bauer Addition

Location #	Listed Species Observed
1	*Senna mexicana* var. *chapmanii*(Chapman's wild sensitive plant, FL-T), *Argythamnia blodgettii* (Blodgett's wild mercury, FL-E), *Smilax havanensis* (Everglades greenbrier, FL-T)
2	*Smilax havanensis, Argythamnia blodgettii, Koanophyllon villosum* (Florida shrub thoroughwort, FL-E)
3	*Coccothrinax argentata* (Florida silver palm, FL-T), *Smilax havanensis, Senna mexicana* var. *chapmanii*
4	*Senna mexicana var. chapmanii, Tetrazygia bicolor* (tetrazygia, FL-T), *Smilax havanensis, Byrsonima lucida* (locustberry, FL-T), *Coccothrinax argentata*
5	*Senna mexicana* var. *chapmanii, Smilax havanensis, Coccothrinax argentata, Crossopetalum ilicifolium* (Christmasberry, FL-T), *Zamia pumila* (coontie, FL-C), *Pteris bahamensis* (Bahama ladder brake, FL-T)
6	*Tetrazygia bicolor, Smilax havanensis, Argythamnia blodgettii*
7	*Crossopetalum ilicifolium, Koanophyllon villosum, Senna mexicana* var. *chapmanii, Coccothrinax argentata*
8	*Senna mexicana* var. *chapmanii, Zamia pumila, Smilax havanensis, Crossopetalum ilicifolium*
9	*Zamia pumila, tetrazygia bicolor, Crossopetalum ilicifolium, Tragia saxicola* (Florida Keys noseburn, FL-T), *Senna mexicana* var. *chapmanii, Coccothrinax argentata*
10	*Coccothrinax argentata, Zamia pumila, Smilax havanensis, Argythamnia blodgettii, Koanophyllon villosum*
11	*Koanophyllon villosum, Coccothrinax argentata*
12	*Senna mexicana* var. *chapmanii, Smilax havanensis*
13	*Smilax havanensis, Coccothrinax argentata , Tetrazygia bicolor, Koanophyllon villosum*
14	*Smilax havanensis, Coccothrinax argentata , Tetrazygia bicolor, Senna mexicana* var. *chapmanii*
15	*Senna mexicana* var. *chapmanii, Smilax havanensis, Zamia pumila*
16	*Senna mexicana* var. *chapmanii, Koanophyllon villosum, Zamia pumila, Pteris bahamensis, Smilax havanensis*
17	*Zamia pumila, Senna mexicana* var. *chapmanii, Smilax havanensis*
18	*Koanophyllon villosum, Smilax havanensis, Senna mexicana* var. *chapmánii, Zamia pumila, Coccothrinax argentata*
19	*Tetrazygia bicolor, Coccothrinax argentata, Smilax havanensis*
20	*Zamia pumila, Coccothrinax argentata, Tetrazygia bicolor, Myrcianthes fragrans* (Simpson's stopper, FL-T)
21	*Tetrazygia bicolor, Smilax havanensis*
22	*Tetrazygia bicolor, Byrsonima lucida, Koanophyllon villosum*
23	*Koanophyllon villosum, Senna mexicana* var. *chapmanii, Argythamnia blodgettii, Crossopetalum ilicifolium*
24	*Senna mexicana* var. *chapmanii, Argythamnia blodgettii, Koanophyllon villosum, Zamia pumila, Coccothrinax argentata*
25	*Senna mexicana* var. *chapmanii, Tetrazygia bicolor*
26	*Coccothrinax argentata, Smilax havanensis, Tetrazygia bicolor*
27	*Tetrazygia bicolor, Pteris bahamensis, Coccothrinax argentata*

Location #	Listed Species Observed
28	*Senna mexicana* var. *chapmanii, Argythamnia blodgettii*
29	*Argythamnia blodgettii*
30	*Senna mexicana* var. *chapmanii, Koanophyllon villosum, Coccothrinax argentata, Zamia pumila, Lantana depressa* (pineland lantana)
31	*Senna mexicana* var. *chapmanii, Tetrazygia bicolor*
32	*Tetrazygia bicolor*
33	*Tetrazygia bicolor, Byrsonima lucida*
34	*Byrsonima lucida, Coccothrinax argentata, Senna mexicana* var. *chapmanii*
35	*Byrsonima lucida, Coccothrinax argentata, Senna mexicana* var. *chapmanii, Tetrazygia bicolor*
36	*Coccothrinax argentata, Tillandsia fasciculata var. densispica* (cardinal airplant. FL-E)
37	*Coccothrinax argentata*
38	*Tetrazygia bicolor*
39	*Coccothrinax argentata*
40	*Coccothrinax argentata, Byrsonima lucida, Senna mexicana* var. *chapmanii, Tetrazygia bicolor, Angadenia berteroi* (pineland golden trumpet, FL-T)
41	*Zamia pumila, Senna mexicana* var. *chapmanii, Argythamnia blodgettii*
42	*Koanophyllon villosum, Tetrazygia bicolor, Zamia pumila, Senna mexicana* var. *chapmanii*
43	*Senna mexicana* var. *chapmanii, Angadenia berteroi, Zamia pumila, Koanophyllon villosum*
44	*Koanophyllon villosum, Coccothrinax argentata, Senna mexicana* var. *chapmanii*
45	*Koanophyllon villosum, Tetrazygia bicolor, Zamia pumila*
46	*Senna mexicana* var. *chapmanii, Koanophyllon villosum*
47	*Zamia pumila, Senna mexicana* var. *chapmanii*
48	*Argythamnia blodgettii, Rhynchosia parvifolia* (small-leaf snoutbean, FL-T), *Koanophyllon villosum*
49	*Senna mexicana* var. *chapmanii, Koanophyllon villosum*
50	*Zamia pumila, Tetrazygia bicolor, Coccothrinax argentata, Senna mexicana* var. *chapmanii*
51	*Lantana depressa*

FL= Florida Department of Agriculture and Consumer Affairs - The state lists of plants are categorized into endangered, threatened and commercially exploited, and are administered and maintained by the Florida Department of Agriculture and Consumer Services via Chapter 5B-40, F.A.C.
E = Endangered
T = Threatened
C = Commercially Exploited

FIGURE NO. 9

Listed Animal Species Observed at Owaissa Bauer Addition No. 1

Figure No. 9 – List of Animals Species Observed - Owaissa Bauer Addition No. 1

Common Name	Scientific Name
Downy woodpecker	**Piciodes pubescens*
Common yellowthroat	**Geothlypis trichas*
Blue-Gray gnatcatcher	**Polioptila caerulea*
Cardinal	**Cardinalis sp.*
Rufous-sided towhee	**Pipilo erythrophthalmus*
Red-bellied woodpecker	**Melanerpes carolinus*
Blue Jay	**Cyanocitta cristata*
Mockingbird	**Mimus polyglottos*
Young marsh hawk	**Circus cyaneus*

* Not on State of Florida Fish & Wildlife Conservation Commission Threatened or Endangered Species Listing, but protected under the US Migratory Bird Treaty Act.

FIGURE NO. 10

CODE OF MIAMI-DADE COUNTY, CHAPTER 24, SECTION 49 – TREE PRESERVATION & PROTECTION, AND SECTION 50 - ENVIRONMENTALLY ENDANGERED LANDS PROGRAM

Code of Miami-Dade County

Chapter 24

Section 49 – Tree Preservation & Protection

Section 50 – Environmentally Endangered Lands Program

Figure No. 10 - Code of Miami-Dade County, Chapter 24, Sections 49 & 50

DIVISION 2. TREE PRESERVATION AND PROTECTION

Sec. 24-49. Permits for tree removal and relocation, improperly issued permits, violation of permit conditions, exemptions from tree removal permits; mortgagee exemption from liability.

(1) It shall be unlawful for any person, unless otherwise permitted by the terms of this article, to do tree removal work or to effectively destroy any tree, or to effectively destroy any understory in a natural forest community, without first obtaining a permit from the Department.

(2) No municipal or County official shall issue a tree removal permit that does not comply with the provisions of this article. Any such permit shall be void.

(3) It shall be unlawful for any person to violate or not comply with any of the conditions of a Miami-Dade County tree removal permit.

(4) The following activities are exempt from tree removal permits:

(a) Removal of trees within the yard area of an existing single-family residence, provided the trees are not within a natural forest community, and are not specimen trees. This exemption does not apply to trees which are growing on County rights-of-way adjoining existing single-family residences;

(b) Removal of trees for the construction of a new single-family residence, provided that:

(i) The lot is one (1) acre or less in size (43,560 square feet), if an AU zoned lot, or one-half (1/2) acre or less in size (21,780) square feet, for any other zoned lot; and

(ii) The lot is being developed as the principal residence of the owner-builder; and

(iii) The lot is not within an area designated as a natural forest community; and

(iv) The trees are not specimen trees.

(c) Removal of any dead tree.

(d) Removal of trees within State-approved plant nurseries and botanical gardens, provided said trees were planted and are growing for the display, breeding, propagation, sale or intended sale to the general public in the ordinary course of business.

(e) Removal of trees for the establishment, maintenance and operation of a bona fide grove or bona fide tree nursery, except when the proposed tree removal is to occur in a natural forest community designated under Resolution No. 1764-84 or under subsequent revisions of the natural forest community maps or when the proposed tree removal will affect specimen trees as defined herein. Any person desiring to remove trees pursuant to this provision shall obtain written approval from the Department prior to the commencement of any such activities under this exemption.

(f) Removal of any of the following tree species (provided the activity is not within a natural forest community, in which case a permit shall be required, but all application and permit fees shall be waived by the department):

(i) Melaleuca quinquenervia (cajeput or paperbark tree).

(ii) Casuarina spp. (Australian pine, beefwood).

(iii) Schinus terebinthifolius (Brazilian pepper).

(iv) Bischofia javanica (bishopwood).

(v) Ricinus communis (castorbean).

(vi) Psidium guajava (guava).

(vii) Albizia lebbek (woman's tongue).

(viii) Acacia auriculaeformis (earleaf acacia).

(ix) Schefflera actinophylla (Queensland Umbrella Tree).

(x) Araucaria heterophylla (Norfolk Island Pine).

(xi) Metopium toxiferum (poison wood).

(xii) Adenanthera pavonina (red sandalwood).

(xiii) Cupaniopsis anacardioides (carrotwood).

(xiv) Dalbergia sissoo (Indian dalbergia, sissoo).

(xv) Ficus microcarpa (=R. nitida; =F. retusa varnitida) (laurel fig).

(xvi) Flacourtia indica (governor's plum).

(xvii) Hibiscus tiliaceus (mahoe).

(xviii) Leucaena leucocephala (lead tree).

(xix) Mimosa pigra (catclaw mimosa).

(xx) Thespesia populnea (seaside mahoe).

(g) Removal of any tree which has been destroyed or effectively destroyed by an Act of God, or by acts outside of the control of any person, individually or otherwise, who has or had a legal, beneficial or equitable interest in the real property upon which such tree is located, which acts could not have been prevented by the exercise of reasonable care by any such person, individually or otherwise, who has or had a legal, beneficial or equitable interest in the real property upon which such tree is located. Where a tree has been destroyed or effectively destroyed by acts outside of the control of a person who has or had a legal, beneficial or equitable interest in the real property upon which such tree is located, which acts could not have been prevented by the exercise of reasonable care by such person, this provision shall be construed to impose joint and several liability upon the person(s) destroying or effectively destroying such tree, and to exempt from liability for such destruction or effective destruction the person who has or had a legal, beneficial or equitable interest in the real property upon which such tree is located.

(h) Removing, trimming, cutting or altering of any mangrove tree or removal of any tree located upon land which is wetlands as defined in Section 24-5. Trees located upon land which is wetlands as defined in Section 24-5 and mangrove trees located anywhere in Miami-Dade County shall be subject to the permitting requirements of Article IV of this chapter.

(i) Removal of tree within a bona fide fruit grove for the express purpose of converting said bona fide fruit grove to another bona fide agricultural purpose, provided however, that the owner of the real property upon which the bona fide fruit grove is planted has entered into a covenant agreement with Miami-Dade County in the form approved by the Board of County Commissioners, which covenant stipulates that said property shall only be used for bona fide agricultural purposes for a period of five (5) years fromthe date of execution. The form for said covenant agreement shall be approved by the Board of County Commissioners by resolution concurrently with the approval of this ordinance so

that all covenant agreements submitted pursuant to this provision can be executed and accepted by the director of DERM and then recorded in the Official Records of Miami-Dade County without the necessity of additional public hearings. In the event that the provisions of said covenant are not complied with, the Director of DERM may commence an action in law or equity to ensure adherence with the replanting requirements contained in Section 24-49.4 of the Miami-Dade County Code.

(5) Any mortgagee with respect to property upon which any violation of this tree ordinance has occurred shall not be liable for such violation unless, prior to said violation, said mortgagee has foreclosed upon said property or participated in the management or control of said property, or unless said mortgagee has effected or caused the tree ordinance violations occurring on said property.

(6) Notwithstanding the provisions of Section 24-31(7) herein, if actions or omissions constituting a violation of this article occurred at a time when the completed actions or omissions were not prohibited by law, such completed actions or omissions shall not constitute a violation of this article.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.1. Permits Generally.

Tree removal permits are required for the removal or relocation of any tree not specifically exempted under Section 24-49(4). The Department shall provide permit application forms which shall be used by permit applicants. An owner, agent of the owner, or lessee of a property may apply for a tree removal permit. If the permit application is a lessee or agent of the owner, a statement from the owner of the property indicating that the owner has no objection to the proposed tree removal shall be submitted withthe application. The permit applicant shall submit to the Department a completed application form. Permit application forms shall be accompanied by two (2) sets of site plans which are subject to review and approval by the Department. The site plan shall include the locations of all existing tree resources and all proposed structures or utilities which may require removal or relocation of trees. The Department may require that said plans be prepared by either a landscape architect, architect or an engineerregistered in the State of Florida. If the submitted site plan does not provide sufficient information to determine which trees will be affected by the proposed development, the Department may require that a tree survey of the site be prepared and submitted to the Department for review.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.2. Review and evaluation of permit applications, natural forest communities standards, specimen tree standards.

A review of each completed tree removal permit application shall be conducted by the Department. This review and all actions taken by the Department under the provisions of this article shall be conducted using best available practices from biology, botany, forestry, landscape architecture and other relevant fields, and shall be conducted in a manner that is consistent with all applicable goals, objectives and policies in the Comprehensive Development Master Plan for Miami-Dade County, Florida. Upon receiptof a completed permit application, the Department shall determine whether the site contains any portion of a natural forest community, specimen trees or any other trees subject to the provisions of this article as follows:

(1) If a site contains any portion of a natural forest community, then the provisions of Section 24-49.2(l) shall apply. If any person is in doubt as to whether a particular property has been designated as a natural forest community, said person may request a written determination from the Department. Said written determination shall state

whether or not a particular property has been so designated by the Miami-Dade County Commission in the forest community maps under Resolution 1764-84 and shall be prepared bythe Department within twenty (20) days of receipt of said request.

Any property owner of a designated natural forest community site may request that the Department verify the designated boundaries of a specific natural forest community site or may request that a specific site be deleted from the approved natural forest community maps. Requests for verification of the designated boundaries of a specific natural forest community site or the deletion of a specific site from the approved maps shall be made in writing to the Department. Upon receipt of such requests, Departmental staff shall inspect the site and make a determination whether the approved boundaries accurately reflect the current boundaries of a natural forest community as defined herein, or whether a site should be deleted from the approved maps. If it is determined that the approved boundaries of a specific natural forest community site are not longer accurate, the Director or his designee shall modify the approved boundary of the natural forest community. One (1) copy of the modified boundary shall be furnishedto the person who originated the request within thirty (30) days of receipt of the original request and another copy shall be made permanently available at the Department for reference by the public. If it is determined that a specific natural forest community site in its entirety no longer meets the definition of a natural forest community as defined herein, the Director shall recommend to the Board of County Commissioners that the site be deleted from the approved natural forest community maps.

(2) If a site contains any specimen trees, then the provisions of Section 24-49.2(II) shall apply.

(3) If there are trees present on a site other than any portion of a natural forest community or specimen trees, then the replacement provisions of Section 24-49.4 shall apply.

(4) In the event that a site contains any combination of natural forest community, specimen trees or other trees, then shall be applied in proportion to the presence of each type of tree or Sections 24-49.2(I), 24-49.2(II), and 24-49.4 community.

The standards to be applied in reviewing tree removal permit applications involving natural forest communities or specimen trees are as follows:

(I) *Natural Forest Communities Standards.*

(1) Upon receipt of an application for tree or understory removal work in a natural forest community, Departmental staff shall verify that the site currently meets the definition of a natural forest community as defined herein. If Departmental staff determine that a site no longer meets the definition of a natural forest community, then the Director shall recommend to the Board of County Commissioners that the site be deleted from the natural forest community maps. Upon approval by resolution of the Board of County Commissioners, the site will no longer be subject to the provisions of Section 24-49.2(I), but may nevertheless be subject to the provisions of Sections 24-49.2(II) and 24-49.4. In the event that Departmental staff determine that the site currently meets the definition of a natural forest community as defined herein, but the boundary line shown on the approved maps no longer accurately reflects the boundary of a natural forest community as defined herein, the boundary of the natural forest community asshown on the approved maps shall be modified by the Director or his designee. One (1) copy of the modified boundary shall be furnished to the property owner and another copy shall be made permanently available at the Department for reference by the public. If the boundaries of a natural forest community

are modified, only that area encompassed within the modified boundary of the natural forest community shall be subject to the provisions of this section.

(a) Except as provided in Section 24-49.2(l)(1)(c) below, a permit shall not be issued to clear more than ten (10) percent of the canopy and understory of any hardwood hammock natural forest community or more than twenty (20) percent of the canopy and understory of any pineland natural forest community, provided said sites are five (5) acres or greater. If a site has a total area of less than five (5) acres and the natural forest community covers all or a portion of the site, a permit may be issued to clear upto one-half (1/2) acre within a hammock natural forest community and up to one (1) acre within a pineland natural forest community, only if the clearing of ten (10) percent or twenty (20) percent, respectively, does not allow some use of the property.

(b) The remaining portions of all natural forest community sites, outside of the areas where tree and understory removal have been permitted by the Department, shall be deemed preserve areas and shall be left in a natural state. Additional clearing of trees or understory shall be prohibited in these preserve areas, except as authorized by other provisions of this article. Firebreaks for pineland natural forest community preserves shall be permitted, and the total area encompassed by the firebreaks (up to a maximum of ten (10) percent of the natural forest community site) shall not be included in the total area which is permitted to be cleared, pursuant to Section 24-49.2(l)(1)(a) and (c). Required dedicated public rights-of-way and required public utility easements in pineland and hammock natural forest communities shall be excluded (up to a maximum of ten (10) percent of the natural forest community site) from the total areas permitted to be cleared, pursuant to Section 24-49.2(l)(1)(a) and (c). The criteria fordetermining which portion of a natural forest community shall be preserved are as follows:

(i) Whether the preservation area affords maximum protection to rare, threatened and endangered species.

(ii) Whether the preservation area affords maximum protection to areas of high wildlife utilization such as, but not limited to, nesting or breeding areas.

(iii) Whether the preservation area is located to minimize the number of trees and understory vegetation that is to be removed and disturbed for development.

(iv) Whether the preservation area is located to protect the geological and archaeological value of the site.

(v) Whether the preservation area is located contiguous with another natural forest community.

(c) Permits for tree and understory removals within natural forest communities that are issued in accordance with Section 24-49.2(l)(1)(a) and (b) above shall not require any tree or understory replacement. As an alternative to Section 24-49.2(l)(1)(a). above, a permit may be issued to clear up to an additional ten (10) percent of a pineland natural forest community, provided that tree

and understory replacement are a requirement of the permit. Said tree and understory replacement shall provide for the replacement of one hundred (100) percent canopy coverage equal to the square footage of the additional area to be cleared regardless of the actual tree canopy contained therein to account for the replacement of the trees and understory, pursuant to the provisions of Section 24-49.4(1)(b)(i).

(d) Any permit issued for the removal of trees and understory within a natural forest community shall include a specific requirement which allows a minimum of fifteen (15) days for the salvaging of native plant materials within the area which is permitted to be cleared. However, any person desirous of salvaging plant materials must first have authorization from the permittee or owner of the property, which authorization shall not be unreasonably withheld. The Department shall maintain a list of persons interested in salvaging native plant materials and shall notify them immediately upon issuance of such a permit.

(2) Alternatives to the provisions of Section 24-49.2(I)(1). In order to provide for unique design considerations for the replacement requirements in Section 24-49.2(I)(1)(c) above, and to address natural forest community sites which are within the 1990 Urban Development Boundary, the following shall apply:

(a) Alternative tree and understory replacement plans may be submitted for projects which require mitigation, pursuant to Section 24-49.2(I)(1)(c) above, that are outside of the 1990 Urban Development Boundary. Said alternative plan shall be prepared by a landscape architect or other individual knowledgeable in the field of natural area restoration, and shall indicate the deviations from the standard requirement and justification for approval.

(b) Alternative tree and understory replacement and preservation plans may be submitted for projects which affect natural forest communities which are located within the 1990 Urban Development Boundary and which cannot meet the express terms of Section 24-49.2(I)(1). In such cases, the applicant shall have the burden of demonstrating that a proposed project meets the intent of this article and that the provisions of Section 24-49.2(I)(1) cannot be met.

(i) At a minimum, an alternative tree and understory replacement and preservation plan shall include:

1. A statement sealed by a landscape architect registered in the State of Florida that indicates that he has prepared the submitted plan and that the intent of this article can effectively be met through the submission of an alternative plan; provided, however, if the project only encompasses a single family residence with ancillary facilities, then said statement and plan may be made by an individual knowledgeable in the field of natural area restoration;

2. The proposed location of all vegetation preservation and replantings (consisting exclusively

of native species), all property lines, and all proposed or existing structures, driveways and utility easements; and

3. A tabulation that identifies any deviations from the requirements of Section 24-49.2(l)(1) and explicitly provides for equivalent compensation by alternative replanting (consisting exclusively of native species) or trust fund contributions.

(ii) Approval of the plan shall be determined by the Department. The Department shall consider the following factors in evaluating the alternative preservation plan:

1. Whether the proposed plan preserves a portion of the natural forest community.

2. Whether the proposed plan provides for on-site or off-site replanting, including understory replanting.

3. Whether the proposed plan provides for an equitable contribution to the Miami-Dade County Tree Preservation Trust Fund when the minimum preservation standards of Section 24-49.2(l)(1) are not met.

(3) Modified preservation and replacement plan based upon justifiable, detrimental reliance allowed. In order to address these cases in which a person has purchased natural forest community property in justifiable, detrimental reliance upon written representations of Department staff made prior to the enactment of Chapter 24-49 of the Code of Miami-Dade County regarding replacement and preservation requirements for said property, the following shall apply:

Any owner of a natural forest community property who has purchased natural forest community property in justifiable, detrimental reliance upon written representations of Department staff made prior to the enacting of Chapter 24-49 [Article IV] of the Code of Miami-Dade County may submit to the Department an application for approval of a modified replacement and preservation plan which shall incorporate the replacement and preservation requirements reflected in the agreement relied upon. In such cases, the applicant shall have the threshold burden of demonstrating to the Department and the Board of County Commissioners the detrimental, justifiable reliance which provides the basis for his application.

(a) The Department shall make its recommendation to the Board of County Commissioners, and the Board of County Commissioners shall make its decision, for denial or approval with conditions of the modified replacement and preservation plan. In evaluating the proposed modified preservation and replacement plan, and in making the threshold determination of whether the applicant has purchased natural forest community property in justifiable, detrimental reliance upon written representations of Department staff madeprior to the enactment of Chapter 24-49 [Article IV] of the Code of Miami-Dade County, the Department shall make its recommendation, and the Board of County

Commissioners shall make its decision, based upon the following factors:

(i) At a minimum, the application for modified replacement and preservation plan shall reflect that the elements provided for in Section 24-49.2(I)(2)(b)(i)1, 2, and 3 above are included in the proposed plan, provided, however, that, if the Board of County Commissioners determines that the applicant purchased natural forest community property in justifiable, detrimental reliance upon written representations of Department staff made prior to enactment of Chapter 24-49 of the Code of Miami-Dade County, and if thewritten representations relied upon did not address tree replacement or tree compensation requirements, then the tree replacement or tree compensation requirements applicable at the time of such justifiable, detrimental reliance may be made a part of the modified replacement and preservation plan.

(ii) In addition to the elements provided for in Section 24-49.2(I)(2)(b)(i)1, 2, and 3, the application for modified replacement and preservation plan shall include information regarding the following factors:

1. The nature of the written representations relied upon: Whether the representations by the Department could be construed to be a final determination regarding preservation and replacement requirements for the subject property; and

2. The existence of a permit or written consent agreement with the Department: Whether a tree removal permit or consent agreement with the Department was entered into by the owner of the subject property or his immediate predecessor in title prior to purchase of the subject property; and

3. The circumstances of the property purchase: Whether (a) the purchase of the subject property occurred before or after enactment of Chapter 24-49 of the Code of Miami-Dade County, and (b) the purchase of the subject property occurred close in time to the date of the written representations relied upon, and (c) the owner has legal representation or other professional assistance in negotiating and concluding said purchase; and

4. Subsequent dealings with the Department: Whether the applicant had dealings with the Department occurring subsequent to the date of the written representations relied upon and prior to the date of purchase of the subject property.

The Board of County Commissioners shall hold a public hearing concerning the application. A notice of the time and place of said public hearing shall be published in a newspaper of general circulation in Miami-Dade County a

minimum of seven (7) days prior to the public hearing. Said notice shall include a brief description of the proposed replacement and preservation plan and the location of the subject natural forest community property.

(iii) Appeal from denial of modified preservation and replacement plan. Any person aggrieved by any decision of the Board of County Commissioners pursuant to this Section 24-49.2(I)(3) may seek judicial review in accordance with the Florida Rules of Appellate Procedure.

(II) *Specimen Trees Standards.*

(1) *Specimen trees application.* Specimen trees shall be preserved whenever reasonably possible. Upon receipt of an application to remove a specimen tree, the Department shall consider the following factors in evaluating said application:

(a) Size and configuration of the property.

(b) Size and configuration of any proposed development.

(c) Location of the tree relative to any proposed development.

(d) Whether or not the tree can be preserved under the proposed plan or any alternative plan.

(e) Health, condition and aesthetic qualities of the tree.

(f) Whether the tree poses a threat to persons or property.

(2) *Alternate plans.* If, upon review of the factors enumerated in Section 24-49.2(II)(1), the Department determines that a specimen tree cannot reasonably be preserved under the proposed plan, then the applicant shall provide an alternate plan when feasible, which shall include preservation of the specimen tree and design alterations consistent with the scope and intent of the initially-proposed plan. Alterations consistent with the scope and intent of the initially-proposed plan may include, but shall not be limited to:

(a) An adjustment of building orientation on a site.

(b) An adjustment of lot lines within a site proposal for more than one (1) lot when said adjustment will not cause an unreasonable loss of usable space. An applicant shall have the burden of proof in the determination of what constitutes an unreasonable loss of usable space.

(3) *Specimen tree relocation.* If preservation of the specimen tree and any alternate design consistent with the scope and intent of the initial plan are mutually exclusive, then the Department may issue a permit to relocate the specimen tree. If the tree removal permit requires relocation, then the applicant shall be required to relocate the tree in accordance with the standards set forth in Section 24-49.6.

(4) *Removal of specimen trees.* If relocation of the specimen tree is not feasible, due to the size, health, location, species or any other factor, then a permit may be issued for removal, and tree replacement shall be required.

(5) *Replacement requirements for specimen trees.* As a condition of the issuance of a tree removal permit for the removal of a specimen tree, tree

replacement requirements shall be twice those specified in Section 24-49.4(2)(c). In the event that replacement is not feasible on-site, then alternative off-site replacement shall be required, or, as a last alternative, there shall be a contribution to the Miami-Dade County Tree Trust Fund for the full value of the replacement trees. Notwithstanding the above, there shall also be an equitable contribution to the Miami-Dade County Tree Trust Fund for the irreplaceable loss of the aesthetic and environmental contributions of the specimen tree(s), according to the contribution schedule established by the Board of County Commissioners, pursuant to Section 24-49.9.

(6) *Exemptions from specimen tree replacement requirements.* An applicant may be exempt from the replacement requirements of Section 24-49.2(II)(5), but subject to the tree replacement requirements in Section 24-49.4(2)(c), under the following circumstances:

(a) Upon submittal of a statement from a landscape architect registered in the State of Florida which indicates that a specimen tree, due to disease, condition, growth habit or any other reasonable botanical factor, does not provide the aesthetic or environmental contribution associated with a specimen tree. Said statement shall include the specific reason(s) for the claimed exemption from the provisions of Section 24.49.4(2).

(b) When preservation of the specimen tree would cause a foreseeable risk to property.

(c) When a site contains more than one (1) specimen tree, and fifty (50) percent or more of the existing specimen trees and at least fifty (50) percent of the existing specimen tree canopy area is preserved.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.3. Preliminary review of projects involving tree removal or relocation.

The Department shall review and comment on the following actions: Any application for zoning relief which requires a public hearing before the Miami-Dade County Community Zoning Appeals Board or the Board of County Commissioners; applications for plat approval; administrative site plan review; applications for approval of development plans by the developmental impact committee and the South Florida Regional Planning Council; proposed plans for new roadways or improvements to highway design projects; proposed plans for new public park and recreational areas and other public facilities. This review procedure shall determine if a tree removal permit is required under Section 24-49, and whether the following standards, when applicable, are adhered to:

(1) Any proposed action that does not involve specimen trees or development in a natural forest community shall be subject to the replacement standards in Section 24-49.4.

(2) Development within natural forest communities or involving specimen trees:

(a) If it is determined that the proposed development site is within a natural forest community or involves removal of a specimen tree, the standards set forth in Section 24-49.2 shall apply. Proposed site actions that are not in accordance with said standards shall receive a recommendation of denial from the Department.

(b) Notwithstanding any provision of this Code, no County or municipal officer,

agent, employee or Board shall approve, grant or issue any building permit, certificate of use and occupancy (except for changes in ownership), platting action (final plat, waiver of plat or equivalent municipal platting action) or zoning action requiring a public hearing before the Miami-Dade County Community Zoning Appeals Board or the Board of County Commissioners for any land use involving division of property into parcels lessthan five (5) acres within natural forest communities without obtaining the prior written recommendation of the DERM or his designee. The DERM or his designee shall issue his written recommendation of approval only if the DERM or his designee determines that a preservation area equivalent in size to the minimum preservation area required for the site under Section 24-49.2(l) has been designated prior to the proposed action.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.4. Replacement requirements for tree removal.

(1) *Tree replacement requirements.* As a condition of the issuance of a tree removal permit, the permittee shall be required to replace trees that are authorized to be removed under the provisions of this article. The number of trees and number of species of trees required for replacement shall be determined according to the procedures contained herein. When the replacement canopy area exceeds ten thousand (10,000) square feet, replacement shall be described in a landscape replacement plan which shall meet the minimum requirements of Section24-49.4(3), and no tree removal permit shall be issued until said plan has been approved by the Department, except as provided in Section 24-49.4(4).

(a) The following are exempt from this section:

(i) All tree removal activities included in Section 24-49(4).

(ii) All tree removal permits affecting natural forest community sites which meet the specific preservation requirements of Section 24-49.2(l)(1)(a) and (b).

(iii) Trees which have been successfully relocated, pursuant to Section 24-49.6.

(b) Natural forest community replacement requirements.

(i) Pursuant to Section 24-49.2(l)(1)(c)., tree and understory replacement for pineland natural forest communities shall include the following:

1. All species proposed for replanting shall be native to Miami-Dade County's pinelands.

2. For each additional one-half (1/2) acre which is permitted to be cleared, fifty (50) replacement pine trees (Pinus elliotti var. densa) shall be provided. Said pine trees shall meet the standards in either Section 24-49.4(4)(a)(i) or (ii); if the pine trees meet the standards of Section 24-49.4(4)(a)(i), then six hundred twenty-six (626) pineland understory and ground cover plants which meet the standards of Section 24-49.4(4)(a)(ii) shall be provided; if the pine trees meet the standards of Section 24-49.4 (4)(a)(ii), then six hundred seventy-six (676) pineland understory and ground cover plans which meet the standards of Section 24-49.4(4)(a)(ii) shall be provided. The number of replacement plants for areas which are less than one-half (1/2) acre shall be determined on a prorated basis.

3. The diversity of understory and ground cover species provided shall be maximized to the greatest extent possible based on availability of materials.

4. An eighty (80) percent survival rate after one (1) year shall be guaranteed for all pineland natural forest community replacement plantings.

(ii) As an alternative to Section 24-49.4(1)(b)(i) above, a monetary contribution, equal to the cost of the replacement plants, labor costs for installation, and survival rate guarantee costs, may be made to the Miami-Dade County Tree Trust Fund. Said funds shall be utilized by the County to reestablish pineland on County-owned property or to purchase pinelands for preservation purposes.

(iii) All other applications for the removal of trees or understory within natural forest communities which meet the requirements of Section 24-49.2(I)(1)(a) and (b) or Section 24-49.2(I)(2) shall not require any tree or understory replacement.

(c) Specimen tree replacement requirements. As required in Section 24-49.2(II)(5), the replacement requirements for the removal of a specimen tree shall be twice those specified in this section, except as noted in Section 24-49.2(II)(6).

(2) *Procedures for determining tree replacement requirements.* The Department shall determine the total number of replacement trees required for the issuance of a tree removal permit according to the following procedural steps:

(a) *Step 1: Determining existing tree canopy coverage on-site.* The area of existing tree canopy coverage of a site shall be determined by the Department, using one (1) or any combination of the following methods: Review of aerial photography; on-site inspection; and review of a tree survey. The Department may require the applicant to submit a tree survey for the purpose of this determination.

(b) *Step 2: Determining impact area of proposed project.* The area of existing canopy coverage which will be affected (impact area) by the applicant's proposed development shall be determined by the Department. This determination shall be based on a site plan and completed tree removal permit application form submitted to the Department by the applicant.

(c) *Step 3: Determining number of replacement trees required to be planted.* The total number of trees required for replacement shall be based on the area of impact and the category of replacement tree selected by the applicant. Each replacement tree shall compensate for a portion of the tree canopy lost in the impact area. The following table shall be used as a standard for determining the required number of replacement trees:

TABLE INSET:

Category Replacement Tree:	*Portion of Impact Area that each replacement tree compensates for in square feet:*
Shade Tree 1	500
Shade Tree 2	300
Palm Tree 1	300
Palm Tree 2	100
Small Tree	200

Any combination of shade trees, palm trees, or small trees shall be acceptable replacement, provided the total number of trees from all replacement categories compensate for the lost canopy. In the event that a replacement tree actually has more canopy coverage at the time of planting than the amount of credit allowed under the tree replacement formula above, then the applicant shall receive full credit for the canopy coverage provided by the replacement tree at the time of planting. The applicant shall submit a list of proposed replacement trees on a form provided by the Department,

except when the total number of replacement trees exceeds twenty (20), and then the applicant shall be required to submit a landscape replacement plan consistent with the provisions of Section 24-49.4(3). Proposed replacement lists or plans are subject to Departmental approval. The Department shall approve proposed replacement trees that are consistent with the standards of Section 24-49.4(3).

(d) *Step 4: Location of replacement trees.* Specific placement of replacement trees on-site shall be determined by the applicant. If the site cannot accommodate the required replacement trees because of insufficient planting area as determined by the Department, then the applicant shall be required to plant replacement trees at an off-site location subject to Departmental approval, or, as a last alternative, shall provide an equitable contribution to the Miami-Dade County Tree Trust Fund to compensate for those replacement trees which cannot be accommodated on site. The amount of the contribution shall be determined according to the provisions of Section 24-49.9. If any applicant is in doubt as to whether a particular site can sufficiently accommodate the required number and species of replacement trees as initially determined by the Department, then the applicant shall submit a statement prepared by a landscape architect registered in the State of Florida, indicating whether, in his professional opinion, the site can accommodate the required number of trees and species. Upon receipt of said statement, the Department shall reevaluate its initial determination and provide the applicant with a revised determination of requirements. In the event that the landscape architect is in agreement with the Department's determination of available planting space, however, due to design considerations, the applicant would elect to propose an alternative landscape enhancement plan or an equitable contribution to the Miami-Dade County Tree Trust Fund, then the provisions of Section 24-49.4(4) or 24-49.2(II)(5), respectively, shall apply.

(e) *Step 5: Minimum species diversity standards.* When more than ten (10) trees are required to be planted in accordance with the provisions of this section, a diversity of species shall be required. The number of species to be planted shall be based on the overall number of trees required. The applicant shall be required to meet the following minimum diversity standards:

TABLE INSET:

Required Number of Trees	*Minimum Number Species of*
11--20	2
21--50	4
51 or more	6

Permittees shall not be required to plant in excess of six (6) species. The number of trees of each species planted shall be proportional to the number of species required. A minimum of fifty (50) percent of all replacement trees planted shall be native to Miami-Dade County, and no more than thirty (30) percent of the replacement trees shall be palms. However, when native trees are removed, all replacement trees shall be native species. As an alternative to the minimum species diversity required herein, anapplicant may propose an alternative species diversity in an alternative landscape enhancement plan described in Section 24-49.4(4).

(f) *Step 6: Minimum standards for replacement trees.*

(i) All replacement trees shall have a minimum quality of a Florida No. 1 grade or better.

(ii) The Department shall maintain a list of species for each category of replacement tree. This list may be amended from time to time, as necessary. Replacement tree heights shall be determined by overall height measured from

where the tree meets the ground to the top-most branch.

1. All category 1 replacement shade trees shall be a minimum of twelve (12) feet in height at the time of planting and at maturity should have a canopy coverage of five hundred (500) square feet under normal growing conditions.

2. All category 2 replacement shade trees shall be a minimum of eight (8) feet in height at the time of planting and at maturity should have a canopy coverage of five hundred (500) square feet under normal growing conditions.

3. All category 1 replacement palm trees shall have a minimum height of ten (10) feet at the time of planting and at maturity should have a canopy coverage of three hundred (300) square feet under normal growing conditions.

4. All category 2 replacement palm trees shall have a minimum height of three (3) feet at the time of planting and at maturity should have a canopy coverage of one hundred (100) square feet under normal growing conditions.

5. All replacement small trees shall have a minimum height of six (6) feet at the time of planting and at maturity should have a canopy coverage of two hundred (200) square feet under normal growing conditions.

(3) *Requirements for a landscape replacement plan.* Except as provided in Section 24-49.4(4), a landscape replacement plan shall be submitted to the Department by the permit applicant when a minimum of ten thousand (10,000) square feet of replacement canopy is required under the provisions of Section 24-49.4(2). All landscape replacement plans shall meet the following minimum standards:

(a) The number of trees, number of species of trees, and size of trees proposed for planting shall be consistent with Section 24-49.4(2).

(b) The applicant shall submit a site plan that includes the proposed replacement locations of all replacement plantings and tree relocations, all property lines, and all proposed and existing structures, driveways and utility easements.

(c) The canopy spread of any tree that is proposed for preservation shall be shown on the plan. Where a portion of the canopy of a tree or trees shall be removed without removal of the trees, a notation shall be made on the plan.

(4) *Alternatives to the provisions of Sections 24-49.4(2) and 24-49.4(3).* Instead of replacing all affected trees pursuant to the provisions of Sections 24-49.4(2) and 24-49.4(3), an applicant may propose to relocate existing trees or propose a unique project design which provides reasonable assurance that the project complies with the intent to maintain tree canopy.

(a) Generally, as an exception to the requirements of Section 24-49.4(2), and in order to provide for development of exceptional or unique landscape designs which cannot meet the express terms of Section 24-49.4(2), an applicant may submit an alternative landscape enhancement plan. As an alternative to the requirements in Section 24-49.4 (2)(c), tree replacement credit may be granted for planting shrubs or ground covers, based upon the following table, provided, however, that a minimum of fifty (50) percent of the required canopy replacement is achieved by using shade trees and palm trees as required by Section 24-49.4(2)(c).

TABLE INSET:

Category of Tree Alternative	*Portion of Impact Area hat Each Tree Alternative Shrub,*

Shrub or Ground Cover:	*or Ground Cover Compensates for in Square Feet:*
Shrub 1 (including small palms)	60
Shrub 2/Ground Cover	30

(i) All category 1 tree alternative shrubs shall be a minimum of two (2) feet in height at the time of planting and at maturity should have a canopy coverage of sixty (60) square feet under normal growing conditions.

(ii) All category 2 tree alternative shrubs or ground covers shall have a root system sufficient to sustain growth and at maturity should have a canopy coverage of ten (10) to twenty (20) square feet under normal growing conditions.

(b) The applicant shall have the burden of demonstrating that a design meets the intent of this article. At a minimum, an alternative landscaping enhancement plan shall include, without limitation:

(i) A statement, prepared by a landscape architect registered in the State of Florida, which indicates that the intent of this article can be effectively met through the submission of the alternative design; and

(ii) A site plan, prepared by a landscape architect registered in the State of Florida, that includes the proposed location, scientific name or description of all vegetation to be preserved or planted, all property lines, and all proposed or existing structures, driveways and utility easements; and

(iii) A tabulation that identifies any deviations from the requirements of Section 24-49.4(2) and explicitly provides tree replacement alternatives.

(c) The Department shall approve an alternative landscape enhancement plan when:

(i) The design preserves and incorporates existing vegetation; and

(ii) The design exceeds the minimum requirements or equivalent of Section 24-49.4(2).

(d) Preservation credit for relocated trees. Permittees who successfully relocate trees shall receive full credit for the relocated trees and the tree replacement requirements herein shall not apply to such relocated trees. All relocated trees shall meet the standards set forth in Section 24-49.6 for tree relocation.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.5. Tree protection requirements during construction.

(1) During site development, protection requirements for trees designated for preservation under an approved tree removal permit shall include, but not be limited to, the following:

(a) Protective barriers shall be placed around each tree, cluster of trees, or the edge of the preservation area no less than six (6) feet (in radius) from the trunk of any protected tree cluster or preservation area unless a lesser distance is specified by the Department. Protective barriers shall be a minimum of four (4) feet above ground level and shall be constructed of wood, plastic or metal, and shall remain in place until development is completed and the Department has authorized their removal. Protective barriers shall be in place prior to the start of any construction.

(b) Understory plants within protective barriers shall be protected.

(c) No excess oil, fill, equipment, building materials or building debris shall be placed

within the areas surrounded by protective barriers, nor shall there be disposal of any waste material such as paints, oils, solvents, asphalt, concrete, mortar or any other material harmful to trees or understory plants within the areas surrounded by protective barriers.

(d) Trees shall be braced in such a fashion as to not scar, penetrate, perforate or otherwise inflict damage to the tree.

(e) Natural grade shall be maintained within protective barriers. In the event that the natural grade of the site is changed as a result of site development such that the safety of the tree may be endangered, tree wells or retaining walls are required.

(f) Underground utility lines shall be placed outside the areas surrounded by protective barriers. If said placement is not possible, disturbance shall be minimized by using techniques such as tunnelling or overhead utility lines.

(g) Fences and walls shall be constructed to avoid disturbance to any protected tree. Post holes and trenches located close to trees shall be dug by hand and adjusted as necessary, using techniques such as discontinuous footings, to avoid damage to major roots.

(2) Exceptions to the provisions of Section 24-49.5(1). Exceptions to the requirements of Section 24-49.5(1) shall be approved only when the permittee receives specific written authorization from the DERM or his designee. The DERM or his designee shall not issue his written approval unless the DERM or his designee determines that the affected tree(s) can be adequately protected without meeting the requirements of Section 24-49.5(1), or due to exceptional circumstances it is not practical or reasonable to meet the requirements of Section 24-49.5(1).

(3) If the requirements of Section 24-49.5(1)(a) through (g) are not adhered to by the permittee and the trees are effectively destroyed, then all such trees shall be replaced according to the standards of Section 24-49.4(2), in addition to being subject to the penalty provisions of Sections 24-29, 24-30 and 24-31 of the Code of Miami-Dade County.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.6. Tree relocation standards.

The relocation of any tree that is subject to the provisions of this article shall be consistent with the following minimum standards:

(1) Trees other than palms:

(a) Tree roots shall be severed in such a manner as to provide a root ball which is sufficient to ensure survival of the tree when relocated. A sufficiently-sized planting hole shall be provided at the relocation site to ensure successful regrowth.

(b) After root severing, adequate time shall be allowed prior to replanting to ensure survival of the tree(s). After root severing and prior to relocation, tree(s) shall be watered a minimum of twice weekly. After relocation, tree(s) shall be watered a minimum of twice weekly until the tree(s) are established.

(c) During removal and transportation of the tree, the root ball and vegetative portions of the tree shall be protected from damage from wind or injury.

(d) Any tree that dies or becomes nonviable within one (1) year of relocation shall be replaced according to the standards set forth in Section 24-49.4(2).

(2) Palms:

(a) A ball of earth at least one (1) foot from the base of the tree shall be moved with the tree.

(b) Fronds shall be securely tied around the bud prior to relocation and shall remain securely tied around the bud during the entire relocation process and for a minimum of one (1) week after relocation.

(c) The bud shall be protected from damage or injury during relocation.

(d) Any palm that dies or becomes nonviable within one (1) year of relocation shall be replaced according to the standards set forth in Section 24-49.4(2).

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.7. Permit issuance, confirmation of natural forest community maps, existing permits, approvals and consent agreements.

(1) The Department shall deny an application, or approve an application and issue a permit (subject to conditions, limitations or restrictions), for the activity proposed under the permit application, provided:

(a) The required application fee and permit fee is submitted to Miami-Dade County.

(b) A performance bond, if required, has been posted. As a condition of issuing a tree removal permit, the Department may require the posting of a performance bond to guarantee compliance with all other conditions, limitations, and restrictions of the tree removal permit (the permitted activity), including, without limitation, planting of all required replacement trees. The bond shall be equivalent to one hundred (100) percent of the estimated cost of the permitted activity and may be in the form of a letter ofcredit, surety, cash, or certificate of deposit. All performance bonds shall remain in force for a minimum of either one (1) year after the actual completion date of the permitted activity (to ensure that any replanted trees which perish are replaced), or until viability of all replanted trees has been achieved, whichever occurs last. However, at the discretion of the DERM or his designee, performance bonds may be partially released in phases based upon partial completion of planting or other permit requirements.

(c) All required plans or covenants are submitted and are in compliance with the standards herein.

(2) All permits shall clearly specify all conditions, limitations and restrictions required by the Department. The permit applicant shall acknowledge that he fully understands and agrees to comply with all said conditions, limitations or restrictions by signing the permit prior to its issuance.

(3) All tree removal permit applications which remain incomplete for a period of one hundred twenty (120) days shall be denied. A new tree removal permit application shall be required for all work previously proposed under a permit application which has been denied.

(4) The natural forest community maps approved by the Board of County Commissioners on December 12, 1984, by Resolution No. 1764-84, all tree removal permits issued pursuant to Chapter 26B, Department approvals, and all consent agreements executed in order to resolve alleged violations of Chapter 26B of the Code of Miami-Dade County, Florida, are hereby confirmed and shall remain in full force and effect, and all conditions, restrictions and limitations contained therein shall continue to apply, and compliancetherewith shall be enforceable pursuant to the provisions of this chapter.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.8. Permit fees; schedule.

The Miami-Dade County Department of Environmental Resources Management shall charge and collect application and permit fees and trust fund contributions at the rates established by separate administrative order which shall not become effective until approved by the Board of County Commissioners. Applications from government agencies for tree removals in areas dedicated to public use may, in the discretion of the DERM, be exempted from application fees and permit fees.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

Sec. 24-49.9. Prohibited plant species.

(1) With exception of Ficus benjamina, the list of exotic pest plant species that may not be sold, propagated or planted anywhere in Miami-Dade County pursuant to Policy 8I of the Conservation Element of the Comprehensive Development Master Plan for Miami-Dade County, Florida, as may be amended from time to time, is hereby incorporated by reference. If present on a development site, they shall be removed prior to development, and their sale, propagation, planting, importation or transportation shall be prohibited.

(2) Definitions for Section 24-49.9(1), Sections 24-49.9(3)(a), 3(b), and 3(c):

(a) *Importation* shall mean the conveyance by any means of plants into Miami-Dade County.

(b) *Planting* shall mean the placing on or setting into the ground of live plant material.

(c) *Propagation* shall mean the physical act of causing plants to multiply by any process of reproduction from plant stock.

(d) *Sale* shall mean the act of transferring or conveying plants to a purchaser for consideration.

(e) *Transportation* shall mean the act of carrying or conveying plants from one (1) place to another for the purpose of sale, planting, importation or propagation.

(3) Variances.

(a) A variance by the Director of DERM from the transportation, propagation and planting prohibitions of this section may be requested, subject to the conditions justifying variance approval outlined below in Section 24-49.9(3)(b)(i) and (ii). Said variance request shall be made in writing to the Director of DERM and shall include the following information:

(i) Name and address of the person or persons requesting the variance.

(ii) Location of the property for which the variance is requested.

(iii) A sketch or drawing indicating the location within the subject property where the planting or field propagation of the otherwise prohibited plant species will occur. (Container propagation shall be exempt from said sketch or drawing requirements.)

(iv) The reason or reasons for requesting the variance.

(b) The Director of DERM may, in his discretion, issue a variance from the provisions of this section based upon the following factors:

(i) Proximity of the subject planting or propagation to any environmentally sensitive areas (e.g., wetlands, hammocks, pinelands, dunes).

(ii) Lack of appropriate alternative plant species to fulfill the same purpose or purposes for planting.

(c) The Director of DERM shall issue or deny a variance request within thirty (30) days of receipt of its receipt, provided the required information described in Section 24-49.9(3)(a)(i) through (iv) above has been submitted.

(Ord. No. 04-214, §§ 1, 5, 12-2-04)

DIVISION 3. Environmentally Endangered Lands Program.

Sec. 24-50. Title.

This section shall be known as the Environmentally Endangered Lands Program.

Sec. 24-50.1. Legislative intent.

The historic loss, fragmentation, and degradation of native wetland and upland forest communities in Miami-Dade County are well documented, and remaining native wetland and upland forest communities are collectively endangered. On May 8, 1990, the electorate of Miami-Dade County authorized the county to exceed the constitutional millage limitation by levying an ad valorem tax of three-quarters of one mil, for a period not to exceed two (2) years, for acquisition, preservation, enhancement, restoration, conservation and maintenance of environmentally-endangered lands for the benefit of present and future generations; and limiting all uses of, and all investment earnings on, such levies to such purposes. It is the intent of the Board of County Commissioners of Metropolitan Miami-Dade County to establish the Environmentally Endangered Lands Program to implement this mandate and to support its purposes to the fullest.

Sec. 24-50.2. Definitions.

The following words and phrases, when used in this chapter, shall have the meanings ascribed to them in this section:

(1) *Acquisition proposal* shall mean (a) parcel(s) of land which has/have been nominated or recommended for acquisition in accordance with procedures provided for hereinbelow.

(2) *Acquisition project* shall mean (a) parcel(s) of land approved by the Board of County Commissioners for acquisition by the county in accordance with procedures provided for hereinbelow.

(3) *Ancillary land* shall mean that land which is adjacent to environmental land and which is necessary to the management and protection of the environmental land for such purposes as fence installation, access of maintenance equipment, firebreaks, parking, or other management activities which are indicated in the management feasibility evaluation.

(4) *Bona fide organization* shall mean an organization which has an elected board of directors, has adopted a charter, by-laws, or rules of procedure, conducts a meeting of its membership at least annually, and which has been in existence in Miami-Dade County for at least two (2) years prior to the adoption of the ordinance from which this chapter derives.

(5) *Buffer land* shall mean that land which is adjacent to publicly-owned

environmental land or to an environmental land acquisition proposal or project, or that land which is an inholding within publicly-owned environmental land or within an environmental land acquisition proposal or project, and which, if not acquired, would threaten the environmental integrity of the existing resource, or if acquired, would enhance the environmental integrity of the resource.

(6) *Environmental land* shall mean that land which contains natural forest or wetland communities, native plant communities, rare and endangered flora and fauna, endemic species, endangered species habitat, a diversity of species, or outstanding geologic or other natural features, or that land which functions as an integral and sustaining component of an existing ecosystem.

(7) *Management* shall mean the preservation, enhancement, restoration, conservation, monitoring, or maintenance of the natural resource values of environmentally-endangered lands which have been acquired or approved for management under the Environmentally Endangered Lands Program.

Sec. 24-50.3. Environmentally Endangered Lands Program established.

The Metropolitan Miami-Dade County Environmentally Endangered Lands Program (hereinafter referred to as the EEL Program) is hereby established to acquire, preserve, enhance, restore, conserve, and maintain threatened natural forest and wetland communities located in Miami-Dade County, for the benefit of present and future generations. The County Manager shall administer this program in accordance with the procedures and criteria provided for hereinbelow.

Sec. 24-50.4. Purpose.

The purpose of the EEL Program shall be:

(1) To acquire environmentally-endangered lands which contain natural forest or wetland communities, native plant communities, rare and endangered flora and fauna, endemic species, endangered species habitat, a diversity of species, or outstanding geologic or other natural features;

(2) To acquire environmentally-endangered lands which function as an integral and sustaining component of an existing natural system;

(3) To protect environmentally-endangered lands which are publicly owned by acquiring inholdings or adjacent properties which, if not acquired, would threaten the environmental integrity of the existing resource, or which, if acquired, would enhance the environmental integrity of the resource;

(4) To implement the objectives and policies of the Comprehensive Development Master Plan for Metropolitan Miami-Dade County which have been promulgated to preserve and protect environmental protection areas designated in the Plan and other natural forest resources, wetlands, and endangered species habitat;

(5) To identify Miami-Dade County's best and most endangered environmental

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lands for acquisition and management by evaluating the biological characteristics and viability of the resource, the vulnerability of the resource to degradation or destruction, and the feasibility of managing the resource to maintain its natural attributes;

(6) To manage environmentally-endangered lands with the primary objective of maintaining and preserving their natural resource values by employing management techniques that are most appropriate for each native community so that our natural heritage may be preserved for present and future generations;

(7) To use the acquired sites, where feasible within financial constraints and with minimal risk to the environmental integrity of the site, to educate Miami-Dade County's school-age population and the general public about the uniqueness and importance of Miami-Dade County's subtropical ecosystems and natural communities; and

(8) To cooperate actively with other acquisition, conservation, and resource management programs, including, but not limited to, such programs as the State of Florida Conservation and Recreation Lands program, the Land Acquisition Trust Fund, and Save Our Rivers program, where the purposes of such programs are consistent with the purposes of the EEL Program as stated hereinabove.

Sec. 24-50.5. Environmentally Endangered Lands Trust Funds.

(1) *Creation of the Environmentally Endangered Lands Acquisition Trust Fund.*

(a) There is hereby created the Environmentally Endangered Lands Acquisition Trust Fund (hereinafter referred to as the EEL Acquisition Trust Fund) for use in acquiring environmentally-endangered lands in Miami-Dade County. The Finance Director is hereby authorized to establish the EEL Acquisition Trust Fund and to receive and disburse monies in accordance with the provisions of this section.

(b) The EEL Acquisition Trust Fund shall receive monies from the following sources:

(i) All revenues collected by the County Tax Collector pursuant to the extraordinary millage of three-quarters of one mil of ad valorem tax levied in 1990 and 1991, as approved by referendum on May 8, 1990, except for those revenues dedicated to the Environmentally Endangered Lands Management Trust Fund provided for herein by Section 24-50.5(b)(ii).

(ii) All monies accepted by Metropolitan Miami-Dade County in the form of federal, State, or other governmental grants, allocations, or appropriations, as well as foundation or private grants anddonations for acquisition of environmentally-endangered lands as provided for by this section.

(iii) Such additional allocations as may be made by the Board of County Commissioners from time to time for the purposes set forth herein.

(iv) All interest generated from the sources identified in Section 24-50.5(1)(b)(i), (ii), and (iii) hereinabove, except where monies received have been otherwise designated or restricted.

(c) The EEL Acquisition Trust Fund shall be maintained in trust by the Board of County Commissioners solely for the purposes set forth herein, in a separate and segregated fund of the County which will not commingle with other County funds until disbursed for an authorized purpose pursuant to Section 24-50.5(1)(d).

(d) Disbursements from the EEL Acquisition Trust Fund shall be made only for the following purposes:

(i) Acquisition of properties which have been approved for purchase by resolution of the Board of County Commissioners in accordance with the provisions of Sections 24-50.7 through 24-50.11.

(ii) All costs associated with each acquisition including, but not limited to, appraisals, surveys, title search work, real property taxes, documentary stamps and surtax fees, and other transaction costs.

(iii) Costs of administering the EEL Program, which will be funded from the interest proceeds of the EEL Acquisition Trust Fund until such time as the fund is closed.

(iv) Supplementation of the Environmentally Endangered Lands Management Trust Fund, but only by resolution of the Board of County Commissioners.

(e) Where any property acquired with EEL Acquisition Trust Fund monies is leased or sold by the County, the proceeds from said lease or sale shall, as determined by the Board of County Commissioners, be committed either to the EEL Acquisition Trust Fund or to the EEL Management Trust Fund for the purposes provided for herein. Such proceeds shall neither be committed to any other fund, nor be used for any other purpose.

(2) *Creation of the Environmentally Endangered Lands Management Trust Fund.*

(a) There is hereby created the Environmentally Endangered Lands Management Trust Fund (hereinafter referred to as the EEL Management Trust Fund) for the preservation, enhancement, restoration, conservation and maintenance of environmentally-endangered lands which either have been purchased with monies from the EEL Acquisition Trust Fund (established pursuant to Section 24-50.5(1), or have otherwise been approved for management pursuant to Section 24-50.7(2). The Finance Director is hereby authorized to establish the EEL Management Trust Fund and to receive and disburse monies in accordance with the provisions of this section.

(b) The EEL Management Trust Fund shall receive monies from the following

sources:

(i) A principal in the amount of ten million dollars ($10,000,000.00) from those revenues collected by the County Tax Collector pursuant to the extraordinary millage of three-quarters of one mil of ad valorem tax levied in 1990 and 1991, as approved by referendum on May 8, 1990. The principal may be increased as a result of a specific grant, donation, allocation or appropriation therefor.

(ii) All monies accepted by Metropolitan Miami-Dade County in the form of federal, State, or other governmental grants, allocations, or appropriations, as well as foundation or private grants and donations, for management of lands acquired with the EEL Acquisition Trust Fund or otherwise approved for management pursuant to Section 24-50.7(2). Unless otherwise stated at the time of acceptance, all grant and donation monies received and the interest therefrom shall not be part of the principal and shall be available for disbursement in accordance with Section 24-50.5(2)(d).

(iii) Such additional allocations as may be made by the Board of County Commissioners from time to time, including allocations from existing trust funds or mitigation funds, or special allocations from the EEL Acquisition Trust Fund as provided for in Section 24-50.5(1)(d)(i). Unless otherwise stated at the time of the allocation, all allocations received shall be available for disbursement in accordance with Section 24-50.5(2)(d).

(iv) All interest generated from the sources identified in Sections 24-50.5(2)(b)(i), (ii), and (iii) hereinabove, except where monies received have been otherwise designated or restricted.

(c) The EEL Management Trust Fund shall be kept and maintained in trust by the Board of County Commissioners solely for the purposes set forth herein, in a separate and segregated fund of the County which will not commingle with other County funds until disbursed for an authorized purpose pursuant to this section.

(d) Disbursements from the EEL Management Trust Fund shall be made by the County Manager only in accordance with this Section 24-50.5(2)(d).

(i) No disbursements shall be made from the principal established under Section 24-50.5(2)(b)(i) except by ordinance amending this subsection.

(ii) Disbursements shall be made only from those monies defined in Section 24-50.5(2)(b)(ii), (iii), and (iv) hereinabove.

(iii) Disbursements shall be made only for the preservation, enhancement, restoration, conservation or maintenance of those environmentally-endangered lands which have been acquired with monies from the EEL Acquisition Trust Fund or which have been approved for

management pursuant to Section 24-50.7(2). Disbursements shall be made in accordance with (a) project management plan(s) which has/have been approved pursuant to Section 24-50.12.

Sec. 24-50.6. Land Acquisition Selection Committee.

(1) *Land Acquisition Selection Committee established; qualifications of members.*

(a) There is hereby established an Advisory Board in accordance with Sections 2-11.36 through 2-11.40 of this Code to be known as the Metropolitan Miami-Dade County Land Acquisition Selection Committee (hereinafter referred to as the LASC).

(b) The LASC shall be composed of seven (7) members and one (1) alternate member.

(2) *Method of appointment; terms of membership.*

(a) The County Manager shall recommend to the Board sixteen (16) candidates for the seven (7) regular members' seats on the LASC and the one (1) alternate member's seat. Preference will be given to candidates who have a record of service in environmental or civic affairs in Miami-Dade County and who have been recommended by one or more bona fide environmental, civic, or professional organizations.

(b) The Board of County Commissioners shall appoint, from the list of candidates recommended by the County Manager, four (4) members and the alternate to serve for two (2) years and three (3) members to serve for three (3) years. At the end of the two (2) years, the successors to the initial two-year appointments shall be appointed for three (3) years.

(3) *Quorum; conduct of Committee and rules of procedure; meetings.*

(a) A quorum of the Committee shall be five (5) persons.

(b) At its first meeting, the Committee shall establish its rules of procedure and shall elect a Chairperson and a Vice-Chairperson. The Chairperson and Vice-Chairperson shall be elected annually thereafter.

(c) The alternate member shall enjoy the same privileges and responsibilities as the regular members, except that the alternate member cannot vote unless a regular member is absent.

(d) An extraordinary majority of five (5) votes shall be required for determining sites for acquisition as provided for in Sections 24-50.8 through 24-50.11 hereinbelow.

(e) The LASC shall hold at least four (4) regular meetings each year.

(i) Notwithstanding the provisions of Sections 2-11.38 through 2-11.39 of the Code of Miami-Dade County, any member or alternate member of the LASC who is absent from three (3) meetings in any one (1) year shall forfeit membership and shall not be eligible to be reappointed to

the LASC. In the event a member shall resign or forfeit his membership on the LASC, a quorum of the members in good standing may, by majority vote, elect the alternate to become a permanent voting member.

(ii) Within thirty (30) days from the date a vacancy occurs, the County Manager shall recommend to the Board of County Commissioners two (2) candidates who meet the qualifications set forth in Section 24-50.6(2)(a) above to fill that vacancy. The Board shall select one of the two (2) candidates to serve the remainder of the term.

(4) *Responsibilities of the Land Acquisition Selection Committee.*

(a) The primary responsibility of the LASC is to recommend to the Board of County Commissioners a semi-annual acquisition list pursuant to Section 24-50.9 hereinbelow.

(b) In developing its recommendations, the LASC shall act in accordance with the procedures and requirements set forth in Sections 24-50.7 through 24-50.11 and in furtherance of the purposes of the EEL Program as set forth in Section 24-50.4.

(c) The LASC may, from time to time, recommend to the Board (or to the County Manager, as appropriate) proposed expenditures from the EEL Trust Funds; additional selection or acquisition policies, procedures, standards, criteria, strategies, schedules, and programs; and other such matters as may be necessary to fulfill the purposes of the EEL Program.

(d) At its first meeting, or within fourteen (14) days thereafter, the LASC shall recommend action on those Miami-Dade County projects which are ranked on the State of Florida 1991 Conservation and Recreation Land Priority List or which appear on the State of Florida Land Acquisition Trust Fund List with particular regard for the joint acquisition of these projects by the State of Florida and the EEL Program, as set forth in R-1262-90. So that the LASC may act expeditiously, this recommendation is exempted from the procedural requirements provided for in Sections 24-50.10 and 24-50.11, but shall be based upon the considerations set forth in Sections 24-50.7 and 24-50.8.

(5) *Limitation of powers of Committee.* The LASC shall have no power or authority to commit Metropolitan Miami-Dade County to any policies, to incur any financial obligations or to create any liability on the part of the County. The actions and recommendations of the LASC are advisory only and shall not be binding upon the County unless approved or adopted by the Board of County Commissioners.

(6) *Termination of the Committee.* At such time as there are insufficient uncommitted funds in the EEL Acquisition Trust Fund to conclude another acquisition and all acquisition projects have been closed, the LASC shall report to the County Commission that its business is concluded. All remaining EEL Acquisition Trust Fund monies shall then be transferred to the EEL Management Trust Fund and shall be added to the principal thereof as provided for in Section 24-50.5(2)(b)(i).

Sec. 24-50.7. Property eligible for acquisition and management.

(1) Properties eligible to be considered for acquisition and management under the EEL Program shall be only environmental land, ancillary land, and buffer land.

(2) Any environmental, ancillary, or buffer land not on the acquisition list which is offered for conveyance or donation to Miami-Dade County and is proposed for management by the EEL Program shall be evaluated as provided for in Section 24-50.8 hereinbelow and may only be accepted and approved for management under the EEL Program by resolution of the Board of County Commissioners.

Any land on the Priority A Acquisition List which is owned by a public agency where said agency is willing and able to lease the property to Miami-Dade County for a term not less than thirty (30) years may be accepted and approved for management under the EEL Program by resolution of the Board of County Commissioners. Upon approval for management under the EEL Program, the said public entity must agree to, and execute, a covenant running with the land which provides for continued maintenance of the property as a natural preserve.

Sec. 24-50.8. Considerations for evaluating lands for acquisition and management; EEL Program Manual.

(1) Evaluation of each acquisition proposal shall be based upon the following considerations:

(a) The primary considerations for evaluating environmental land shall be:

(i) The biological value and viability of the resource;

(ii) The vulnerability of the resource to degradation or destruction; and

(iii) The requirements (including costs) for managing the resource to maintain its natural attributes, and the feasibility of meeting those management requirements.

Ancillary land shall be evaluated in conjunction with the adjacent environmental land.

(b) The primary considerations for evaluating buffer land shall be:

(i) The biological value and viability of the environmental land;

(ii) The vulnerability of the buffer land to development; and

(iii) The existing and potential impact on the environmental land if the buffer land were not acquired.

(2) The Board of County Commissioners hereby approves and makes a part hereof the Criteria for Evaluating EEL Acquisition Proposals attached hereto. The County Manager, pursuant to Section 4.02 of the Code of Miami-Dade County, shall propose to the Board of County Commissioners an Environmentally Endangered Lands Program Manual (hereinafter referred to as the EEL Program Manual) which shall be used as a guide for implementing the provisions of this chapter, and shall include the

criteria for evaluating EEL Acquisition Proposals which are adopted hereby.

Sec. 24-50.9. Acquisition list.

The EEL Acquisition List shall consist of the Priority A List and the Priority B List and shall be approved semi-annually by the Board of County Commissioners in accordance with the procedures set forth in Sections 24-50.10 and 24-50.11 hereinbelow.

(1) *Priority A List.*

(a) The Priority A List shall contain no more than ten (10) projects which shall be selected by the Board of County Commissioners from those acquisition proposals which receive the highest evaluations pursuant to the criteria provided for in Section 24-50.8 and for which acquisition is feasible. No rank order shall be assigned to Priority A projects. The County shall actively pursue the acquisition of Priority A projects.

(b) A project shall be removed from the Priority A List only after purchase by the County, upon approval of the next succeeding acquisition list as provided hereinbelow or by resolution of the Board of County Commissioners. Projects removed from the Priority A List for any reason except purchase by the County shall be placed on the Priority B List.

(2) *Priority B. List.* The Priority B list shall contain all acquisition proposals which are deemed worthy of acquisition based upon the evaluation criteria provided in Section 24-50.8, and which may feasibly be acquired, but which have not been assigned to the Priority A List. The County may not actively pursue acquisition of a property on the Priority B List unless the share of the purchase price paid from the EEL Acquisition Trust Fund is no more than fifty (50) percent of the total purchase price of the property or unless the seller donates fifty (50) percent or more of the value of the property as estimated in an appraisal report prepared by an independent fee appraiser and accepted by the County.

Sec. 24-50.10. Nomination of acquisition proposals.

(1) Public applications nominating properties for acquisition may be submitted on an annual basis by any person or organization, including any federal, State, municipal, or regional government agency. Miami-Dade County applications nominating properties for acquisition may be submitted on a semi-annual basis by any agency of Metropolitan Miami-Dade County.

(2) All nominations shall be made by filing an application provided by the County Manager.

(3) The first submittal of applications from agencies of Miami-Dade County shall occur no later than December 1, 1991. In 1993, the application deadline shall be no later than June 30. Subsequent submittals shall occur semi-annually thereafter.

(4) The first public application period shall be opened within ten (10) months from the

effective date of the ordinance from which this chapter derives. In 1993, the application deadline shall be no later than December 31. Subsequent submittals shall occur annually thereafter.

(5) A thirty-day period shall be provided each year for the submittal of public applications. Public notice of the application period shall be given at least two (2) weeks before the period opens and a second notice shall be given at least two (2) weeks before the application period closes.

(6) If the applicant has an ownership interest in any real property covered by an application for proposed acquisition, such interest shall be disclosed in the same manner as required of zoning applicants by Section 33-304(a) of the Code of Miami-Dade County. If the applicant is acting as agent or attorney for a principal, the principal's interest shall be disclosed in the same manner as required of zoning applicants in Section 33-304(a) of the Code of Metropolitan Miami-Dade County. Section 24-50.10(6) shall not apply to governmental applicants.

(7) If the applicant does not have an ownership interest in the real property covered by an application or if the applicant is a governmental agency, the name and address of the owner as listed in the Property Appraiser's records shall be provided with the application.

Sec. 24-50.11. Procedure for selection of acquisition proposals for placement on the acquisition list.

(1) Upon receipt of a completed property nomination application, the County Manager shall forward the application to designated staff for initial review.

(a) Upon completion of initial review, acquisition proposals accepted by the County Manager shall be evaluated by staff based upon the criteria provided in Section 24-50.8. The staff evaluation shall be completed within sixty (60) days of receipt by the County Manager of the completed application.

(b) If, upon initial review, staff finds that the biological value of a candidate environmental land is low, that management is not feasible, or that the proposed acquisition would not fulfill the purposes of the EEL Program set forth herein, the County Manager shall be notified immediately and may order that no further evaluation be undertaken. Notwithstanding the County Manager's order, the LASC may, by extraordinary majority of five (5) votes, require a complete evaluation of said property.

(2) Upon completion of the staff evaluation process, the Environmentally Endangered Lands Project Review Committee, created pursuant to Section 24-50.13 hereinbelow, shall define the preliminary boundaries for each acquisition proposal and shall assist the County Manager in preparing his recommendation on each proposal for the LASC. Within sixty (60) days of the completion of this staff evaluation process, the County Manager shall transmit his recommendation to the LASC along with a map of each site, a description of the biological characteristics of the site, a description of the development potential of the site and adjacent land, an assessment of the management needs and costs, the assessed value, and other information as may be deemed relevant

for each proposal evaluated.

(3) Within sixty (60) days of receiving the County Manager's transmittal, the LASC shall hold a duly-noticed public hearing to consider the recommendations regarding each site, the applicant's comments, and comments from the public. A courtesy notice shall be provided to the owner(s) of properties which are the subject of the hearing. Failure to notify said owner(s) shall not invalidate these proceedings.

(4) Within thirty (30) days of its public hearing, the LASC shall meet to adopt its recommended acquisition list for consideration by the Board of County Commissioners as provided for in Section 24-50.9 hereinabove. In developing its recommendation, the LASC shall consider all information received from County staff, the County Manager's recommendation, information that has been submitted in writing through the date of the public hearing, and testimony received at the public hearing. The LASC shall forward the recommended acquisition list to the County Manager for scheduling on the County Commission agenda for consideration and action by the Board.

(5) Deadlines established in Sections 24-50.11(1) through (4) hereinabove shall be waived in processing applications filed in 1992.

Sec. 24-50.12. Management plan and use of environmentally endangered lands.

(1) No later than thirty (30) days from the date of acquisition, an interim management plan for the property shall be submitted to the Environmentally Endangered Lands Project Review Committee for approval. Upon approval, interim management plans shall be implemented by the County Manager; provided, however, that such interim management plan(s) shall not be implemented for more than two (2) years after acquisition of the property.

(2) A ten-year management plan shall be prepared for each property acquired by the EEL Program which shall:

(a) Identify such management activities as are necessary to preserve, enhance, restore, conserve, maintain, or monitor the resource, as appropriate; and

(b) Identify such uses as are consistent with the preservation, enhancement, restoration, conservation, and maintenance of the resource; and

(c) Estimate the annual costs of managing the project.

(3) Annually, the ten-year management plans prepared during the preceding year shall be submitted to the Board of County Commissioners for its approval. Each ten-year management plan shall be updated at least every five (5) years from the last date of Board approval, and may be amended as often as required. Management plan updates and amendments shall be submitted to the Board of County Commissioners for approval.

(4) All management plans shall be consistent with the purposes set forth in Section 24-50.4 herein. All properties acquired or managed by the EEL Program shall be managed in accordance with the approved management plan for that property.

(5) No use, infrastructure, or improvement shall be permitted on any property acquired or managed under the EEL Program that is inconsistent with the purposes of the program or that is not provided by an approved management plan for the property.

Sec. 24-50.13. Responsibilities of the manager.

The County Manager shall facilitate such activities, designate such staff, and assign such responsibilities as are necessary to fulfill the purposes of this chapter. The manager shall, at a minimum, do the following:

(1) Designate staff to evaluate acquisition proposals in accordance with the approved criteria and prepare and implement project management plans.

(2) Make recommendations to the LASC on acquisition proposals.

(3) Designate an Environmentally Endangered Lands Project Review Committee to assist with the coordination of interdepartmental and interagency activities, to assist in the preparation of recommendations on acquisition proposals, and to approve interim management plans. The Project Review Committee shall be chaired by the County Manager or his designee and shall include at least one (1) representative each from the Department of Environmental Resources Management, the Park and Recreation Department, and the Department of Planning and Zoning.

(4) Designate a negotiation resource committee to develop negotiation strategies for approved acquisition projects, to monitor negotiations, and to assist in coordinating all activities relating to negotiations, purchase agreements and closings, as needed. The Negotiation Resource Committee shall include at least one (1) representative from the Department of Environmental Resources Management, the Department of Development/Facilities Management, the Park and Recreation Department, and the Property Appraiser's Office. The County Attorney shall also designate (a) representative(s) to serve on the Negotiation Resource Committee.

FIGURE NO. 11

MULTIPLE AGENCY LEASE AGREEMENT

Multiple Agency Lease Agreement

Figure No. 11 - Multiple Agency Lease Agreement

FDAC CONTRACT # 11498

SAL8104

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND

OF THE STATE OF FLORIDA

MULTIPLE AGENCY LEASE AGREEMENT

Lease Agreement No. 3941

THIS LEASE AGREEMENT is made and entered into this 5th day of August, 1993, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "TRUSTEES", and the DADE COUNTY PARK AND RECREATION DEPARTMENT, hereinafter referred to as "LEAD AGENCY", and the STATE OF FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, hereinafter referred to as "COOPERATING AGENCY", hereinafter collectively referred to as "MANAGING AGENCIES", for the lands described in paragraph 2 below, together with the improvements thereon, and subject to the following terms and conditions:

1. DELEGATIONS OF AUTHORITY: The TRUSTEES' responsibilities and obligations herein shall be exercised by the Division of State Lands, Department of Natural Resources.

2. DESCRIPTION OF PREMISES: The property subject to this lease agreement is located in the County of Dade, State of Florida, and is more particularly described in Exhibit A attached hereto and hereinafter referred to as "leased premises".

3. TERM: The term of this lease agreement shall be for a period of fifty (50) years commencing on August 5, 1993 and ending on August 4, 2043, unless sooner terminated pursuant to the provisions of this lease agreement.

4. PURPOSE: The MANAGING AGENCIES shall manage these lands in conformance with the State Environmentally Endangered Lands Plan and the State Lands Management Plan for the conservation and protection of natural and historical resources and for resource based public outdoor recreation which is

Figure No. 11 - Multiple Agency Lease Agreement

compatible with the conservation and protection of these public lands as set forth in subsection 253.023(11), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 10 of this lease agreement.

5. BEST MANAGEMENT PRACTICES: The MANAGING AGENCIES shall implement applicable Best Management Practices for all activities conducted under this lease agreement in compliance with paragraph 18-2.004(1)(d), Florida Administrative Code, which have been selected, developed, or approved by the TRUSTEES or the MANAGING AGENCIES for the protection and enhancement of the leased premises.

6. EASEMENTS: All easements including, but not limited to, utility easements are expressly prohibited without the prior written approval of the TRUSTEES. Any easement not approved in writing by the TRUSTEES shall be considered void and without legal effect.

7. OTHER AGREEMENTS: This lease agreement shall not be construed as authorization for the MANAGING AGENCIES to lease, sublease, convey or encumber the leased premises or any portion thereof without the prior written approval of the TRUSTEES.

8. LEAD AGENCY RESPONSIBILITIES: The LEAD AGENCY shall coordinate and oversee all activities on the leased premises; initiate appropriate management programs to meet the intent of the goals and objectives stated herein; coordinate preparation and periodic revision of the Management Plan; coordinate and monitor all management activities undertaken by others; and, compile and submit such reports as may be required of the MANAGING AGENCIES. The LEAD AGENCY shall provide permanent staff, as funding is acquired, for management on a day-to-day basis.

9. COOPERATING AGENCY RESPONSIBILITIES: The COOPERATING AGENCY shall, in coordination with the LEAD AGENCY, provide management recommendations and protection for all wildlife, including threatened and endangered species. In addition, the COOPERATING AGENCY will assist in the management of the pineland

Figure No. 11 - Multiple Agency Lease Agreement

preserves by conducting periodic controlled burns of the properties to encourage pineland growth and eliminate the threat of understory hardwoods and exotic species.

10. MANAGEMENT PLAN: The LEAD AGENCY with assistance from the COOPERATING AGENCY shall prepare and submit a Management Plan for the leased premises, in accordance with Section 253.034, Florida Statutes, and Chapters 18-2 and 18-4, Florida Administrative Code, within 12 months of the effective date of this lease. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands. The leased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the leased premises without the prior written approval of LESSOR until the Management Plan is approved. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by the LEAD AGENCY, COOPERATING AGENCY, Land Management Advisory Committee, and LESSOR at least every five (5) years. The LEAD AGENCY and COOPERATING AGENCY shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under this lease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

11. QUIET ENJOYMENT AND RIGHT OF USE: The MANAGING AGENCIES shall have the right of ingress and egress, to, from and upon the leased premises for all purposes necessary to their full quiet enjoyment of the rights conveyed herein. The MANAGING AGENCIES shall have the authority and right to enter and occupy the property for all purposes necessary to meet their designated responsibilities, including protection of the leased premises. The MANAGING AGENCIES shall have the authority and shall, through

Figure No. 11 - Multiple Agency Lease Agreement

their agents and employees, take all reasonable measures to provide security against property damage, property degradation, and unauthorized uses or any use thereof not in conformance with this lease agreement.

12. RIGHT OF INSPECTION: The TRUSTEES or their duly authorized agents, shall have the right at any and all times to inspect the leased premises and the works and operations thereon of the MANAGING AGENCIES in any matter pertaining to this lease agreement.

13. BREACH OF COVENANTS TERMS OR CONDITIONS: Should the MANAGING AGENCIES fail to keep or perform any of their responsibilities as designated by the approved Management Plan or otherwise as provided for herein, the TRUSTEES shall notify the specific agency of such non-performance. If correction or justification is not made within (60) sixty days of receipt of written notice, the TRUSTEES may either terminate this lease agreement and recover from the MANAGING AGENCIES all damages the TRUSTEES may incur by reason of the breach including, but not limited to, the cost of recovering the leased premises, or maintain this lease agreement in full force and effect and exercise all rights and remedies herein conferred upon the TRUSTEES.

14. ASSIGNMENT: This lease agreement shall not be assigned in whole or in part without the prior written consent of the TRUSTEES. Any assignment made without the prior written consent of the TRUSTEES shall be void and without legal effect.

15. LIABILITY: The MANAGING AGENCIES shall assist in the investigation of injury or damage claims either for or against the State of Florida or the TRUSTEES pertaining to their respective areas of responsibilities, or arising out of their respective management programs and activities, and shall contact the Division of State Lands regarding whatever legal action they deem appropriate to remedy such damage or claims.

16. UTILITY FEES: The MANAGING AGENCIES shall be responsible for the payment of all charges for the furnishing of gas, electricity, water and other public utilities to the leased

Figure No. 11 - Multiple Agency Lease Agreement

premises and for having all utilities turned off when the leased premises are surrendered.

17. PAYMENT OF TAXES AND ASSESSMENTS: The MANAGING AGENCIES shall assume full responsibility for and shall pay all liabilities that accrue to the leased premises or to the improvements thereon, including any and all drainage and special assessments or taxes of every kind and all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against the leased premises.

18. CONDITIONS AND COVENANTS: All of the provisions of this lease agreement shall be deemed covenants running with the land included in the leased premises, and shall be construed to be "conditions" as well as "covenants" as though the words specifically expressing or imparting covenants and conditions were used in each separate provision.

19. TRIPLICATE ORIGINALS: This lease agreement is executed in triplicate originals each of which shall be considered an original for all purposes.

20. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the leased premises is held by the TRUSTEES. The MANAGING AGENCIES shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the leased premises including, but not limited to, mortgages or construction liens against the real property contained in the leased premises or against any interest of the TRUSTEES therein.

21. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures, improvements, and signs shall be constructed at the expense of the MANAGING AGENCIES. Removable equipment and removable improvements placed on the leased premises by the MANAGING AGENCIES which do not become a permanent part of the leased premises will remain the property of the MANAGING AGENCIES and may be removed by such upon termination of this lease agreement.

Figure No. 11 - Multiple Agency Lease Agreement

22. MAINTENANCE OF IMPROVEMENTS: The MANAGING AGENCIES shall maintain the real property contained within the leased premises and any improvements located thereon, in a state of good condition, working order and repair including, but not limited to, maintaining the planned improvements as set forth in the approved Management Plan, meeting all building and safety codes in the location situated and keeping the leased premises free of trash or litter and maintaining any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be on the effective date of this lease agreement; provided, however, that any removal, closure, etc., of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection, and enhancement of the natural and historical resources within the leased premises and with the approved Management Plan.

23. NO WAIVER OF BREACH: The failure of the TRUSTEES to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this lease agreement shall not be construed as a waiver of such covenants, terms and conditions, but the same shall continue in full force and effect, and no waiver of the TRUSTEES of any one of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing, signed by the TRUSTEES.

24. DAMAGE TO THE PREMISES: The MANAGING AGENCIES agree that they will not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises, any act which may result in damage or depreciation of value to the leased premises, or any part thereof. The MANAGING AGENCIES shall not dispose of any contaminants including, but not limited to, hazardous or toxic substances, chemicals or other agents used or produced in the MANAGING AGENCIES' operations, on the leased premises or on any adjacent state land or in any manner not permitted by law.

25. INSURANCE REQUIREMENTS: The MANAGING AGENCIES shall procure and maintain adequate fire and extended risk insurance coverage for any improvements or structures located on the leased premises in amounts not less than the full insurable replacement value of such improvements by preparing and delivering to the Division of Risk Management, Department of Insurance, a completed Florida Fire Insurance Trust Fund Coverage Request Form immediately upon erection of any structures as allowed by paragraph 4 of this lease agreement. A copy of said form and immediate notification in writing of any erection or removal of structures or other improvements on the leased premises and any changes affecting the value of the improvements shall be submitted to the following: Bureau of Land Management Services, Division of State Lands, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399.

26. PUBLIC LANDS ARTHROPOD CONTROL PLAN: The MANAGING AGENCIES shall identify and subsequently designate to the respective arthropod control district or districts all of the environmentally sensitive and biologically highly productive lands contained under this lease agreement, in accordance with Section 388.4111, Florida Statutes and Chapter 10D-54, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands within one year of the effective date of this lease agreement.

27. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this lease agreement in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Section 253.034, Florida Statutes, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the tract.

Figure No. 11 - Multiple Agency Lease Agreement

28. SURRENDER OF PREMISES: Upon termination or expiration of this lease agreement, the MANAGING AGENCIES shall surrender the leased premises to the TRUSTEES. In the event no further use of the leased premises or any part thereof is needed, the MANAGING AGENCIES shall give written notification to the Bureau of Land Management Services, Division of State Lands, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399 at least six (6) months prior to the release of all or any part of the leased premises. Notification shall include a legal description, this lease agreement number, and an explanation of the release. The release shall only be valid if approved by the TRUSTEES through execution of a release of lease agreement instrument with the same formality as this lease agreement. Upon release of any leased premises or upon termination or expiration of this lease agreement, all improvements, including both physical structures and modifications to the leased premises, shall become the property of the TRUSTEES, unless the TRUSTEES give written notice to the MANAGING AGENCIES to remove any or all such improvements at the expense of the MANAGING AGENCIES. The decision to retain any improvements upon termination of this lease agreement shall be at the TRUSTEES' sole discretion. Prior to surrender of all or any part of the leased premises, a representative of the Division of State Lands shall perform an on-site inspection and the keys to any building on the leased premises shall be turned over to the Division. If the leased premises do not meet all conditions as set forth in paragraphs 17 and 23 herein, the MANAGING AGENCIES shall pay all costs necessary to meet the prescribed conditions.

29. COMPLIANCE WITH LAWS: The MANAGING AGENCIES agree that this lease agreement is contingent upon and is subject to the MANAGING AGENCIES obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules, and laws of the State of Florida or the United States or of any political subdivision or agency of either.

Figure No. 11 - Multiple Agency Lease Agreement

30. ENTIRE UNDERSTANDING: This lease agreement sets forth the entire understanding between the parties and shall only be amended with the prior written approval of the TRUSTEES.

31. RIGHT OF AUDIT: The MANAGING AGENCIES shall make available to the TRUSTEES all financial and other records relating to this lease agreement and the TRUSTEES shall have the right to audit such records at any reasonable time. This right shall be continuous until this lease agreement expires or is terminated. This lease agreement may be terminated by the TRUSTEES should the MANAGING AGENCIES fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this lease agreement, pursuant to Chapter 119, Florida Statutes.

32. NON-DISCRIMINATION: The MANAGING AGENCIES shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicaps, or marital status with respect to any activity occurring within the leased premises or upon lands adjacent to and used as an adjunct of the leased premises.

33. GOVERNING LAW: This lease agreement shall be governed by and interpreted according to the laws of the State of Florida.

34. SECTION CAPTIONS: Articles, subsections and other captions contained in this lease agreement are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope, extent or intent of this lease agreement or any provisions thereof.

Figure No. 11 - Multiple Agency Lease Agreement

IN WITNESS WHEREOF, the parties have caused this lease agreement to be executed on the day and year first above written.

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

Witness

Witness

By: _____ (SEAL)
DIRECTOR, DIVISION OF STATE LANDS, DEPARTMENT OF NATURAL RESOURCES

"TRUSTEES"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 5th day of August, 1993, by Percy W. Mallison Jr., as Director, of Division of State Lands, Department of Natural Resources.

GATHY LYNN WATKINS
MY COMMISSION # CC 187822 EXPIRES
March 22, 1996
BONDED THRU TROY FAIN INSURANCE, INC.

NOTARY PUBLIC (SEAL)
My Commission Expires:

Approved as to Form and Legality

By: William C. Robinson Jr.
DNR Attorney

(OFFICIAL SEAL)

DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

Witness

Witness

By: _____
Joaquin G. Avino, P.E., P.L.S.

"LEAD AGENCY"

ATTEST:

MARSHALL ADER, CLERK

By: _____
Deputy Clerk

STATE OF FLORIDA
COUNTY OF DADE

The foregoing instrument was acknowledged before me this 28th day of APRIL, 1992, by Cynthia W. Curry, as Assist. County Manager, of Metropolitan Dade County.

NOTARY PUBLIC
My Commission Expires:

STATE OF FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, BOB CRAWFORD, COMMISSIONER

Witness

Witness

By: _____ (SEAL)
DIRECTOR, DIVISION OF ADMINISTRATION

"COOPERATING AGENCY"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 29th day of March, 1993, by Mike Cresham, as Director of Administration, Department of Agriculture and Consumer Services.

NOTARY PUBLIC (SEAL)
My Commission Exp

LEE H. SADLER
MY COMMISSION # CC 244401 EXPIRES
December 6, 1996
BONDED THRU TROY FAIN INSURANCE, INC.

Figure No. 11 - Multiple Agency Lease Agreement

1991 MAY 30 PM 2:06 91R180404

OFF REC 15046 PG 2931

FOLIO #30-4035-000-0610

By: David L. Heim
Date: 9/19/91

WARRANTY DEED

THIS WARRANTY DEED is made this 22nd day of May, 1991, by and between TRINITY EPISCOPAL PRIVATE SCHOOL, INC., a Florida private school corporation organized under Chapter 623, Florida Statutes, formerly known as Trinity Episcopal School, Inc. ("Grantor"), whose mailing address is 7410 Sunset Drive, Miami, Florida, and BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA ("Grantee"), whose mailing address is c/o Department of Natural Resources, Division of State Lands, 3900 Commonwealth Blvd., Mail Station 115, Tallahassee, Florida 32399.

W I T N E S S E T H:

THAT Grantor, for and in consideration of the sum of Ten and No/100 U.S. Dollars ($10.00) and other good and valuable considerations to it in hand paid by Grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to Grantee, its successors and assigns forever, the real property and appurtenances thereto (the "Land"), situate, lying and being in the County of Dade, State of Florida and described as follows:

The West 1/2 of the NW 1/4 of the SE 1/4 of the NW 1/4 of Section 35, Township 54 South, Range 40 East, and the East 1/2 of the NW 1/4 of the SE 1/4 of the NW 1/4 of Section 35, Township 54 South, Range 40 East, all lying and being in Dade County, Florida.

TOGETHER with the tenements, hereditaments and appurtenances thereto.

SUBJECT TO:

(1) Restrictive Covenant contained in Modification and Release of Restrictive Covenant filed for record January 10, 1991 in Official Records Book 14854, at Page 747, of the Public Records of Dade County, Florida.

PREPARED BY, RECORDING
REQUESTED BY, AND WHEN
RECORDED MAIL TO:
H. William Walker, Jr., Esq.
White & Case
4750 Southeast Financial Center
200 S. Biscayne Boulevard
Miami, Florida 33131-2352

Documentary Stamps Collected $6,775.00
$4725.00 SURTAX Doc. Stamps Collected
Class "C" Intangible Tax Collected $ ——
Clerk, Dade County, Fla.
By: [illegible] 5/30/91 DC

NO. 3941
EXHIBIT A
PAGE 11 OF 12

Figure No. 11 - Multiple Agency Lease Agreement

OFF REC 15404 PG 2932

TO HAVE AND TO HOLD the same in fee simple forever.

AND Grantor hereby fully warrants the title to the Land, and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, Grantor has caused this Warranty Deed to be executed on the day and year first above written.

Signed, sealed and delivered in the presence of:

TRINITY EPISCOPAL PRIVATE SCHOOL, INC., a Florida private school corporation organized under Chapter 623, Florida Statutes, formerly known as Trinity Episcopal School, Inc.

By: Tina Lane
Tina Lane
President
(Corporate Seal)

TRINITY EPISCOPAL PRIVATE SCHOOL, INC. CORPORATE SEAL 1982 FLORIDA

STATE OF FLORIDA)
) SS:
COUNTY OF DADE)

The foregoing instrument was acknowledged before me this 22 day of May, 1991, by Tina Lane, as President of Trinity Episcopal Private School, Inc., a Florida private school corporation organized under Chapter 623, Florida Statutes, formerly known as Trinity Episcopal School, Inc., who acknowledged before me that she executed the foregoing Warranty Deed on behalf of the corporation.

My Commission Expires:

NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP. APR.27,1992
BONDED THRU GENERAL INS. UND.

Notary Public
State of Florida at Large

WILLIE MAE LER, JR. NOTARY PUBLIC STATE OF FLORIDA

RECORDED IN OFFICIAL RECORDS BOOK OF DADE COUNTY, FLORIDA.
RECORD VERIFIED
Clerk of Circuit & County Courts

-2-

NO. 3941
EXHIBIT A
PAGE 14 OF 17

Figure No. 11 - Multiple Agency Lease Agreement

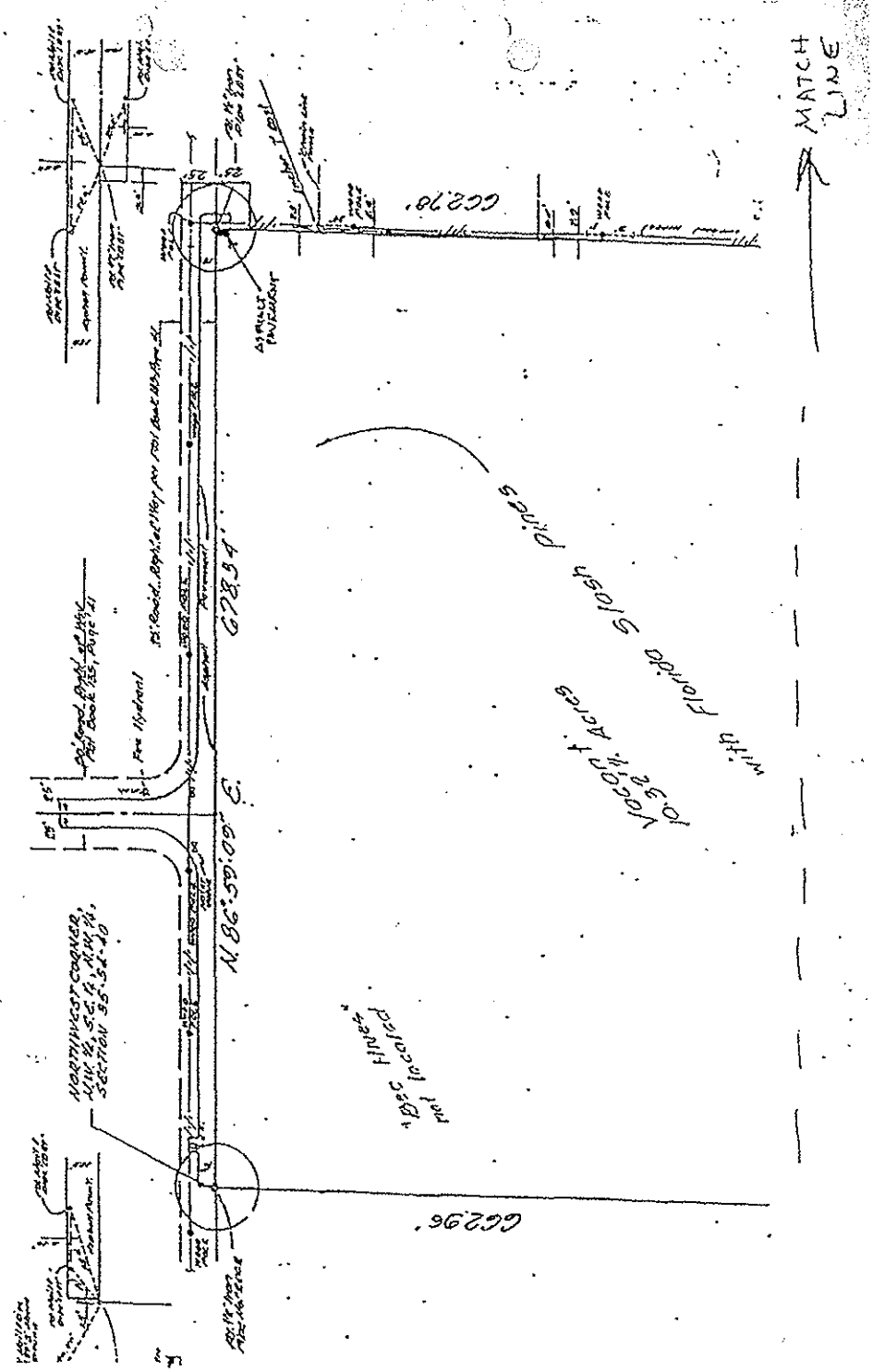


Figure No. 11 - Multiple Agency Lease Agreement

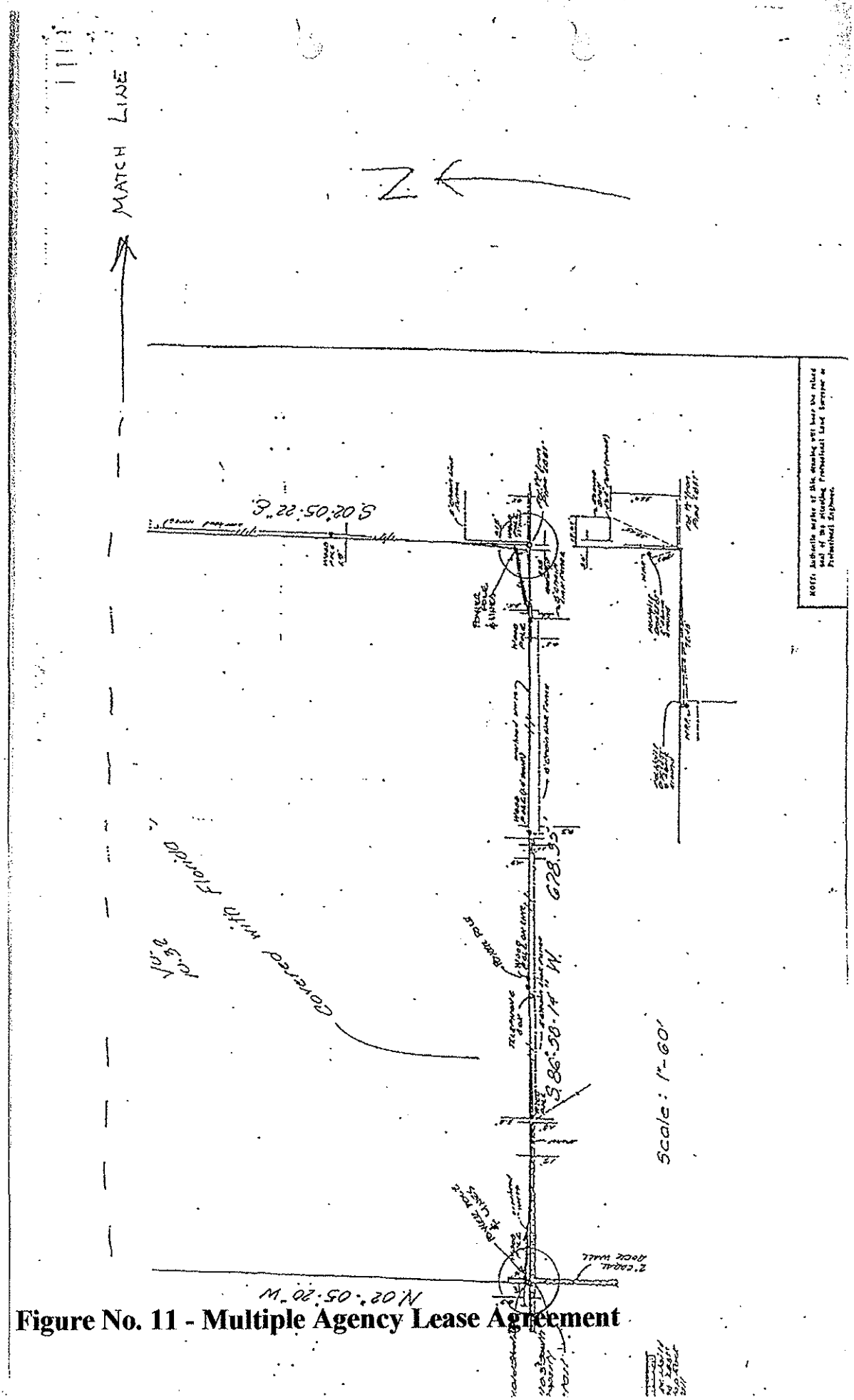


Figure No. 11 - Multiple Agency Lease Agreement

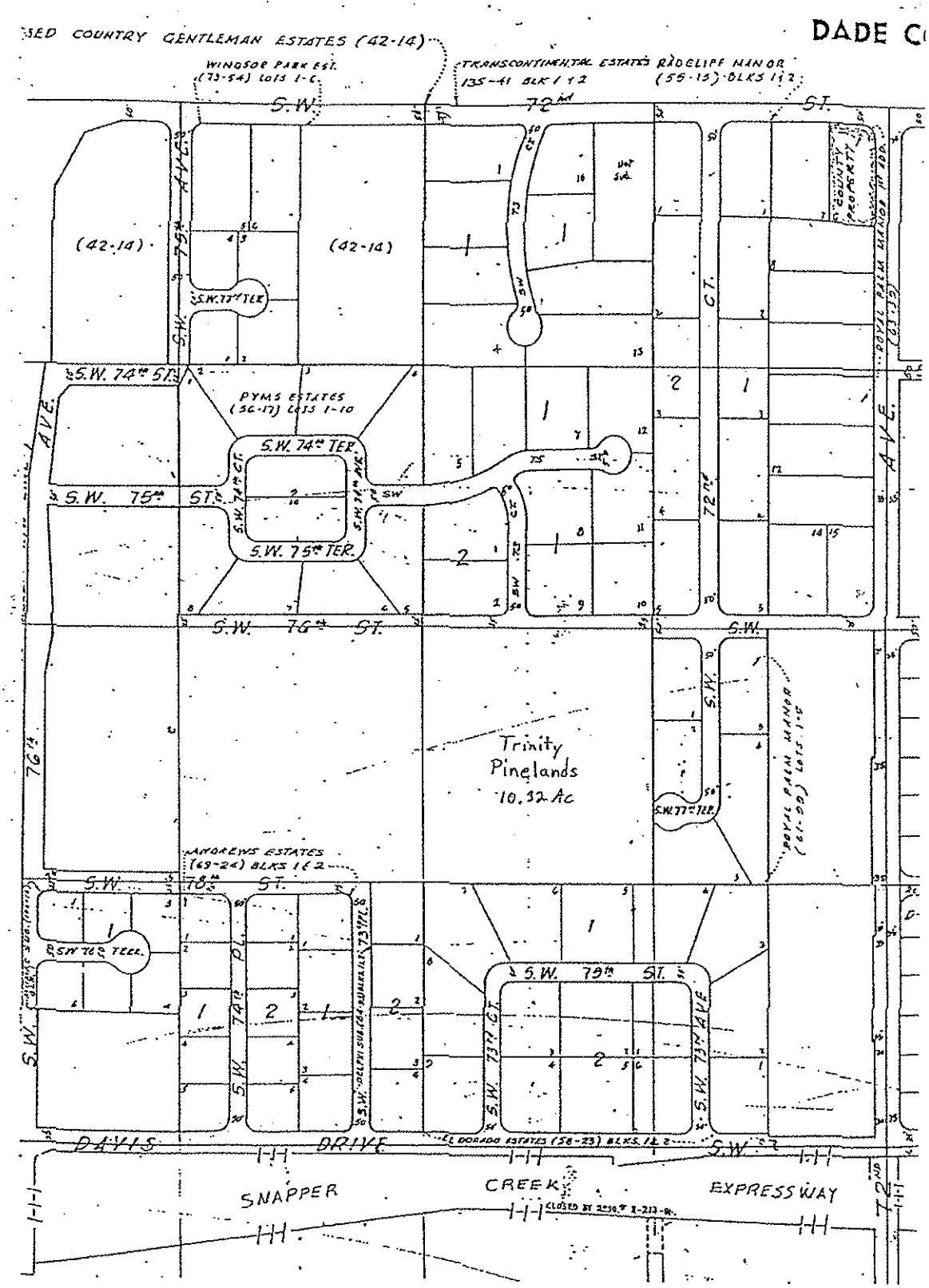


Figure No. 11 - Multiple Agency Lease Agreement

FIGURE NO. 12

FDOT REQUEST FOR STATEMENT OF SIGNIFICANCE LETTER

Florida Department of Transportation

JEB BUSH
GOVERNOR

DENVER J. STUTLER, JR.
SECRETARY

January 27, 2006

District Planning and Environmental Management Office
1000 NW 111th Avenue, Room 6109
Miami, FL 33172

Ms. Emilie M. Young, Program Director
Miami-Dade County Department of Environmental Resources Management
Environmentally Endangered Lands Program
33 SW 2nd Avenue, P.H. 2
Miami, FL 33130-1540

Dear Ms. Young:

Re: Statement of Significance – Owaissa Bauer Addition No. 1 Property
Krome Avenue South Project Development & Environment Study
Financial Management Number: 249614-4-21-1
County: Miami-Dade

The Florida Department of Transportation (FDOT) is conducting a Project Development & Environment (PD&E) Study of the SR 997/SW 177th Avenue/Krome Avenue corridor. The 10.07-mile project begins at SW 296th Street/Avocado Drive and ends at SW 136th Street/Howard Drive. This project is known as the Krome Avenue South Study. Another PD&E Study known as the Krome Avenue North Study, includes the project area which extends from SW 136th Street to SR 25/US 27/Okeechobee Road.

The Krome Avenue South project proposes to develop and analyze alternatives, including the no-build, 2-lane, 3-lane, and 4-lane widening alternatives. All alternatives will consider preserving the rural character of the corridor while providing safety and operational improvements. Right-of-way impacts are anticipated for some portions of the project corridor should wider typical sections be implemented.

As part of the PD&E process, the FDOT will be seeking a Section 4(f) Determination of Applicability (DOA) from the Federal Highway Administration (FHWA). Section 4(f) of the U.S. Department of Transportation Act of 1966 pertains to the protection of public resource lands such as parks, recreation areas, or wildlife and waterfowl refuges of national, state, or local significance. It is the understanding of the FDOT that within the Krome Avenue South project corridor, there is one potential Section 4(f) property, the Owaissa Bauer Addition No. 1 property, which falls under your Department's jurisdiction. This property is located on the southeast corner of Krome Avenue and SW 264 Street/Bauer Drive. This property would potentially be directly impacted by any

Figure No. 12 - FDOT Request for Statement of Significance Letter

widening alternatives considered by the FDOT. Based on a meeting between the FDOT and your agency on July 20, 2005, a description of the project and the potential impacts to this property were discussed.

In order for the FDOT to prepare the DOA package for FHWA consideration, the Department must first obtain a statement of significance and documentation of the intended use of the property from the appropriate official(s) with authority over the management and administration of the land. Official(s) having jurisdiction are the official(s) of the agency owning or administering the land. A **written Statement of Significance** from the official(s) having jurisdiction is required for the FHWA to determine if Section 4(f) protection applies to the property.

In order to be considered a Section 4(f) resource, a property must function as or be designated a **significant** public park, wildlife refuge, or recreational area. Significance means that in comparing the availability and function of the park, wildlife refuge, or recreational area with the park, recreational, and/or wildlife refuge objectives of the community or authority, the land in question plays an important role in achieving those objectives.

In summary, the Department would like to request a **Statement of Significance** by your office, regarding the significance and intended use of the Owaissa Bauer Addition No. 1 property, as required under Federal law as a potential Section 4(f) resource (explained above). This Statement should include up-to-date management plans or other official forms of documentation, if available, regarding the land, as well as the following information:

1. Approximate date the property was designated as a public property
2. Size and location of the property
3. Ownership and type of property
4. Function of or available activities on the property
5. Description and location of all existing and planned facilities
6. Access (pedestrian, vehicular, etc.) and usage (approximate number of users)
7. Relationship to other similarly used lands in the vicinity
8. Applicable clauses affecting ownership, such as leases, easements, covenants, restrictions, or conditions including foreclosure
9. Unusual characteristics of the property (flooding problems, terrain conditions, or other features) that either reduce or enhance the value of all or part of the property
10. Statement of Significance.

Please review the above information and attached project location map and provide us with the requested information. In addition, please identify any other functions, values, or other information that is pertinent to the development of the DOA.

Figure No. 12 - FDOT Request for Statement of Significance Letter

If you should need further information or have any questions, please feel free to contact me or Susanne Travis at (305) 470-5220. Thank you for your coordination efforts on this project.

Sincerely,

Sonica Dey for AB

Alice N. Bravo, P.E.
District Planning and Environmental Management Engineer

Enclosure

cc: Susanne Travis, FDOT
Marjorie Bixby, FDOT
Monica Diez, P.E., FDOT

Figure No. 12 - FDOT Request for Statement of Significance Letter

APPENDIX L

Federal Highway Administration Section 4(f)
de minimis Finding Concurrence

From: .Kendall@dot.gov [:Cathy.Kendall@dot.gov]
Sent: Wednesday, August 28, 2013 6:01 PM
To: Culhane, Barbara J
Cc: Croft, Vilma; Varela-Margolles, Aileen; Toolan, Kathleen; .Cunill@dot.gov; Jackson, Roy
Subject: RE: Krome South Section 4f De Minimus - Request for Concurrence

Barbara,

Thank you for the additional information regarding the Section 4(f) impacts from the various alternatives being evaluated for the Krome Avenue South EIS.

In reviewing the revised information, the SHPO concurrence letter, the previous information provided that includes the 2/7/13 responses to the FHWA De Minimis Questionnaire, our 7/14/13 teleconference to discuss the Section 4(f) impacts, and my field review on 7/24/13 that you organized, the Division has sufficient information at this time to determine that some of the alternatives will have only a de minimis Section 4(f) impact on some of the resources. Specifically, FHWA agrees with your recommendation and has determined that the following build alternatives, as proposed, will have a De Minimis impact under Section 4(f) for the following historic resources:

- Clarence J. Parman Residence (8DA9675) for Alternative 3
- Redland Golf Course (8DA10051) for Alternative 1 to 5
- Seaboard Air Line (CSX) Railroad (8DA10753) for Alternative 1 to 5

Please note this date as the FHWA de minimis finding for the EIS. If you have any questions or clarifications regarding this finding, please let me know.

Cathy Kendall, AICP
Environmental Specialist
FHWA - FL, PR and VI
545 John Knox Road, Suite 200
Tallahassee, FL 32303
(850) 553-2225
.kendall@dot.gov

From: Culhane, Barbara J [:Barbara.Culhane@dot.state.fl.us]
Sent: Monday, July 22, 2013 7:14 PM
To: Kendall, Cathy (FHWA)
Cc: Croft, Vilma; Varela-Margolles, Aileen; Toolan, Kathleen
Subject: Krome South Section 4f De Minimus - Request for Concurrence
Importance: High

Cathy,

Attached please find the information that is being provided in support of a De Minimis finding under Section 4(f) for the Krome South Project. Based on the request from FHWA, a detailed table and supporting text were developed to clearly document findings related to the four Section 4(f) historic resources and the five alternatives.

All resources and build alternative combinations received a Section 106 Determination of No Adverse Effects, with the exception of the Howard Schaff Residence in Alternative 3. As part of the interagency coordination, FHWA made SHPO aware of its intent to make a De Minimis Section 4(f) finding for all properties and build alternatives that SHPO concurred with as having "No Effect" or "No Adverse Effect" under Section 106 of the National Historic Preservation Act.

The information provided notes that there is no Section 4(f) use for the following resource/alternative combinations:
• Clarence J. Parman Residence (8DA9675) for Alternatives 1, 2, 4 and 5
• Howard Schaff Residence (8DA9674) for Alternatives 1, 2, 4 and 5

Based on the SHPO Determination as well as coordination with FHWA, the following build alternatives should qualify for a De Minimis finding for the following historic resources, based on limited right-of-way acquisition:
• Clarence J. Parman Residence (8DA9675) for Alternative 3
• Redland Golf Course (8DA10051) for Alternative 1 to 5
• Seaboard Air Line (CSX) Railroad (8DA10753) for Alternative 1 to 5

For the Howard Schaff Residence, Alternative 3 would require removal of the large mango trees in front of the residence. The FHWA has determined that removal of these trees constitutes an adverse effect under Section 106, and the SHPO has concurred with this finding (Determination of Effects letter dated August 24, 2012). Removal of these trees would require an individual Section 4(f) evaluation.

Following your review of the attached information, FDOT respectfully requests your concurrence with the findings within the attached documents. If you have questions regarding the subject project, please contact me at 305.470.5231 or via e-mail.

Thank you,

-Barbara

Barbara B. Culhane, M.S., A.I.C.P.
District Cultural Resources Coordinator/
Environmental Supervisor
Florida Department of Transportation, District Six
Adam Leigh Cann Building
Intermodal Systems Planning Office
1000 N.W. 111 Avenue
Miami, Florida 33172
Office: 305.470.5231

APPENDIX M

Efficient Transportation Decision Making
Programming Screen Summary Report

ETDM Summary Report

Project #7800 - SR 997/Krome Avenue/SW 177th Ave (South)

Final Project Development - Published on 09/20/2010

Generated by Megan McKinney (on behalf of FDOT District 6)

Printed on: 11/15/2012

Table of Contents

Chapter 1 Overview 2

Chapter 2 Project Details 3

2.1. Purpose of and Need for 3

Chapter 3 Alternative #1 6

3.1. Alternative Description 6

3.2. Segment Description(s) 6

Chapter 4 Eliminated Alternative Information 23

4.1. Eliminated Alternatives 23

Chapter 5 Project Scope 24

5.1. General Project Commitments 24

5.2. Required Permits 24

5.3. Required Technical Studies 24

5.4. Class of Action 24

5.5. Dispute Resolution Activity Log 24

Appendices 25

6.1. GIS Analyses 25

6.2. Project Attachments 25

6.3. Degree of Effect Legend 25

Introduction to Programming Screen Summary Report

The Programming Screen Summary Report shown below is a read-only version of information contained in the Programming Screen Summary Report generated by the ETDM Coordinator for the selected project after completion of the ETAT Programming Screen review. The purpose of the Programming Screen Summary Report is to summarize the results of the ETAT Programming Screen review of the project; provide details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase for the project. Available information for a Programming Screen Summary Report includes:

- Screening Summary Report chart
- Project Description information (including a summary description of the project, a summary of public comments on the project, and community-desired features identified during public involvement activities)
- Purpose and Need information (including the Purpose and Need Statement and the results of agency reviews of the project Purpose and Need)
- Alternative-specific information, consisting of descriptions of each alternative and associated road segments; an overview of ETAT Programming Screen reviews for each alternative; and agency comments concerning potential effects and degree of effect, by issue, to natural, cultural, and community resources.
- Project Scope information, consisting of general project commitments resulting from the ETAT Programming Screen review, permits, and technical studies required (if any)
- Class of Action determined for the project
- Dispute Resolution Activity Log (if any)

The legend for the Degree of Effect chart is provided in an appendix to the report.

For complete documentation of the project record, also see the GIS Analysis Results Report published on the same date as the Programming Screen Summary Report.

#7800 SR 997/Krome Avenue/SW 177th Ave (South)

District: District 6
County: Miami-Dade
Planning Organization: FDOT District 6
Plan ID: 249614-4
Phase: Project Development
From: SW 296th Street
To: SW 136th Street
Financial Management No.: Not Available
Federal Involvement: No federal involvement has been identified.

Contact Information: Vilma Croft Vilma.Croft@dot.state.fl.us
Project Web Site: http://WWW.KromeSouth.com
Snapshot Data From: Programming Screen Summary Report Re-published on 09/20/2010 by Megan McKinney

Issues and Categories are reflective of what was in place at the time of the screening event.

	Natural											Cultural			Community						
	Air Quality	Coastal and Marine	Contaminated Sites	Farmlands	Floodplains	Infrastructure	Navigation	Special Designations	Water Quality and Quantity	Wetlands	Wildlife and Habitat	Historic and Archaeological Sites	Recreation Areas	Section 4(f) Potential	Aesthetics	Economic	Land Use	Mobility	Relocation	Social	Secondary and Cumulative Effects
Alternative #1 From: SW 296th Street To: SW 136th Street *Re-Published: 09/20/2010 Reviewed from 05/22/2006 to 07/06/2006)*	0	N/A	3	2	0	2	N/A	3	2	2	2	2	3	2	2	0	2	1	2	2	2

Purpose of and Need for

Purpose and Need Statement

Krome Avenue, located in western Miami-Dade County, is part of the Florida Intrastate Highway System (FIHS), which the Florida Legislature adopted in 1990. The existing corridor is also physically and functionally deficient and can meet neither the current needs nor future demands of the area with regard to safety, flooding, mobility, water quality, economic competitiveness and preservation of the existing roadway as a high quality transportation facility. Furthermore, Krome Avenue provides regional connectivity and serves as an alternate hurricane evacuation route to US-1 and the Florida Turnpike for those living in south Miami-Dade County.

The proposed project has been found consistent with the Department of Community Affairs (DCA) approved Miami-Dade County Comprehensive Development Plan, as amended (required under Chapter 163, Florida Statutes) and with Miami-Dade Comprehensive Development Master Plan through the DCA's review of the tentative Work Program pursuant to Section 339.135(4)(f), Florida Statutes. The project is consistent with the approved comprehensive Long Range Transportation Plan of the Metropolitan Planning Organization (MPO) and the local gubernatorially-approved 2004 Miami-Dade MPO Transportation Improvement Plan (TIP). The project is consistent with the State Implementation Plan (SIP) for areas of ozone non-attainment. In addition, the improvement is part of an MPO-approved Congestion Management System (CMS) and is contained in a Federally-approved conforming TIP.

Project Description

Krome Avenue, within the project limits from S.W. 296th Street to S.W. 136th Street, (referred to as "Krome South") is a 10.24-mile roadway classified as a rural principal arterial (see Project Location Map). The typical section varies slightly consisting primarily of two lanes, varying in width from 10.5 feet to 12 feet; paved shoulders ranging from 4 feet to 12 feet; and swales. The project proposes to develop and analyze alternatives including a no build alternative, a Transportation System Management (TSM) alternative, and several build alternatives consisting of two, three and four-lane typical sections. All alternatives will look at preserving the rural character of the corridor while providing safety and operational enhancements.

The Advance Notification (AN) for this project was distributed February 27, 2004 (see attached AN and summary of responses)(Florida State Clearinghouse SAI#: FL200403085571C). The Federal Highway Administration (FHWA) approved the Class of Action as an Environmental Impact Statement (EIS), March 24, 2005. The Notice of Intent (NOI) to prepare an EIS was published in the Federal Register November 1, 2005. In August 2005, the President signed into law the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Due to SAFETEA-LU guidelines an EIS project that had its NOI approved on or after August 11, 2005 must be screened through the Environmental Screening Tool (EST). As a result, this project is now being screened through the Programming Screen of the EST.

Summary of Public Comments

The Advance Notification (SAI#: FL200403085571C)distributed February 27, 2004. Project's Public Involvement Plan is being implemented at this time. To date the following meetings have taken place:

Public/Stakeholder/Agency/Elected Officials Meetings
* 27 Individual Stakeholder Interviews between 12/03 and 7/04
* Redland Citizen Association Meeting - 01/08/04
* State of Florida Department of Agriculture and Consumer Services - 02/26/04
* Miami-Dade County Farm Bureau - 03/10/04
* Community Redevelopment Agency CRA - 04/07/04
* U.S. Department of the Interior - National Park Service - 04/30/04
* Greater Homestead/Florida City Chamber of Commerce Presentation - 05/27/04
* Agency Roundtable Scoping Meeting - 07/21/04
* Miami-Dade Empowerment Trust, Inc./Homestead Empowerment Zone Neighborhood and Board of Directors - 10/07/04
* Kendall Federation of Homeowners Association - 12/06/04
* 9 Individual elected officials meetings between 2004 and 02/05
* Community Council 14 Meeting - 06/17/05
* 9 Community Advisory Committee (CAC) Meetings 12/04 to 4/06
* Vision Council Business Forum Regarding South Miami-Dade Transportation Projects - 06/17/05
* Miami-Dade County Department of Environmental Resources Management (DERM) - Environmentally Endangered Lands (EEL) Program - 07/20/05 and 04/27/06
* South Miami-Dade Watershed Study Advisory Committee - 04/27/06
* Miami-Dade Metropolitan Planning Organization (MPO) meetings
* Bicycle/Pedestrian Advisory Committee (BPAC) - 07/27/05
* Citizen's Technical Advisory Committee (CTAC) - 06/30/04 and 2/22/06

Additional Consistency Information
- Consistent with Air Quality Conformity.
- Consistent with Local Government Comp Plan.
- Consistent with MPO Goals and Objectives.

Lead Agency
Federal Highway Administration

Exempted Agencies
No exemptions have been assigned for this project.

Community Desired Features
No desired features have been entered into the database. This does not necessarily imply that none have been identified.

Communities Within 500 Feet
No communities were found within a 500 ft. buffer disance for this project.

Purpose and Need Reviews

FL Department of Environmental Protection

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/06/2006	Lauren Milligan (lauren.milligan@dep.state.fl.us)	No Purpose and Need comments found.

FL Department of State

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/06/2006	Sherry Anderson (sanderson@dos.state.fl.us)	No Purpose and Need comments found.

FL Fish and Wildlife Conservation Commission

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	06/23/2006	Scott Sanders (scott.sanders@myfwc.com)	No Purpose and Need comments found.

Federal Highway Administration

Acknowledgement	Date Reviewed	Reviewer	Comments
Accepted	10/09/2007	Gregory Williams (greg.williams@dot.gov)	1. Purpose and Need SAFETEA-LU requires an opportunity for involvement by participating agencies and the public in defining the range of alternatives. This opportunity must be provided prior to the lead Federal agency's decision regarding the range of reasonable alternatives to be evaluated. That this project is proceeding using the ETDM planning and programming screens will assist meeting the SAFETEA-LU provisions. The project sponsor should document the input opportunities provided to agencies and public and summarize those inputs for the development of the Purpose and Need and range of alternatives. 2. Purpose and Need - Estimated project cost and funding source is not identified. The Project Description Report indicates that the project is in the LRTP and local plans, so presumably these estimated costs are available and should be included in the Project Description Report. This information will be important in the project prioritization process to weigh the merits of the project alternatives against other projects and alternatives competing for limited funding. 3. Secondary and Cumulative (Moderate) The project is located in a relatively undeveloped area that is primarily agricultural, and includes protected plant communities (pine rockland) that may be globally imperiled. The environmental document should assess secondary impacts to these areas, as well as cumulative impacts to agricultural lands, protected plant communities, and other natural resources.

National Marine Fisheries Service

Acknowledgement	Date Reviewed	Reviewer	Comments

Understood	06/27/2006	Madelyn Martinez (Madelyn.Martinez@noaa.gov)	NONE

US Army Corps of Engineers

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	06/14/2006	Robert Kirby (robert.j.kirby@usace.army.mil)	No Purpose and Need comments found.

US Environmental Protection Agency

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/20/2006	Maher Budeir (budeir.maher@epa.gov)	No Purpose and Need comments found.

US Fish and Wildlife Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	05/25/2006	John Wrublik (john_wrublik@fws.gov)	No Purpose and Need comments found.

The following organizations were notified but did not submit a review of the Purpose and Need:
- FL Department of Agriculture and Consumer Services
- FL Department of Community Affairs
- Federal Transit Administration
- Miccosukee Tribe of Indians of Florida
- National Park Service
- Natural Resources Conservation Service
- Seminole Tribe of Florida
- South Florida Water Management District
- US Coast Guard

Alternative #1

Alternative Description

Name	From	To	Type	Status	Total Length	Cost	Modes	SIS
Alternative was not named.	SW 296th Street	SW 136th Street	Widening	Work Program	10.131 mi.		Roadway	Y

Segment Description(s)

Segment No.	Name	Beginning Location	Ending Location	Length (mi.)	Roadway Id	BMP	EMP
Unnamed Segment	Unnamed Segment	SW 296th Street	SW 136th Street	10.131	Digitized		

Jurisdiction and Class

Segment No.	Jurisdiction	Urban Service Area	Functional Class
Unnamed Segment	FDOT	In/Out	RURAL: Principal Arterial - Other

Base Conditions

Segment No.	Year	AADT	Lanes	Config
Unnamed Segment	2004	19600	2	Lanes Undivided

Interim Plan

Segment No.	Year	AADT	Lanes	Config
Unnamed Segment				

Needs Plan

Segment No.	Year	AADT	Lanes	Config
Unnamed Segment	2030			

Cost Feasible Plan

Segment No.	Year	AADT	Lanes	Config
Unnamed Segment	2030			

Funding Sources

No funding sources found.

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Natural			
Air Quality	2 Minimal	US Environmental Protection Agency	07/20/2006
Contaminated Sites	3 Moderate	US Environmental Protection Agency	07/20/2006
Contaminated Sites	3 Moderate	FL Department of Environmental Protection	07/06/2006
Water Quality and Quantity	3 Moderate	US Environmental Protection Agency	07/20/2006
Water Quality and Quantity	3 Moderate	FL Department of Environmental Protection	07/06/2006
Wetlands	3 Moderate	US Environmental Protection Agency	07/20/2006
Wetlands	3 Moderate	FL Department of Environmental Protection	07/06/2006
Wetlands	0 None	National Marine Fisheries Service	06/27/2006
Wetlands	2 Minimal	US Army Corps of Engineers	06/14/2006
Wetlands	2 Minimal	US Fish and Wildlife Service	05/25/2006

Wildlife and Habitat	3 Moderate	FL Fish and Wildlife Conservation Commission	07/11/2006
Wildlife and Habitat	2 Minimal	US Fish and Wildlife Service	05/25/2006
Cultural			
Historic and Archaeological Sites	3 Moderate	FL Department of State	07/06/2006
Recreation Areas	3 Moderate	FL Department of Environmental Protection	07/06/2006
Community			
Aesthetics	3 Moderate	FDOT District 6	10/02/2006
Economic	1 Enhanced	FDOT District 6	10/02/2006
Land Use	3 Moderate	FDOT District 6	10/02/2006
Land Use	3 Moderate	Federal Highway Administration	07/18/2006
Land Use	0 None	FL Department of Community Affairs	06/28/2006
Mobility	1 Enhanced	FDOT District 6	10/02/2006
Relocation	3 Moderate	FDOT District 6	10/02/2006
Social	2 Minimal	FDOT District 6	10/02/2006
Secondary and Cumulative			
Secondary and Cumulative Effects	3 Moderate	FL Fish and Wildlife Conservation Commission	07/11/2006

ETAT Reviews and Coordinator Summary: Natural

Air Quality

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 09/25/2007 by FDOT District 6

Comments:
An Air Quality Screening Analysis has been conducted and the results are included in the Air Quality Report for the project.

As of June 2005, Miami-Dade County is an area designated as Attainment for ozone standards under the criteria provided in the Clean Air Act Amendments of 1990; therefore, transportation conformity no longer applies.

Degree of Effect: 2 *Minimal* assigned 07/20/2006 by Maher Budeir, US Environmental Protection Agency

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
Air Quality in the Area
Comments on Effects to Resources:
The project is in an area designated as non-Attainment area. An air quality study is needed to demonstrate that the project will not cause an exceedance of the National Ambient Air Quality Standards.
Additional Comments (optional):
None found.

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 08/07/2007 by FDOT District 6

Comments:
The Advance Notification response from the State Clearinghouse, dated May 4, 2004 included confirmation that the project is currently consistent with the Coastal Zone Management Program.

The project is not located within a Coastal Barrier Resource (CBR) as defined by the Governor's Executive Order 81-105 and the

Federal Coastal Barrier Resources Act.
None found

Contaminated Sites

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 09/25/2007 by FDOT District 6

Comments:
A Contamination Screening Evaluation Report (CSER) has been prepared for the project. Potentially contaminated sites were identified and assessed. In addition, considering the fact that a portion of the corridor is an area designated as a brownfield area, the potential for soil and/or groundwater contamination from local or regional sources does exist. If necessary, additional contamination assessments will be conducted during the final design phase of the project.

Potential impacts during construction will be minimized through adherence to the FDOT Standard Specifications for Road and Bridge Construction.

Degree of Effect: 3 *Moderate* assigned 07/20/2006 by Maher Budeir, US Environmental Protection Agency

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
Groundwater and land within the 500' buffer zone of this project.
Comments on Effects to Resources:
Based on the ETDM data 134 acres of the Brownfield site (REDLANDS/LEASURE CITY AREA) is within the 500' buffer zone for this site. Additionally there are more than 10 petroleum tanks and gasoline station sites within the same buffer. There is a significan potential of encountering contamination on this site. A site specific survay and study must mbe conducted to assess contaminant releases within the buffer zone. Based on the results of such assessment, appropriate measures must be taken during planning and construction to appropriately handle contaminated materials and to meet other site management requirements. DERM and Flroida DEP must be consulted in interprating contamination assessment data.
Additional Comments (optional):
None found. **FDOT District 6 Feedback to US Environmental Protection Agency's Review (09/13/2007):** A Contamination Screening Evaluation Report (CSER) has been prepared for the project. Potentially contaminated sites, including those referenced above, were identified and assessed. In addition, considering the fact that a portion of the corridor is an area designated as a brownfield area, the potential for soil and/or groundwater contamination from local or regional sources does exist. If necessary, additional contamination assessments will be conducted during the final design phase of the project.

Degree of Effect: 3 *Moderate* assigned 07/06/2006 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
All lands lying within the proposed widening corridor.
Comments on Effects to Resources:
-- Based on a review of National Priority List (NPL) / Superfund Sites, Solid Waste / Dump Site, Brownfield, and Underground Storage Tank (UST) GIS data layers publicly available from the Florida Geographic Data Library, there are many potential contamination sites and hazardous materials sites present throughout the project area.
-- Groundwater monitoring wells are likely present along and near the entire length of the project. Arrangements need to be made to properly abandon (in accordance with Chapter 62-532, Florida Administrative Code) and or replace any wells that may be destroyed or damaged during construction.
-- There are numerous public supply wellfields in the project boundaries, with probably hundreds of water production wells (irrigation, potable, industrial). Best management prractices need to be used during all construction activities.
-- In the event contamination is detected during construction, the DEP and Miami-Dade County Department of Environmental Resources Management should be notified and the FDOT may need to address the problem through additional assessment and/or remediation activities. Dewatering projects would require permits / approval from the South Florida Water Management District, Water Use Section and coordination with the Miami-Dade County Department of Environmental Resources Management.
-- Any land clearing or construction debris must be characterized for proper disposal. Potentially hazardous materials must be properly managed in accordance with Chapter 62-730, F.A.C. In addition, any solid wastes or other non-hazardous debris must be managed in accordance with Chapter 62-701, F.A.C.
-- Please be advised that a new rule, 62-780, F.A.C., became effective on April 17, 2005. In addition, Chapters 62-770, 62-777, 62-782 and 62-785, F.A.C., were amended on April 17, 2005 to incorporate recent statutory changes. Depending on the findings of the environmental assessments, there are "off-property" notification responsibilities potentially associated with this project. These rules may be found at the following website: http://www.dep.state.fl.us/waste/
-- Early planning to address these issues is essential to meet construction and cleanup (if required) timeframes. Innovative technologies, such as special storm water management systems, engineering controls and institutional controls, such as conditions on water production wells and dewatering restrictions, may be required, depending on the results of environmental assessments.
-- Staging areas, with controlled access, should be planned in order to safely store raw material paints, adhesives, fuels, solvents, lubricating oils, etc. that will be used during construction. All containers need to be properly labeled. The project managers should consider developing written construction Contingency Plans in the event of a natural disaster, spill, fire or environmental release of hazardous materials stored / handled for the project construction.
Additional Comments (optional):

None found. **FDOT District 6 Feedback to FL Department of Environmental Protection's Review (09/13/2007):** All of these issues are being addressed in the CSER for the project. If necessary, additional contamination assessments will be conducted during the final design phase of the project.

The FDOT will adhere to all current federal, state and local government ordinances, permits, best management practices, planning, design, construction, operation, maintenance, monitoring requirements and engineering recommendations to protect the above and below ground environmental integrity of the roadway corridor and its general vicinity. Potential impacts during construction (including waste handling and disposal) will be minimized through adherence to all state and local regulations and to the latest edition of the FDOT Standard Specifications for Road and Bridge Construction.

Farmlands

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 08/07/2007 by FDOT District 6

Comments:
The study corridor traverses rural farming and low-density residential communities. The rural land uses include row crop agricultural fields, fruit tree orchards, herbaceous ornamental fields, and woody ornamental and fruit tree nurseries. Farming is also actively practiced within existing FDOT roadway right-of-way and directly adjacent to the Krome Avenue roadway corridor. Those areas currently farmed within the existing FDOT roadway right-of-way are considered to be designated as transportation land use and not agricultural land use.

FDOT is currently coordinating the evaluation of farmland conversion impacts associated with the project with the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS).
None found

Floodplains

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 08/07/2007 by FDOT District 6

Comments:
Floodplains are known to occur within the project boundaries. The Krome Avenue corridor lies within Zone AH (base flood elevation is determined to be 7-8 feet) and Zone X (base flood elevation determined to be 1-3 feet).

Miami-Dade County has no designated regulatory floodways. It is anticipated that the stormwater management system will be improved by the proposed action. Based on the project scope, no impact to floodplains is anticipated.
None found

Infrastructure

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
Several franchised utility companies and governmental utility departments have facilities within the project area, including electric power lines, water and sewer lines, cable TV lines, gas lines, and telephone lines.

Within the project limits, there is one railroad crossing (FDOT Crossing Number 631137L). This is an active crossing and there is no abandonment plan for this crossing. There are no fixed schedules for freight and passenger train operations along this crossing, demand based freight trains use this rail segment.

Utility pole relocations may occur as a result of the project. The FDOT will coordinate with utility owners to insure that minimal utility/railroad impacts occur from this project.
None found

Navigation

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 08/07/2007 by FDOT District 6

Comments:
No navigable waterways exist within the project limits; therefore, no impacts will occur.
None found

Special Designations

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 09/25/2007 by FDOT District 6

Comments:
A privately owned parcel, known as Mary Krome Park, is located at the southern terminus of the roadway corridor at SW 296th Street on the west side of Krome Avenue. This privately owned and maintained parcel consists of artificially planted rockland and coastal hammock species and has no special designations applied to it.

A second parcel, the Owaissa Bauer Addition No. 1, is located south of SW 264th Street on the east side of Krome Avenue. This parcel is maintained as an Environmentally Endangered Lands (EEL) Program natural preserve protected and managed by Miami-Dade County. Coordination is being conducted with the Miami-Dade County DERM EEL Program and the Miami-Dade County Parks and Recreation Departments Natural Areas Management Program (NAM), which assists in the management of the parcel, to discuss avoidance and minimization of impacts to this parcel. EEL/NAM representatives are currently evaluating each alternative and coordination is on-going. The results of these coordination efforts will be included in the Endangered Species Biological Assessment (ESBA) for this project, which will be available in electronic format online via the FDOT Environmental Screening Tool (EST).
None found

Water Quality and Quantity

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
Miami-Dade County is underlain by the Biscayne Aquifer system, the sole source of potable water for most of southeastern Florida. All necessary precautions and best management practices (BMPs) pertaining to construction will be followed to prevent adverse impacts to the underlying sole source aquifer. The Advance Notification response from the USEPA (dated June 30, 2004) concluded that the project should have no significant negative impacts to the sole source aquifer, if BMPs are employed.

Both agencies recommended a study to evaluate the existing and future stormwater runoff conditions and effects. The FDEP also stressed the importance of treating stormwater runoff. Three areas identified as surface waters were identified within the study corridor. These areas include: an inundated rock mining pit plus the South Florida Water Management Districts (SFWMDs) C-102/Princeton and C-103/Mowry canals. Water quality impacts to these surface water areas resulting from potential upland erosion and sedimentation during construction activities will be controlled in accordance with the latest edition of FDOT's Standard Specifications for Road and Bridge Construction and through the use of Best Management Practices, including temporary erosion control measures to ensure compliance with Federal and State water quality standards. Furthermore, stormwater runoff will be treated prior to discharge per State and local stormwater management criteria and every effort will be made to maximize storage and treatment of stormwater. The project's stormwater facility design will include, at a minimum, the water quantity and quality requirements as required by Chapter 24, Section 24-58 of the Miami-Dade County Code. The Miami-Dade County requirements meet or exceed the State of Florida water quality and water quantity requirements. The proposed stormwater management system will be permitted through the SFWMD and will meet all required criteria for storage and treatment. Therefore, it is anticipated that water quality within the proposed project area may improve due to the proposed stormwater treatment features.

Degree of Effect: 3 *Moderate* assigned 07/20/2006 by Maher Budeir, US Environmental Protection Agency

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
Ground water, wetlands and surface water in the buffer zone.
Comments on Effects to Resources:
Impact to surface water must be minimized by careful and thorough treatment of the surface water runoff. Several canals and ditches exist in the area. Impact on surface water runoff is likely to impact wetlands and groundwater in the area. A complete hydrology study should be perform to define the qualitative and quantitative impact on the groundwater - surface water interaction.
Additional Comments (optional):
None found.

Degree of Effect: 3 *Moderate* assigned 07/06/2006 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
Stormwater runoff from the road surface may alter adjacent wetlands and surface waters through increased pollutant loading. Natural resource impacts within and adjacent to the proposed road right-of-way will likely include alteration of the existing surface water hydrology and natural drainage patterns, and reduction in flood attenuation capacity of area creeks, ditches, and sloughs as a result of increased impervious surface within the watershed. Every effort should be made to maximize the treatment of stormwater runoff from the proposed road project to prevent ground and surface water contamination. Stormwater treatment should be designed to maintain the natural pre-development hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands.
Comments on Effects to Resources:
We recommend that the study include an evaluation of existing stormwater treatment adequacy and details on the future stormwater treatment facilities. Retro-fitting of stormwater conveyance systems would help reduce impacts to water quality. Increased stormwater runoff carrying oils, greases, metals, sediment, and other pollutants from the increased impervious surface would be of significant concern.

Additional Comments (optional):
None found.

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
No areas with characteristics indicative of jurisdictional vegetated wetlands were identified within the project corridor; therefore, no impacts to jurisdictional vegetated wetlands are anticipated as a result of this project.

Three areas identified as surface waters were identified within the study corridor. These areas include an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street.

Nationwide authorization from the U.S. Army Corps of Engineers (USACE) will be applied for during the final design phase of the project for impacts to surface waters.

These issues will be addressed in the Wetland Evaluation Report (WER) for the project.

Degree of Effect: 3 *Moderate* assigned 07/20/2006 by Maher Budeir, US Environmental Protection Agency

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
Wetlands
Comments on Effects to Resources:
Based on ETDM analysis, wetlands may be impacted with the proposed project. Impact to wetlands must be minimized. Unavoidable impact must be fully mitigated.
Additional Comments (optional):
None found.

Degree of Effect: 3 *Moderate* assigned 07/06/2006 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
The National Wetlands Inventory GIS report indicates that there are 81.07 acres of palustrine wetlands within 500 feet of the project area.
Comments on Effects to Resources:
The project will require an environmental resource permit (ERP) from the South Florida Water Management District. The ERP applicant will be required to eliminate or reduce the proposed wetland resource impacts of the roadway widening project to the greatest extent practicable:
- Minimization should emphasize avoidance-oriented corridor alignments, wetland fill reductions via pile bridging and steep/vertically retained side slopes, and median width reductions within safety limits.
- Wetlands should not be displaced by the installation of stormwater conveyance and treatment swales; compensatory treatment in adjacent uplands is the preferred alternative.
- After avoidance and minimization have been exhausted, mitigation must be proposed to offset the adverse impacts of the project to existing wetland functions and values. Significant attention is given to forested wetland systems, which are difficult to mitigate.
- The cumulative impacts of concurrent and future road improvement projects in the vicinity of the subject project should also be addressed.
Additional Comments (optional):
None found. **FDOT District 6 Feedback to FL Department of Environmental Protection's Review (08/08/2007):** Note that the 81.07 acres of palustrine wetlands identified through the GIS report are located entirely outside of the project limits and will not be impacted as a result of this project. Three areas identified as surface waters were identified within the study corridor. These areas include an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street.

An Environmental Resources Permit will be applied for and obtained, prior to construction, for impacts to the three surface water areas and for the new stormwater management system. Alternatives will consider minimization of impacts to surface waters, while enhancing the safety and drainage needs of the facility. Because no jurisdictional wetland resources will be impacted as a result of this project, no mitigation is proposed. Also, any loss in functional values from unavoidable impacts to the existing rock mining pit and canal features (all with an almost non-existent littoral zone and sparsely vegetated side slopes) will be compensated with the construction of the new stormwater system which will include swale/dry retention areas conducive to the growth of hydrophytic vegetation. The proposed drainage system will have a net positive effect on the quality of water entering receiving waters and wetlands.

Degree of Effect: 0 *None* assigned 06/27/2006 by Madelyn T Martinez, National Marine Fisheries Service

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
NONE
Comments on Effects to Resources:
NONE
Additional Comments (optional):
Based on the project location, information provided in the ETDM website, discussions with other agencies, and GIS-analysis on wetlands, and a site visit on June 18, 2006, NOAAs National Marine Fisheries Service concludes the proposed work would not directly impact areas that support NOAA trust resources. We have no comments or recommendations to provide pursuant to the essential fish habitat (EFH) requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) P.L. 104-297. Further consultation on this matter is not necessary unless future modifications are proposed and you believe that the proposed action may result in adverse impacts to EFH.

Degree of Effect: 2 *Minimal* assigned 06/14/2006 by Robert Kirby, US Army Corps of Engineers

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
None found.
Comments on Effects to Resources:
Impacts to tributaries (canals) probable but should be minimal and qualify for a NW 14
Additional Comments (optional):
None found.

Degree of Effect: 2 *Minimal* assigned 05/25/2006 by John Wrublik, US Fish and Wildlife Service

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
Wetlands
Comments on Effects to Resources:
Wetlands provide important habitat for fish and wildlife. If wetlands are found within the project area, we recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of wetland resources.
Additional Comments (optional):
None found.

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected ecologically significant pine rockland community known as Owaissa Bauer Addition No. 1 is located adjacent to the roadway corridor, and a privately owned parcel, known as Mary Krome Park, consists of artificially planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas include an inundated rock mining pit, the SFWMD's C-102/Priceton canal, and the SFWMD's C-103/Mowry canal.

Federally and state listed wildlife species that may potentially occur along the project corridor will be evaluated in the Endangered Species Biological Assessment (ESBA).

Issues raised by FWS and FFWCC will be addressed in the ESBA report for the project. Impacts to protected species are expected to be minimal. Coordination is being conducted with USFWS, FFWCC, FDACS, Miami-Dade County DERM EEL Program, and the Miami-Dade County Park and Recreation Department Natural Areas Management Program (NAM) to discuss avoidance/minimization efforts and potential mitigation.

Degree of Effect: 3 *Moderate* assigned 07/11/2006 by Scott Sanders, FL Fish and Wildlife Conservation Commission

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:

The Habitat Conservation Scientific Services Section of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated an agency review of ETDM #7800 in Dade County, and provides the following comments related to potential impacts to fish and wildlife resources on this Programming Phase project. The FWC also commented on this project in response to SAI #FL200403085571C in February 2004.

This 10.2-mile-long road project consists of developing and analyzing various Alternatives, including a No-Build Alternative, a Transportation System Management Alternative, and several Build Alternatives consisting of expanding the current roadway into two, three, and four-lane typical sections. The project description relates that all alternatives will look at preserving the rural character of the corridor while providing safety and operational enhancements. This project was originally distributed for agency screening and review through the Florida State Clearinghouse at the Florida Department of Environmental Protection in February 2004. Ultimately, the Federal Highway Administration approved the Class of Action for this project as an Environmental Impact Statement, and the original project is now being submitted for screening through the EDTM Process for project compliance with established administrative procedures.

A GIS analysis of fish and wildlife and habitat resources was conducted, and the results indicate that land uses within 500 feet of the project area consist predominately of urban and agricultural (row crops and pasture). Approximately 27 percent of the lands within this zone consist of high and low impact urban land, while about 71 percent consist of rural agricultural uses. Small but productive and important blocks of dry prairie, freshwater marsh and wet prairie, upland hardwood hammock, open water, shrub swamp and pinelands are also found within the project area.

The results of previous habitat modeling by FWC in areas near the project site and within the region document the presence of high quality and diverse habitat systems. High values for lands mapped as FWCs Biodiversity Hot Spots and Priority Wetlands Habitat for Wetland Dependent Listed Species were established by our agency in this area. Public lands immediately adjacent to the project area include the Owaissa Bauer Pinelands Addition #1, while the Ingram Pineland and Camp Owaissa Bauer occur within a mile of the Right-of-way (ROW). Managed lands consisting of the Mary Krome Bird Refuge occurs immediately adjacent to the ROW, as does the Dade County Archipelago Florida Forever Board of Trustees land acquisition project. A Strategic Habitat Conservation Area (SHCA) for Pine Rocklands has been established within an area extending from the ROW out to at least one mile. Our review also indicates that the following plants listed by the Florida Department of Agriculture and Consumer Services potentially occur within the project area according to resource location data from the Florida Natural Areas Inventory: Blodgetts wild-mercury (E), Carters large-flowered flax (E), locustberry (T), and pineland jacquemontia (T).

Based on range and habitat preference, the following listed wildlife species may potentially occur in and adjacent to the project area: gopher tortoise (SSC), eastern indigo snake (T), rim rock crowned snake (T), Florida mouse (SSC), little blue heron (SSC), tricolored heron (SSC), reddish egret (SSC), white ibis (SSC), roseate spoonbill (SSC), wood stork (E), snail kite (E), bald eagle (T), southeastern kestrel (T), peregrine falcon (E), limpkin (SSC), Florida sandhill cane (T), and the Florida burrowing owl (SSC).

Comments on Effects to Resources:
Depending on which project Alternative is chosen and implemented, direct impacts on listed species and habitat resources could be moderate, while secondary and cumulative impacts would also be moderate.
Additional Comments (optional):
The following recommendations are provided to reduce impacts to fish and wildlife and habitat resources:

(1) In lieu of a Build Alternative, we support a Transportation System Management Alternative to improve safety, and the efficiency of surrounding roads, which would protect and enhances existing habitat, and protects the rural nature within this agricultural area.

(2) Wildlife surveys for listed species should be performed to evaluate the potential occurrence of all protected species.

(3) An in-depth preliminary assessment of incidental and cumulative impacts should be made on this project, and funds should be identified to address mitigation of secondary impacts and be included in the project budget.

(4) A plan should also be formulated and implemented to avoid, minimize or mitigate impacts to habitat and listed species based on the results of field surveys. An Incidental Take Permit may also be needed from our agency for the gopher tortoise and its commensal species.

(5) A complete accounting should be made of all upland and wetland plant communities within the project area, and compensatory mitigation should be required. Mitigation should address upland and wetland habitat loss, including the achievement of type for type and functional replacement. Due diligence should also be accomplished in the search for innovative mitigation opportunities, such as acquisition of sensitive habitats including pine rocklands; the expansion of the size, diversity, and productivity of existing public lands; or enhancement and restoration of selected native habitat blocks to improve habitat connectivity and functionality.

(6) Stormwater runoff into area wetlands during construction, or roadside runoff during operation of the road, should be contained to prevent water quality degradation and increased sedimentation.

We appreciate the opportunity to provide input on highway planning and design and the conservation of fish and wildlife resources. Please contact Steve Lau at (772) 778-5094 in our Vero Beach Office for further coordination on this project.

FDOT District 6 Feedback to FL Fish and Wildlife Conservation Commission's Review (09/25/2007): These issues are being addressed in the PD&E study for this project and the results of the analysis will be presented in the Endangered Species Biological Assessment (ESBA) report, Wetland Evaluation report and Draft Environmental Impact Statement (DEIS) for the project.

The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected ecologically significant pine rockland community known as Owaissa Bauer Addition No. 1 is located adjacent to the roadway corridor

just south of SW 264th Street on the east side of Krome Avenue, and a privately owned parcel, known as Mary Krome Park, consists of artificially planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor at SW 296th Street on the west side of Krome Avenue. In addition, three areas recognized as surface waters were identified within the study corridor. These areas include an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street. Water quality impacts to these surface water areas resulting from erosion and sedimentation during construction activities will be controlled in accordance with the latest edition of FDOT's Standard Specifications for Road and Bridge Construction and through the use of Best Management Practices, including temporary erosion control measures to ensure compliance with Federal/State water quality standards.

Coordination is being conducted with the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), Florida Department of Agriculture and Consumer Services (FDACS), Miami-Dade County DERM EEL Program, and the Miami-Dade County Park and Recreation Department Natural Areas Management Program (NAM) to discuss avoidance/minimization efforts and potential mitigation scenarios for each proposed build alternative.

Degree of Effect: 2 *Minimal* assigned 05/25/2006 by John Wrublik, US Fish and Wildlife Service

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
Federally Listed Species and Fish and Wildlife Resources

Comments on Effects to Resources:
Service Comments, Federally Listed Species: The Service has reviewed our Geographic Information Systems (GIS) database for recorded locations of federally listed threatened and endangered species on or adjacent to the project study area. The GIS database is a compilation of data received from several sources.

Wood Stork

The project corridor is located in the Core Foraging Areas (within 18.6 miles) of two active nesting colonies of the endangered wood stork (Mycteria americana). The Service believes that the loss of wetlands within a CFA due to an action could result in the loss of foraging habitat for the wood stork. To minimize adverse effects to the wood stork, we recommend that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. Moreover, wetlands provided as mitigation should adequately replace the wetland functions lost as a result of the action. The Service does not consider the preservation of wetlands, by itself, as adequate compensation for impacts to wood stork foraging habitat, because the habitat lost is not replaced. Accordingly, any wetland mitigation plan proposed should include a restoration, enhancement, or creation component. In some cases, the Service accepts wetlands compensation located outside the CFA of the affected wood stork nesting colony. Specifically, wetland credits purchased from a Service Approved mitigation bank located outside of the CFA would be acceptable to the Service, provided that the impacted wetlands occur within the permitted service area of the bank.

The Service believes that the following federally listed species have the potential to occur in or near the project site: wood stork, and eastern indigo snake (Drymarchon corais couperi), as well as the federally protected plants listed at the link for Miami-Dade County at our web site (http://verobeach.fws.gov/Species_lists/countyfr.html). Accordingly, the Service recommends that the Florida Department of Transportation (FDOT) prepare a Biological Assessment for the project (as required by 50 CFR 402.12) during the FDOTs Project Development and Environment process.

Service Comments, Fish and Wildlife Resources: Wetlands provide important habitat for fish and wildlife. If wetlands are found within the project area, we recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of wetland resources.

Additional Comments (optional):
None found.

ETAT Reviews and Coordinator Summary: Cultural

Historic and Archaeological Sites

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 08/08/2007 by FDOT District 6

Comments:
A Cultural Resources Assessment Survey (CRAS) has been conducted for this project and has been submitted to the State Historic Preservation Officer (SHPO) for review. The CRAS and pertinent correspondence will be uploaded into the EST once completed.

Degree of Effect: 3 *Moderate* assigned 07/06/2006 by Sherry Anderson, FL Department of State

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
Historic Standing Structures

Buffer distance: 100 ft (246.25 acres)
Site ID; Structure Name
DA2764; 27750 KROME AVENUE; not evaluated by SHPO
DA2765; 27190 N. KROME AVENUE; not evaluated by SHPO
DA2817; 22450 SW 177TH AVENUE; not evaluated by SHPO
DA2818; 22800 SW 177TH AVENUE; not evaluated by SHPO
DA6762; 17700 SW 296TH STREET; ineligible by SHPO

Buffer distance: 1320 ft (3366.91 acres) and 5280 ft (15139.7 acres)
Site ID; Structure Name
(list below only includes those deemed potentially eligible or NR listed)
DA2679; LINDEMAN-JOHNSON HOUSE (AKA GIRAR TITLE COMPANY); NR LISTED
DA2748; MCMINN-HORNE HOUSE; NR LISTED

Comments on Effects to Resources:
Although this roadway has not been subjected to a systematic cultural resource assessment survey, several surveys undertaken by Dade County and the City of Homestead have recorded numerous historic buildings including two NR-listed resources, within the one -mile buffer. Most of these have not been evaluated by SHPO. Five buildings are located within the 100-foot buffer. Only one has been previously evaluated (DA6762 ineligible); all others have not been evaluated by SHPO. No archaeological sites have been previously recorded within the one-mile buffer zone.
Additional Comments (optional):
It is difficult to ascertain potential effects of this project due to the lack of a systematic cultural resource assessment survey. Given that numerous buildings have been recorded within one-mile of the project area, it is the opinion of this office that there is a reasonable probability of project activities impacting historic properties potentially eligible for listing in the National Register of Historic Places, or otherwise of historical, architectural or archaeological value. Our office recommends a systematic cultural resource assessment survey be conducted and that all relevant direct and indirect impacts be taken into consideration in the development of the area of potential effect.

Recreation Areas

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 09/24/2007 by FDOT District 6

Comments:
While there are no Miami-Dade County public parks located directly on Krome Avenue, there are several Miami-Dade County neighborhood and local parks located in the vicinity of the project corridor in addition to the resources mentioned by the ETAT, including Oak Creek Park, Kings Grant Park, and Redland Fruit and Spice Park. The Everglades Archery Range and the Redlands Golf and Country Club are also located in the vicinity of the project corridor.

The Mowry and Princeton Trails, part of the South Dade Greenway Trail system, bisect Krome Avenue along the SFWMD's C-102/Princeton canal, which crosses Krome Avenue at approximately SW 196th Street, and the SFWMD's C-103/Mowry canal, which crosses Krome Avenue just north of SW 280th Street, respectively.

The Dade County Archipelago Florida Forever Project helps to conserve the subtropical pinelands and hardwood hammocks in Miami-Dade County. These sites, including the Miami Rockridge Pinelands (including Ingram Pineland) and the Owaissa Bauer Pinelands (including the Owaissa Bauer Addition No. 1) are administered through the Miami-Dade County DERM Environmentally Endangered Lands Program (EEL).

The Draft Environmental Impact Statement (DEIS) for the project will evaluate potential impacts to these areas. Documentation of this evaluation will be available in electronic format online via the FDOT Environmental Screening Tool (EST).

Degree of Effect: 3 *Moderate* assigned 07/06/2006 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
The following public conservation lands are located in the vicinity of this project: the Mowery and Princeton Trails, Dade County Archipelago Florida Forever Project, Ingram Pineland, Camp Owaissa Bauer/Pineland, and the Mary Krome Bird Refuge.
Comments on Effects to Resources:
These lands contain significant natural communities and numerous element occurrences of listed species, as indicated by the Florida Natural Areas Inventory. The Department is interested in preserving the area's natural communities, wildlife corridor functions, natural flood control, stormwater runoff filtering capabilities, aquifer recharge potential, contributions to regional spring complexes, and recreational trail opportunities. Therefore, future environmental documentation should include an evaluation of the primary, secondary, and cumulative impacts of the proposed roadway widening construction on the above public lands and any proposed acquisition sites.
Additional Comments (optional):
None found.

Section 4(f) Potential

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 08/17/2007 by FDOT District 6

Comments:
The project will be evaluated for potential involvement with Section 4(f). All coordination regarding Section 4(f) involvement would occur with the FHWA as needed.
None found

ETAT Reviews and Coordinator Summary: Community Aesthetics

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 08/17/2007 by FDOT District 6

Comments:
The rural character of the area will be considered through a context sensitive design approach.

In addition, potential traffic noise impacts in the area surrounding the project will be assessed during the PD&E Study.

Degree of Effect: 3 *Moderate* assigned 10/02/2006 by Tammy Vrana, FDOT District 6

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
100-Foot Buffer:
Rural Character
Agricultural Lands
Residential Lands
Grove Motel

500-Foot Buffer
Krome Medical Center
Comments on Effects to Resources:
The visual aesthetic character of the project area is rural. The area is part of Miami-Dade Countys historic agricultural community known as Redlands. Views from the road are predominantly of farmlands (row crops and groves), natural lands, and small roadside businesses, many of which deal in agricultural products.

Relative to the potential for vibration effects, no eye care centers were identified within the one-mile project buffer. The Krome Medical Center is located in the 500-foot project buffer and the James Archer Smith Hospital is located in the one-mile project buffer. The distance of these facilities from the project would likely preclude vibration or noise effects as a result of the project.

Residential land uses may be sensitive to the full range of aesthetic effects (i.e., visual, noise, and vibration). As such, residential land uses within the 100- and 500-foot project buffers are shown in the tables below. Residential lands within the 100-foot project buffer represent approximately 43 acres, or 17% of the total area. Most of this residential development is low density.

Existing Residential Land Uses within the 100-Foot Project Buffer (246.25 acres)
Description Acres Percent
High Density: Mobile Home Units 1.85 0.75
Low Density: Single Family Units 21.10 8.57
Medium Density: Single Family Units 6.30 2.56
Rural Residential 13.55 5.5

Existing Residential Land Uses within the 500-Foot Project Buffer (1,245.76 Acres)
Description Acres Percent
High Density: Mobile Home Units 9.26 0.74
Low Density: Single Family Units 89.84 7.21
Medium Density: Single Family Units 20.89 1.68
Rural Residential 44.31 3.56

Some members of the Redlands community have expressed concerns that increased capacity as a result of the project could stimulate additional development pressure that could change the rural character of the area.

Additional Comments (optional):
None found.

Economic

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 08/17/2007 by FDOT District 6

Comments:
The study area is dominated by agricultural and low-density residential land uses with a slow transition to greater frequency of low-density residential in the southern half of the study corridor. Small scale commercial uses are found at major signalized intersections throughout the corridor. Most of the commercial uses include groceries, gasoline retails, and community-oriented small business. The proposed project is not anticipated to impact the economics of the area.

Degree of Effect: 1 *Enhanced* assigned 10/02/2006 by Tammy Vrana, FDOT District 6

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
Miami-Dade County Enterprise Zone (South Dade)
Redlands/Leisure City Area Brownfield
Agricultural Industry
City of Homestead
Comments on Effects to Resources:
Southern Miami-Dade County is home to a $1 billion agricultural industry. Most of the agricultural lands that support this industry lie east of the Everglades and west of Homestead in the area known as the Redlands. Within the project corridor, the agricultural industry dominates the local economic base. For example, row crops, ornamentals, field crops, citrus groves, fruit orchards, and fallow cropland account for 80% of lands within the 500-foot buffer area.

There is limited commercial development along the corridor. These uses are predominantly located within the project area at Krome Avenue and SW 272nd St, SW 264th St, SW 248th St, SW 236th St, SW 200th St, SW 184th streets.

The Miami-Dade County Enterprise Zone is located within the project buffer. This zone provides tax incentives and advantages for businesses locating within the designated zone as a means of growing and revitalizing the local economy.

The project will provide greater capacity and is likely to provide greater accessibility to the area. Krome Avenue, a SIS facility, has an important role in regional connectivity through linkages to US 1, US 41, and US 27. As such, the project is likely to enhance freight movement. Locally, the project will provide greater connectivity to business areas within the City of Homestead.

Additional Comments (optional):
None.

Land Use

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
The study corridor traverses rural farming and low-density residential communities. FDOT is currently coordinating the evaluation of farmland conversion impacts associated with the project with the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS). A Corridor Assessment is currently being prepared by the FDOT to complete the Farmland Conversion Impact Rating for Corridor Type Projects form for resubmittal to the NRCS for final concurrence/approval.

Coordination is being conducted with the Miami-Dade EEL Program regarding potential impacts to the Owaissa Bauer Addition No. 1 parcel (protected pineland).

Also see Summary Degree of Effect for "Secondary and Cumulative Effects."

Land Use will be addressed in the Draft Environmental Impact Statement (DEIS).

Degree of Effect: 3 *Moderate* assigned 10/02/2006 by Tammy Vrana, FDOT District 6

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
Miami-Dade County Comprehensive Development Plan
Comments on Effects to Resources:
Existing Land Use. Lands within the project corridor are predominantly agricultural in use. Agricultural uses include agricultural production (row crops and groves), as well as wholesale and retail trade of agricultural products. Residential and retail uses within the corridor are interspersed among the agricultural areas. Small scale commercial nodes (convenience retail and fuel sales) exist on Krome Avenue at SW 272nd, SW 264th, SW 248th, SW 236th, SW 200th, and SW 184th streets.

The table below shows existing land uses within the 500- and 1,320-foot project buffers. Over 70 percent of the lands in both buffers are used for agricultural purposes. Agricultural uses along the corridor include row crops, ornamentals, field crops, citrus groves, fruit orchards, and fallow cropland (listed in descending order according to acreage).

Of the residential uses, the majority is comprised of low density single family units (62%) in both buffers. Other residential types include large lot (rural) residential, medium density single family units, high density mobile home units, and high density single family units.

Existing Land Use: 500-Foot Project Buffer (1,245.76 Acres)
Description Acres Percent
Agricultural 913.41 73.32%
Acreage not zoned for agriculture 44.67 3.59%
Residential 43.84 3.52%
Retail/Office 42.67 3.42%
Vacant Residential 16.04 1.29%
Institutional 11.40 0.91%
Vacant Non-Residential 9.55 0.77%
Public/Semi-Public 8.30 0.67%
Recreation 6.53 0.52%

Agricultural 2,539.60 Acres (75.43%)
Acreage not zoned for agriculture 160.78 Acres (4.78%)
Residential 191.61 Acres (5.84%)
Retail/Office 88.74 Acres (2.64%)
Vacant Residential 42.74 Acres (1.27%)
Institutional 25.17 Acres (0.75%)
Vacant Non-Residential 15.02 Acres (0.45%)
Public/Semi-Public 45.94 Acres (1.36%)
Recreation 11.43 Acres (0.34%)

Future Land Use. The tables below show the generalized future land use for the 500- and 1,320-foot project buffers. The future land use designations for both buffers indicate that agricultural uses and rural intensities are anticipated to continue though the comprehensive planning timeframe. The areas along Krome Avenue are comprised of large tracts of undeveloped land, which currently act as a buffer between encroaching subdivisions from the east and the Florida Everglades.

Future Land Use: 500-Foot Project Buffer (1,254.76 Acres)
Description Acres Percent
Agriculture 1,069.51 85.85%
Estate 121.26 9.73%
Preserve 55.00 4.41%

Future Land Use: 1,320-Foot Project Buffer (3,366.91 Acres)
Description Acres Percent
Agriculture 2,903.08 86.22%
Estate 352.67 10.47%
Preserve 111.16 3.3%

Comprehensive Plan Consistency. The project is included in the adopted Miami-Dade County Comprehensive Development Plan and, therefore, is consistent with the plan.

Additional Comments (optional):
None.

Degree of Effect: 3 *Moderate* assigned 07/18/2006 by Gregory E. Williams, Federal Highway Administration

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
The project is located in a relatively undeveloped area that is primarily agricultural, and includes protected plant communities (pine rockland) that may be globally imperiled.
Comments on Effects to Resources:
The environmental document should assess secondary impacts to these areas, as well as cumulative impacts to agricultural lands, protected plant communities, and other natural resources.

Additional Comments (optional):
None found.

Degree of Effect: 0 *None* assigned 06/28/2006 by Gary Donaldson, FL Department of Community Affairs

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
None found.
Comments on Effects to Resources:

None found.
Additional Comments (optional):
None found.

Mobility

Project Effects

Coordinator Summary Degree of Effect: 1 *Enhanced* assigned 08/17/2007 by FDOT District 6

Comments:
The project corridor provides regional connectivity from as far south as the Florida Keys to Broward County and points north. Further, it is one of the hurricane evacuation routes serving the Florida Keys and South Miami-Dade County. It is anticipated that the project, which is consistent with both regional and local transportation plans, will result in increased mobility along the corridor.

Degree of Effect: 1 *Enhanced* assigned 10/02/2006 by Tammy Vrana, FDOT District 6

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
100-Foot Buffer:
Mowry Trail
Princeton Trail
Railroad

500-Foot Buffer:
Bridge (#870161)
Grass Airport

5,280-Foot Buffer:
Bus Stops (130, 141, 142, 143, 144, 145, 147, 148, 151, 152, 153, 154, 155, 156, 157, 160, 161, 162, 164, 165, 166, 167, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 231, 234, 235, 236)
Avocado Elementary School
South Dade School
St Johns School
Mac's Field (Air Field)
Lindbergh's Landing (Air Field)
B & L Farms (Air Field)
Richards Field (Air Field)
Comments on Effects to Resources:
Krome Avenue is a significant north-south arterial in western Miami-Dade County and is part of Floridas Strategic Intermodal System (SIS) and Florida Intrastate Highway System (FIHS). It runs from US 1 just south of Florida City north across US 41 to US 27 near Opalocka West Airport, just south of the Broward County line. Its primary use is as a bypass around the west side of Miami, linking the routes running southwest, west and northwest from Miami-Dade. The project addresses Krome Avenue between SW 296th Street and SW 136th Street. This segment is north of the City of Homestead and south of US 41.

Krome Avenue plays an important role in regional connectivity. By adding capacity, this project will improve north-south access between Homestead and US 41, while reducing congestion on US 1. Also, the project is intersected by the a number of collector-level side streets including SW 272nd, SW 264th, SW 248th, SW 236th, SW 200th, SW 184th streets.

From just south of the project, Krome Avenue traverses the Homestead business district, suburban neighborhoods and farmlands. Tractors and farm equipment are frequent users of the facility.

The crash rate on this facility is substantially higher than the statewide average for similar facilities. Therefore, a primary project objective is to address existing safety issues. The safety enhancements of the roadway would enhance emergency response in the project area.

Presently, no sidewalks, bike lanes, or transit service exist along this road. Bicycle use of the roadways approximately three-foot shoulder was observed. As an indicator of transportation disadvantaged population in the project area, the 2000 Census reported approximately 1,089 households in the one-mile project buffer without an automobile.

Krome Avenue is one of three continuous north-south corridors available to south Miami-Dade County and the Florida Keys residents for hurricane evacuation. The facility serves as an alternate hurricane evacuation route to US 1 and the Floridas Turnpike for those living in southern Miami-Dade County. Additionally, improvements to corridor mobility afforded by the project would likely enhance conditions for freight movement.
Additional Comments (optional):
None.

Relocation

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 08/17/2007 by FDOT District 6

Comments:
The project will require acquisition of additional right-of-way along the project corridor; however, the proposed project, as presently conceived, will not displace any residences, farming operations, or businesses within the community. Should this change over the course of the project, the FDOT will carry out a right-of-way and relocation program in accordance with requirements.

Degree of Effect: 3 *Moderate* assigned 10/02/2006 by Tammy Vrana, FDOT District 6

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
Developed Parcels (residential, retail/office, institutional, public/semi-public and recreational uses)
Comments on Effects to Resources:
The project represents the analysis of various alternatives including a no-build alternative, a Transportation System Management alternative, and several build alternatives consisting of two, three and four-lane typical sections.

The existing right-of-way for Krome Avenue ranges from roughly 35-feet to 200-feet. Should widening of the two lane road be required, developed parcels adjacent to the right-of-way (within the 100-foot project buffer) have the greatest potential for relocation effects. The extent of potential effects on development within the 100-foot project buffer is evaluated in the table below.

Developed Land Uses: 100-Foot Buffer (246.25 Acres)
Description Acres Percent
Institutional 1.95 0.79
Public/Semi-Public 0.40 0.16
Recreation 0.36 0.14
Residential 6.94 2.82
Retail/Office 11.52 4.68

The number of developed parcels within the 100-foot buffer area was estimated as another means of identifying the potential for relocation effects. Within the 100-foot buffer, there are residential, retail/office, institutional, public/semi-public and recreation-related parcels.

Additional Comments (optional):
None.

Social

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 08/17/2007 by FDOT District 6

Comments:
The study area is predominantly rural in character and comprised of agricultural and low-density residential land uses. Small-scale commercial uses are found at major signalized intersections throughout the corridor.

A public involvement plan is being implemented as part of the project. The FDOT has and will continue to coordinate with the affected community regarding the proposed improvements. The project is not anticipated to impact community cohesion or to disproportionately impact minority communities.

Degree of Effect: 2 *Minimal* assigned 10/02/2006 by Tammy Vrana, FDOT District 6

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
100-Foot Buffer:
Historic Redlands Community
Redlands Summer Camp
Publicly Owned Lands: Owaissa Bauer Pineland Addition #1
Mowry Trail
Princeton Trail
OGT: Multi-Use Trails Priority (High)
OGT: Multi-Use Trails Priority (Medium)
Florida Site File Historic Standing Structures (2)
Mary Krome Bird Refuge
Florida Audubon Society Park
Dade County Archipelago Florida Forever BOT Project
Redland Golf and Country Club
Redland Christian Academy
Church of Christ Church

First Baptist Church of Homestead
Homestead Church of Christ
Manfred Memorial Foundation

200-Foot Buffer:
Redlands Church of the Nazarene

500-Foot Buffer:
Womans Club of Homestead
Krome Medical Center
Goodwill Industries Job Training/Vocational. Rehabilitation
Kidz Ark Day Care
Miami Gliderport
Miami Glider Club
Redland Christian Academy

1,320-Foot Buffer:
City of Homestead
Florida Site File Historic Standing Structures (15)
St Andrews Lutheran Church
Open Bible Gospel Tabernacle
Westbird Center
University of Florida TREC

2,640-Foot Buffer:
Florida Site File Historic Standing Structures (31)
Publicly Owned Lands: Camp Owaissa Bauer
Bauer Drive Hammock
Lindbergh Landing Strip
Miami Gliderport Landing Strip
Musselwhite Park (City of Homestead)
Saint Andrew Church
Silver Palm United Methodist Church
Miami Everglades Campground
Chickeara Recreation Center
Fruit and Spice Park (Miami-Dade County)
Royal Palm Lodge #100

5,280-Foot Buffer:
Florida Site File Historic Standing Structures (97)
National Register of Historic Places (2)
Avocado Elementary School
South Dade School
First United Methodist Day School
Homestead Junior Academy
Little Sunbeams Child Care Center
Saint Johns School
Miami Rockridge Pinelands Outstanding Florida Water
Ingram Pineland Publicly Owned Lands (FNAI Subset)
James Archer Smith Hospital

Comments on Effects to Resources:

The project area is located north of the City of Homestead in unincorporated Miami-Dade County and includes the Redlands community.

The demographics for the one-mile project buffer area are listed below.

White: 80.8%
Black: 10.0%
Other: 9.2%
Hispanic: 52.3%
Under age 18: 30.8%
Age 65+: 6.8%
Households w/o Car: 7.4%
Median Family Income: $53,566
With Disability: 19.8%

As listed in the foregoing, there are numerous community focal points within the project study area. Within the 100-foot project buffer, there are five Florida Site File Historic Standing Structures, a bird refuge, publicly-owned natural resource lands, the Redlands Golf and Country Club, places of worship, other religious facilities, recreational facilities, and a campground. Outside the 100-foot buffer within the 5,280-foot buffer are other places of worship, public and private educational facilities, a medical center, a vocational center, and public parks. One of the area parks is Fruit & Spice Park, the only tropical botanical garden of its kind in the US. Given the proximity of recreational resources within the 100-foot project buffer, there is the potential for project effects to

parkland and open space.

Given the distance between residential areas and community focal points as well as the absence of pedestrian facilities in this rural setting, pedestrian traffic is probably minimal along the corridor. Future residential development and population growth in the area may change this condition. The proposed roadway widening is not anticipated to affect community cohesion.

Additional Comments (optional):
None found.

ETAT Reviews and Coordinator Summary: Secondary and Cumulative

Secondary and Cumulative Effects

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
The Miami-Dade County Comprehensive Development Master Plan (CDMP) contains policies to discourage urban sprawl and urban development outside of the Urban Devlopment Boundary (UDB), particularly in areas of the county that are designated under Agriculture, Open Land, or Environmental Protection. The evaluation of potential effects resulting from the four laning of Krome Ave. is based on the CDMP growth management policies, which direct future development within the UDB and discourage urban sprawl. These policies recognize exceptions for the provision of public services and facilities in such areas when necessary to protect the public health, safety, and welfare plus serve the localized needs of the non-urban areas; the County and the FDCA have determined that the widening of Krome Avenue to four lanes is consistent with these policies.

All upland/wetland communities along the corridor are identified and discussed in the Endangered Species Biological Assessment (ESBA) report and the Wetland Evaluation report. In addition, a farmland evaluation is being conducted.

Avoidance, minimization, and mitigation for direct impacts and secondary impacts (through permitting) will be considered for project alternatives. Potential impacts during construction will be further minimized through adherence to all State and local regulations and to the latest edition of the FDOT Standard Specifications for Road and Bridge Construction.

Degree of Effect: 3 *Moderate* assigned 07/11/2006 by Scott Sanders, FL Fish and Wildlife Conservation Commission

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*
At-Risk Resource: Wildlife and Habitat
Comments on Effects: A GIS analysis of fish and wildlife and habitat resources was conducted, and the results indicate that land uses within 500 feet of the project area consist predominately of urban and agricultural (row crops and pasture). Approximately 27 percent of the lands within this zone consist of high and low impact urban land, while about 71 percent consist of rural agricultural uses. Small but productive and important blocks of dry prairie, freshwater marsh and wet prairie, upland hardwood hammock, open water, shrub swamp and pinelands are also found within the project area.

The results of previous habitat modeling by FWC in areas near the project site and within the region document the presence of high quality and diverse habitat systems. High values for lands mapped as FWCs Biodiversity Hot Spots and Priority Wetlands Habitat for Wetland Dependent Listed Species were established by our agency in this area. Public lands immediately adjacent to the project area include the Owaissa Bauer Pinelands Addition #1, while the Ingram Pineland and Camp Owaissa Bauer occur within a mile of the Right-of-way (ROW). Managed lands consisting of the Mary Krome Bird Refuge occurs immediately adjacent to the ROW, as does the Dade County Archipelago Florida Forever Board of Trustees land acquisition project. A Strategic Habitat Conservation Area (SHCA) for Pine Rocklands has been established within an area extending from the ROW out to at least 1 mile.
Recommended Avoidance, Minimization, and Mitigation Measures: Depending on which project Alternative is chosen and implemented, secondary and cumulative impacts on listed species and habitat resources could be moderate.
Recommended Actions to Improve At-Risk Resources: In lieu of a Build Alternative, we support a Transportation System Management Alternative to improve safety, and the efficiency of surrounding roads, which would protect and enhances existing habitat, and protects the rural nature within this agricultural area. A complete accounting should be made of all upland and wetland plant communities within the project area, and compensatory mitigation should be required. Mitigation should address upland and wetland habitat loss, including the achievement of type for type and functional replacement. Due diligence should also be accomplished in the search for innovative mitigation opportunities, such as acquisition of sensitive habitats including pine rocklands; the expansion of the size, diversity, and productivity of existing public lands; or enhancement and restoration of selected native habitat blocks to improve habitat connectivity and functionality.

Eliminated Alternatives

There are no eliminated alternatives for this project.

Project Scope

General Project Commitments
There are no general project commitments identified for this project in the EST.

Required Permits
There are no anticipated permits identified for this project in the EST.

Required Technical Studies

Technical Study Name	Type	Conditions	Review Org	Review Date
Noise Study Report	ENVIRONMENTAL		FDOT District 6	09/25/2007
Draft Environmental Impact Statement	ENVIRONMENTAL		FDOT District 6	09/25/2007
Public Hearing Transcript	ENVIRONMENTAL		FDOT District 6	09/25/2007
Farmlands Assessment	Other		FDOT District 6	09/25/2007
Air Quality Report	ENVIRONMENTAL		FDOT District 6	09/25/2007
Cultural Resource Assessment	ENVIRONMENTAL		FDOT District 6	09/25/2007
Endangered Species Biological Assessment	ENVIRONMENTAL		FDOT District 6	09/25/2007
Advance Notification/ICAR Package	ENVIRONMENTAL		FDOT District 6	09/25/2007
Contamination Screening Evaluation Report	ENVIRONMENTAL		FDOT District 6	09/25/2007
4 (f) Determination	Other		FDOT District 6	09/25/2007
Wetlands Evaluation Report	ENVIRONMENTAL		FDOT District 6	09/25/2007
Public Involvement Plan	ENVIRONMENTAL		FDOT District 6	09/25/2007
Final Environmental Impact Statement	ENVIRONMENTAL		FDOT District 6	09/25/2007
Cultural Resource Assessment Survey Report	Other		FDOT District 6	09/25/2007
WQIE	Other		FDOT District 6	09/25/2007
Class of Action Determination	ENVIRONMENTAL		FDOT District 6	09/25/2007

Class of Action

Class of Action Determination

Class of Action	Other Actions	Lead Agency	Cooperating Agencies	Participating Agencies
Environmental Impact Statement	Section 106 Consultation Endangered Species Assessment	Federal Highway Administration	No Cooperating Agencies have been identified.	No Participating Agencies have been identified.

Class of Action Signatures

Name	Agency	Review Status	Date	ETDM Role
Marjorie Bixby	FDOT District 6	ACCEPTED	09/25/2007	FDOT ETDM Coordinator
Gregory E. Williams	Federal Highway Administration	ACCEPTED	10/09/2007	Lead Agency ETAT Member

Dispute Resolution Activity Log
There are no dispute actions identified for this project in the EST.

Appendices

PED Comments

Advanced Notification Comments

There are no comments for this project.

GIS Analyses

Since there are so many GIS Analyses available for Project #7800 - SR 997/Krome Avenue/SW 177th Ave (South), they have not been included in this ETDM Summary Report. GIS Analyses, however, are always available for this project on the Public ETDM Website. Please click on the link below (or copy this link into your Web Browser) in order to view detailed GIS tabular information for this project:

http://etdmpub.fla-etat.org/est/index.jsp?tpID=7800&startPageName=GIS%20Analysis%20Results

Special Note: Please be sure that when the GIS Analysis Results page loads, the **Programming Screen Summary Report Re-published on 09/20/2010 by Megan McKinney Milestone** is selected. GIS Analyses snapshots have been taken for Project #7800 at various points throughout the project's life-cycle, so it is important that you view the correct snapshot.

Project Attachments

Note: Attachments are not included in this Summary Report, but can be accessed by clicking on the links below:

Date	Type	Size	Link / Description
	Ancillary Project Documentation	98 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=10317
	Ancillary Project Documentation	903 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=354
	Ancillary Project Documentation	622 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=353
	Ancillary Project Documentation	72 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=350

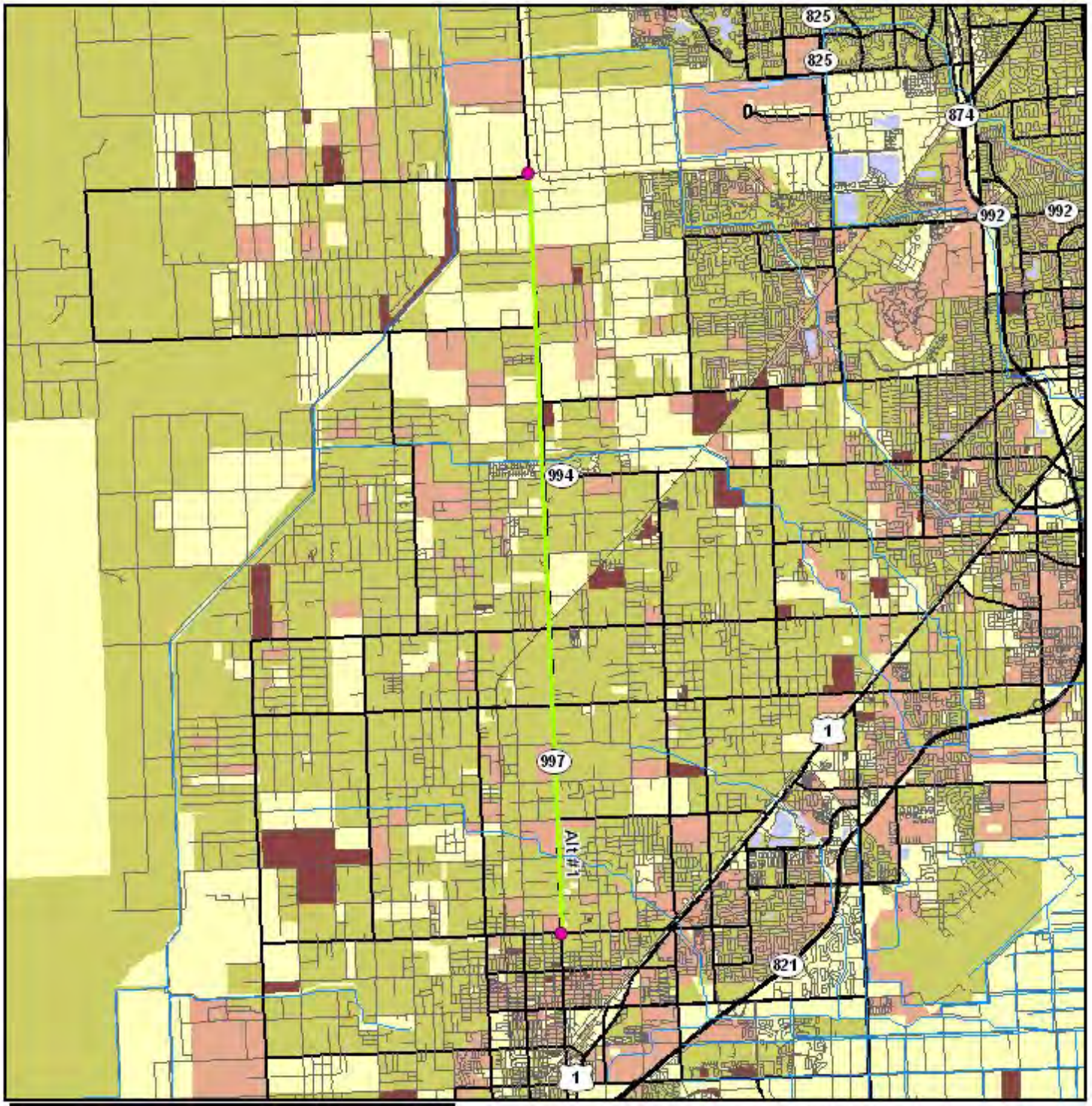
Degree of Effect Legend

Color Code	Meaning	ETAT	Public Involvement
N/A	Not Applicable / No Involvement	There is no presence of the issue in relationship to the project, or the issue is irrelevant in relationship to the proposed transportation action.	
0	None (after 12/5/2005)	The issue is present, but the project will have no impact on the issue; project has no adverse effect on ETAT resources; permit issuance or consultation involves routine interaction with the agency. The *None* degree of effect is new as of 12/5/2005.	No community opposition to the planned project. No adverse effect on the community.
1	Enhanced	Project has positive effect on the ETAT resource or can reverse a previous adverse effect leading to environmental improvement.	Affected community supports the proposed project. Project has positive effect.
2	Minimal	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
2	Minimal to None (assigned prior to 12/5/2005)	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
3	Moderate	Agency resources are affected by the proposed project, but avoidance and minimization options are available and can be addressed during development with a moderated amount of agency involvement and moderate cost impact.	Project has adverse effect on elements of the affected community. Public Involvement is needed to seek alternatives more acceptable to the community. Moderate community interaction will be required during project development.
4	Substantial	The project has substantial adverse effects but ETAT understands the project need and will be able to seek avoidance and minimization or mitigation options during project development. Substantial interaction will be required during project development and permitting.	Project has substantial adverse effects on the community and faces substantial community opposition. Intensive community interaction with focused Public Involvement will be required during project development to address community concerns.
5	Potential Dispute (Planning Screen)	Project may not conform to agency statutory requirements and may not be permitted. Project modification or evaluation of alternatives is required before advancing to the LRTP Programming Screen.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
5	Dispute Resolution (Programming Screen)	Project does not conform to agency statutory requirements and will not be permitted. Dispute resolution is required before the project proceeds to programming.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
	No ETAT Consensus	ETAT members from different agencies assigned a different degree of effect to this project, and the ETDM coordinator has not assigned a summary degree of effect.	
	No ETAT Reviews	No ETAT members have reviewed the corresponding issue for this project, and the ETDM coordinator has not assigned a summary degree of effect.	

Project-Level Hardcopy Maps

7800 SR 997/Krome Avenue/SW 177th Ave (South)

SW 296th Street to SW 136th Street



0 6 Miles

Population Age Distribution Map

ETDM Alternative Point
ETDM Alternative Terminus
ETDM Alternative Segment
ETDM Alternative Polygon

Major Road
Local Road or Trail
Railroad
River, Stream or Canal
Water Body

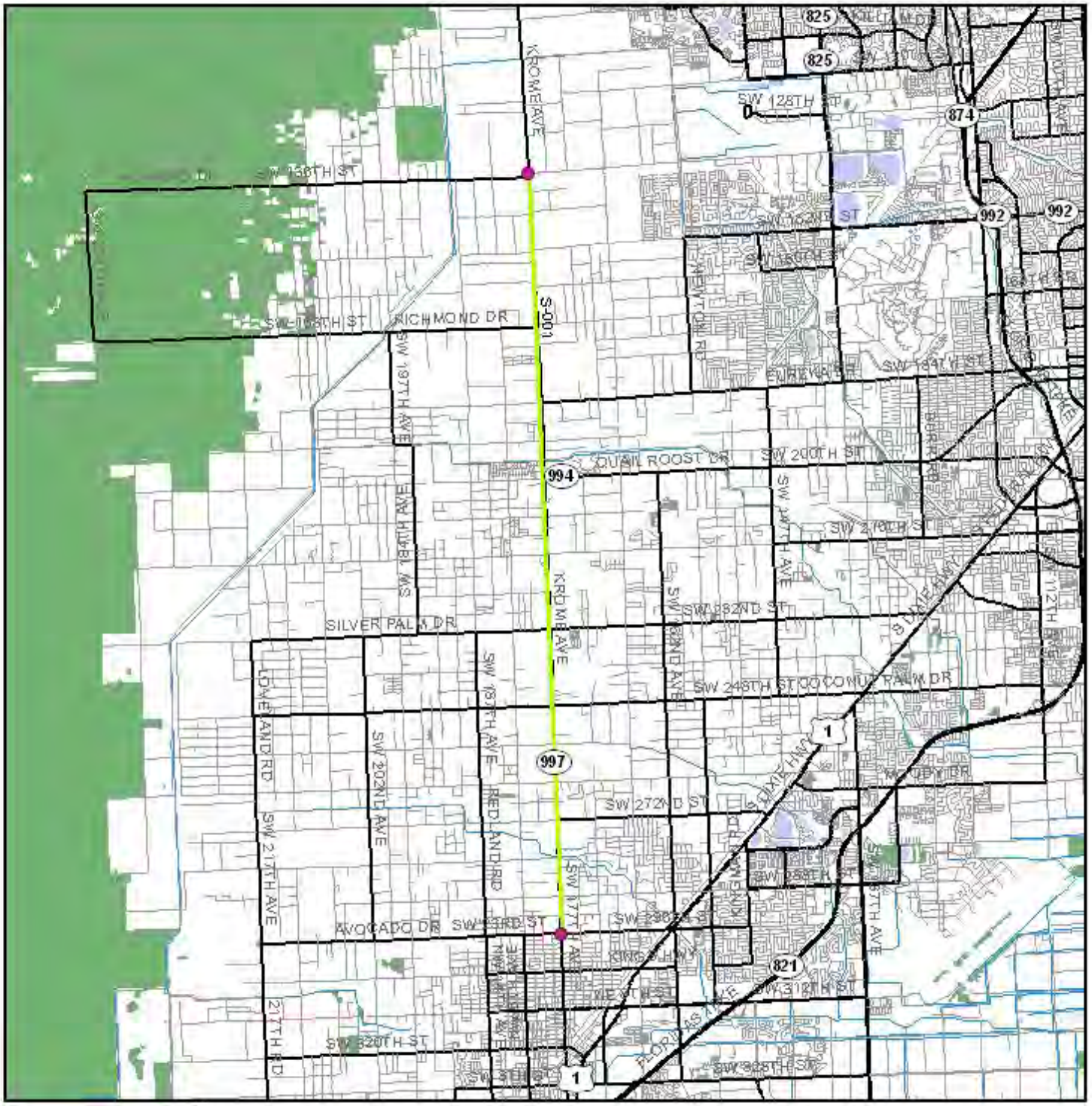
Median Age
0 - 18
18 - 30
30 - 65
> 65

Data Sources:
US Geological Survey
FL Department of Transportation
Geographic Data Technology, Inc.
US Census Bureau

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)

SW 296th Street to SW 136th Street



0 2.5 Miles

Coastal and Marine Resource Map

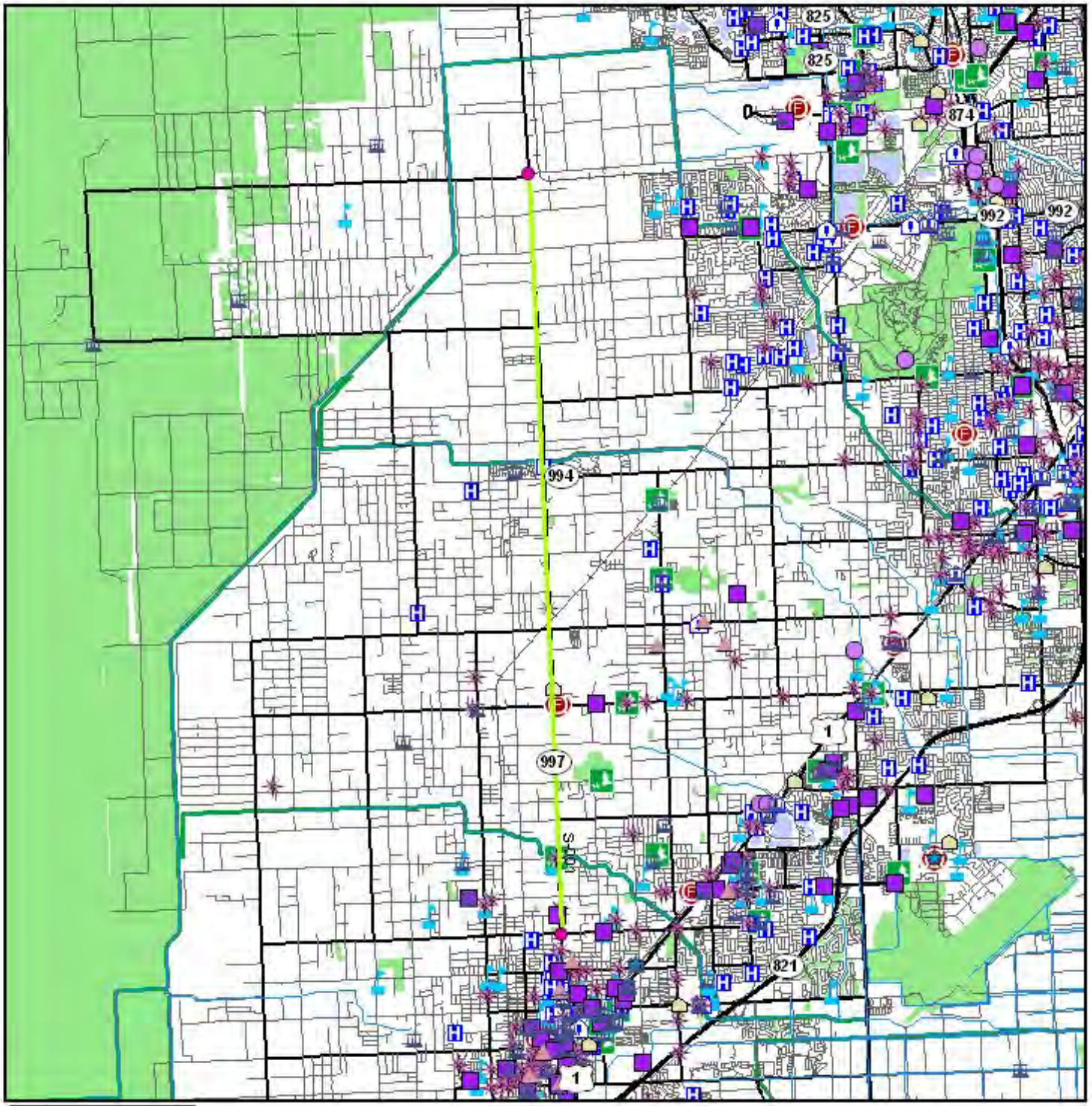
- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- River, Stream or Canal
- Water Body
- Aquatic Preserve
- FLUCCS Wetlands 1995
- Navigable Water Way
- Continuous Seagrass
- Discontinuous Seagrass
- Coastal Barrier Resource Area
- Swamp or Marsh
- Exposed Rocky Platform
- Sand Beach
- Gravel Beach/Riprap
- Exposed Tidal Flat
- Sheltered Tidal Flat
- Mixed Sand And Gravel Beach
- Sheltered Rock/Seawall/Vegetated
- Exposed Vertical Rocky Shore/Seawall

Data Sources: Geographic Data Technology, Inc.; US Geological Survey; Florida Marine Research Institute; Florida Department of Transportation; Florida Department of Environmental Protection; National Oceanic and Atmospheric Association; Florida Water Management Districts

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)

SW 296th Street to SW 136th Street



0 2.5 Miles

Community Facilities and Services Map

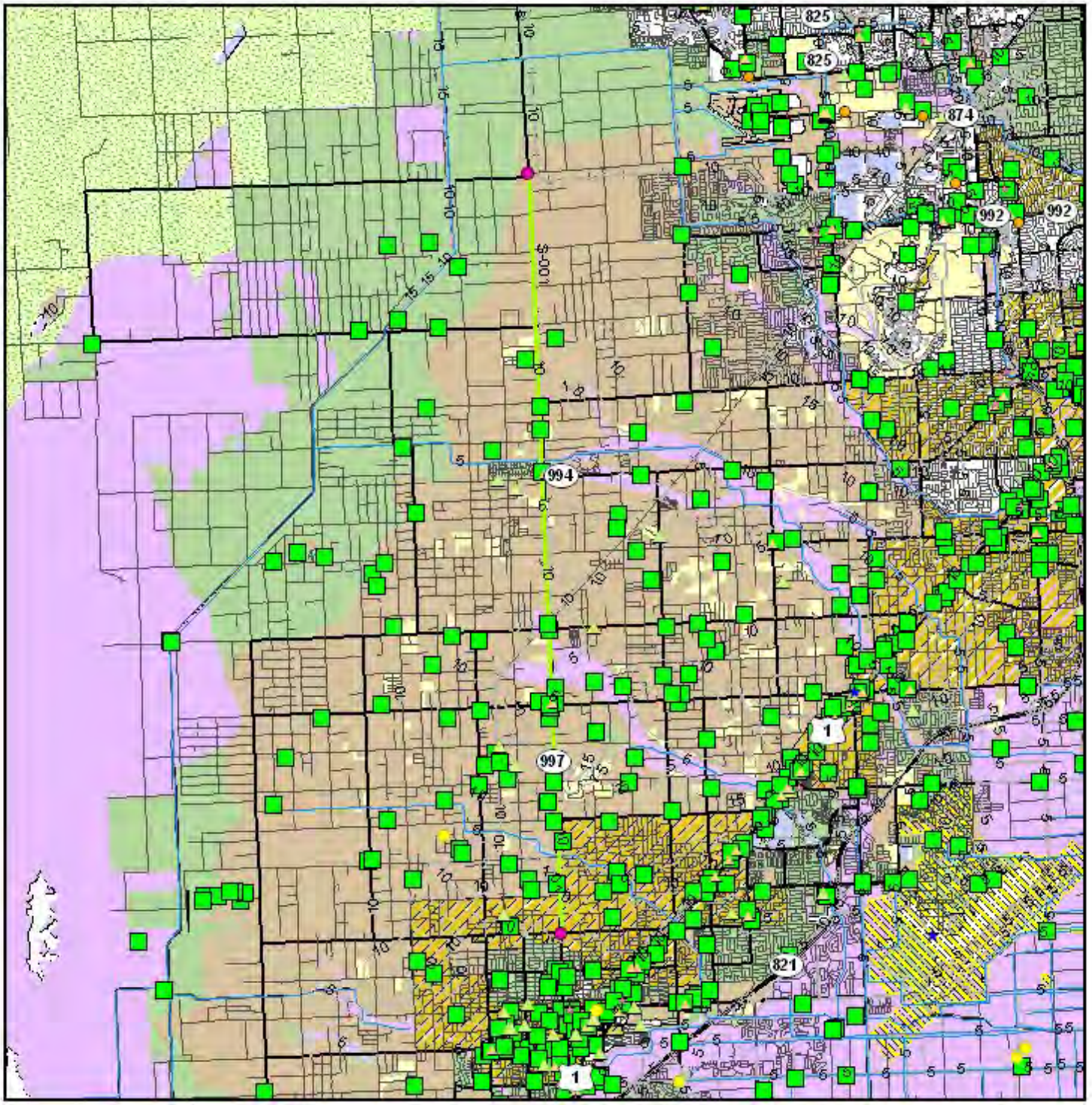
- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Government
- Civic Center
- Cemetery
- Social Service
- Community Center
- Law Enforcement
- Place of Worship
- Cultural Center
- Fire Station
- Health Care
- School
- Park
- River, Stream or Canal
- Recreational Trail
- Major Road
- Local Road or Trail
- Railroad
- Community Boundary
- Water Body
- Conservation or Recreation Area

Data Sources:
US Geological Survey; FL Department of Transportation; Geographic Data Technology, Inc.; FL Property Appraisers; FL Natural Areas Inventory

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)

SW 296th Street to SW 136th Street



0 2.5 Miles

Potential Contamination Assessment Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Toxic Release Inventory
- Dry Cleaning Facility
- Gasoline Service Station
- Solid Waste Facility
- NPL Remediation Site
- Hazardous Material Site
- Power Plant
- Superfund Site
- Nuclear Site
- FDEP Tanks
- Brownfield Area
- 5 FT Contour
- Water Body
- Swamp/Marsh

Soil Drainage

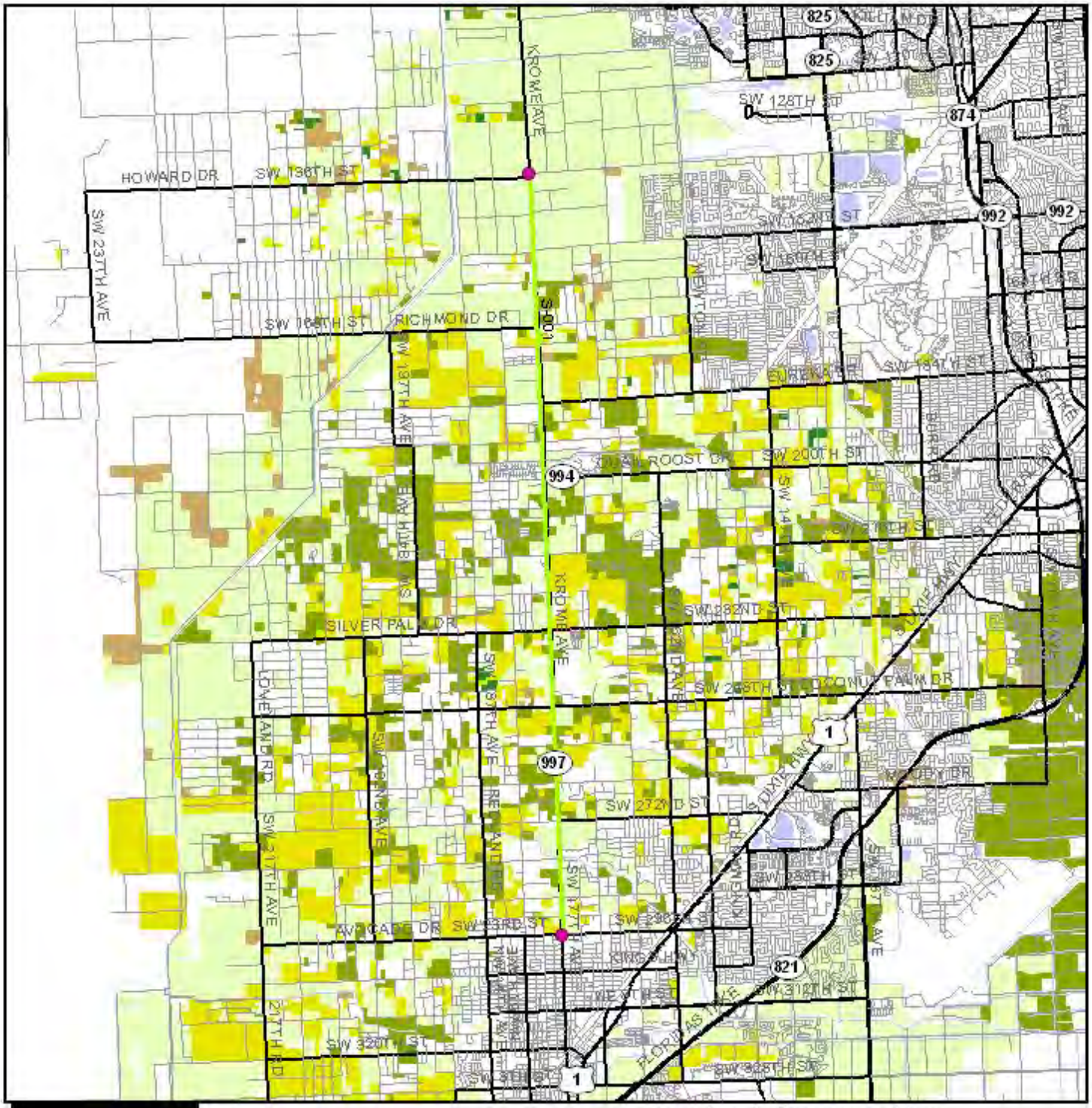
- Excellent to Well
- Well to Moderate Well
- Moderate Well to Poor
- Poor to Very Poor
- Unclassified

Data Sources:
Geographic Data Technology, Inc.; US Geological Survey; FL Department of Transportation; FL Department of Environmental Protection; FL Water Management Districts; US Environmental Protection Agency; Natural Resource Conservation Service

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)

SW 296th Street to SW 136th Street



0 2.5 Miles

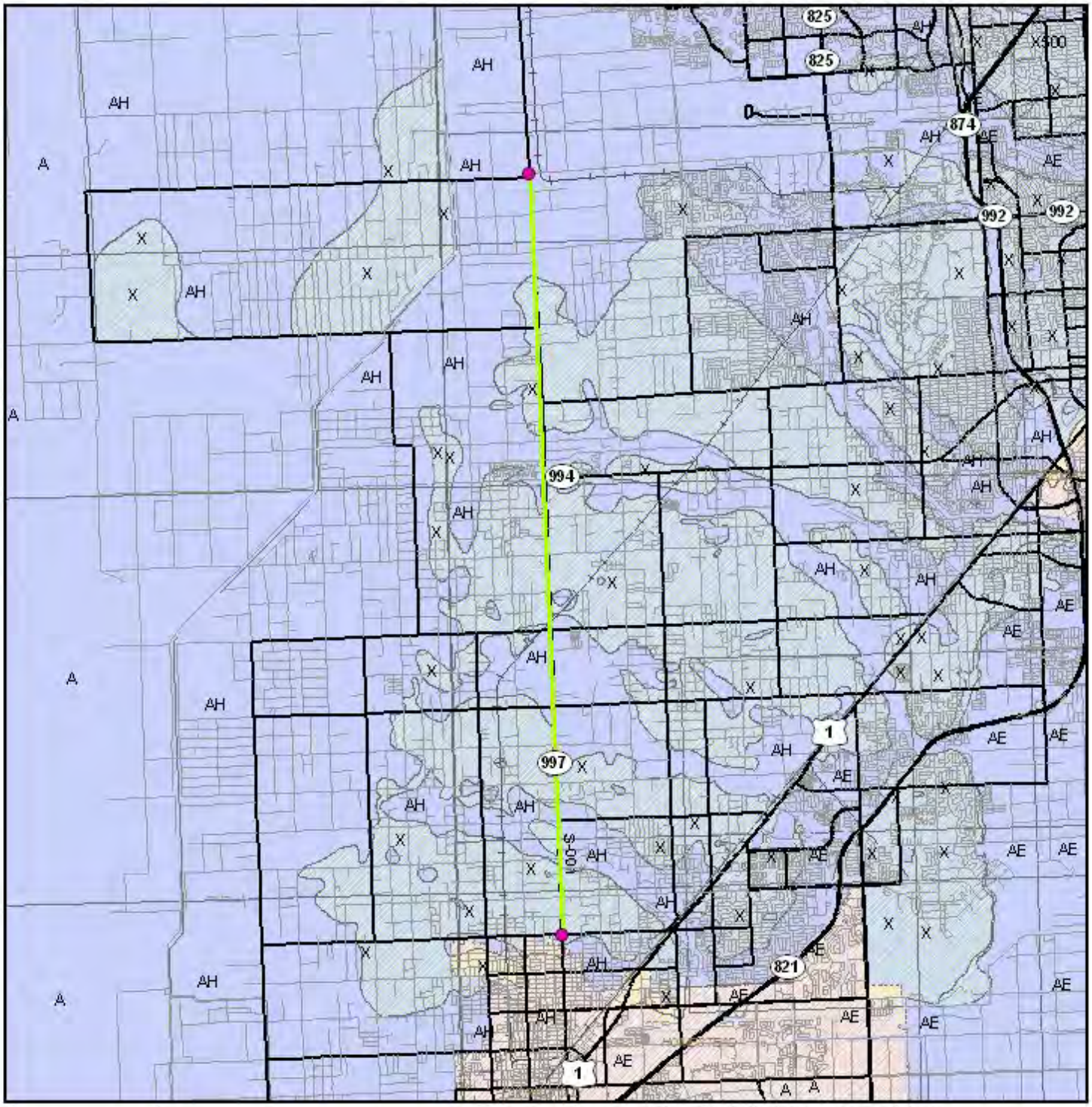
Farmlands Resource Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- River, Stream or Canal
- Major Road
- Local Road or Trail
- Water Body
- Prime Farmland Soils
- Cropland/Pastureland
- Feeding Operations
- Nurseries/Vineyards
- Specialty Farms
- Tree Crops
- Rural Open Lands

Data Sources: Geographic Data Technology, Inc., Florida Water Management Districts, US Geological Survey, Natural Resources Conservation Services

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 2 Miles

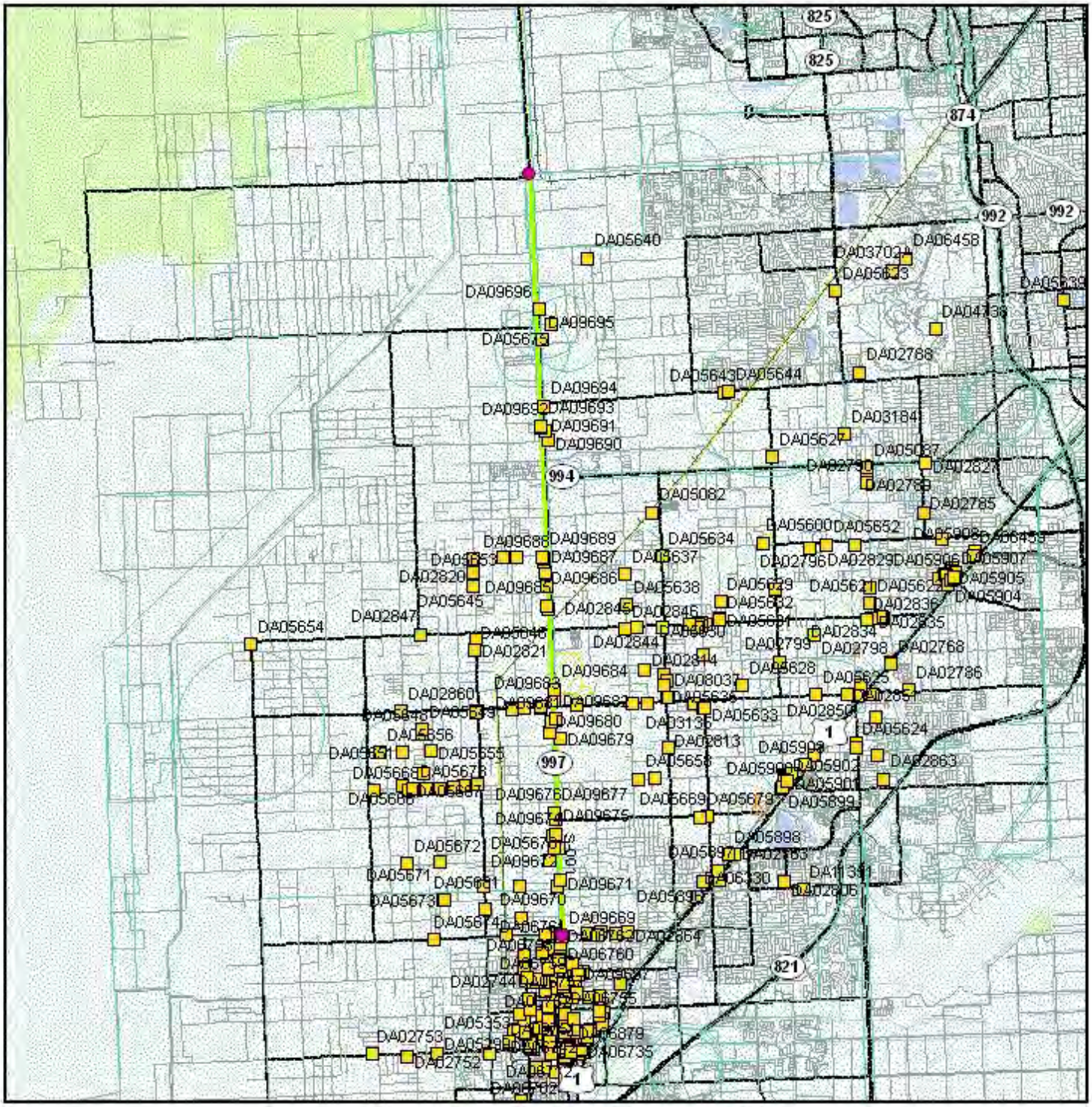
Floodplain Resource Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body
- City Limits
- County Boundaries
- Inside Special Flood Hazard Area
- Outside Special Flood Hazard Area

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Federal Emergency Management Agency

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 5 Miles

Historic Resources Map

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Department of Transportation
Florida Department of State,
Bureau of Archaeological Research

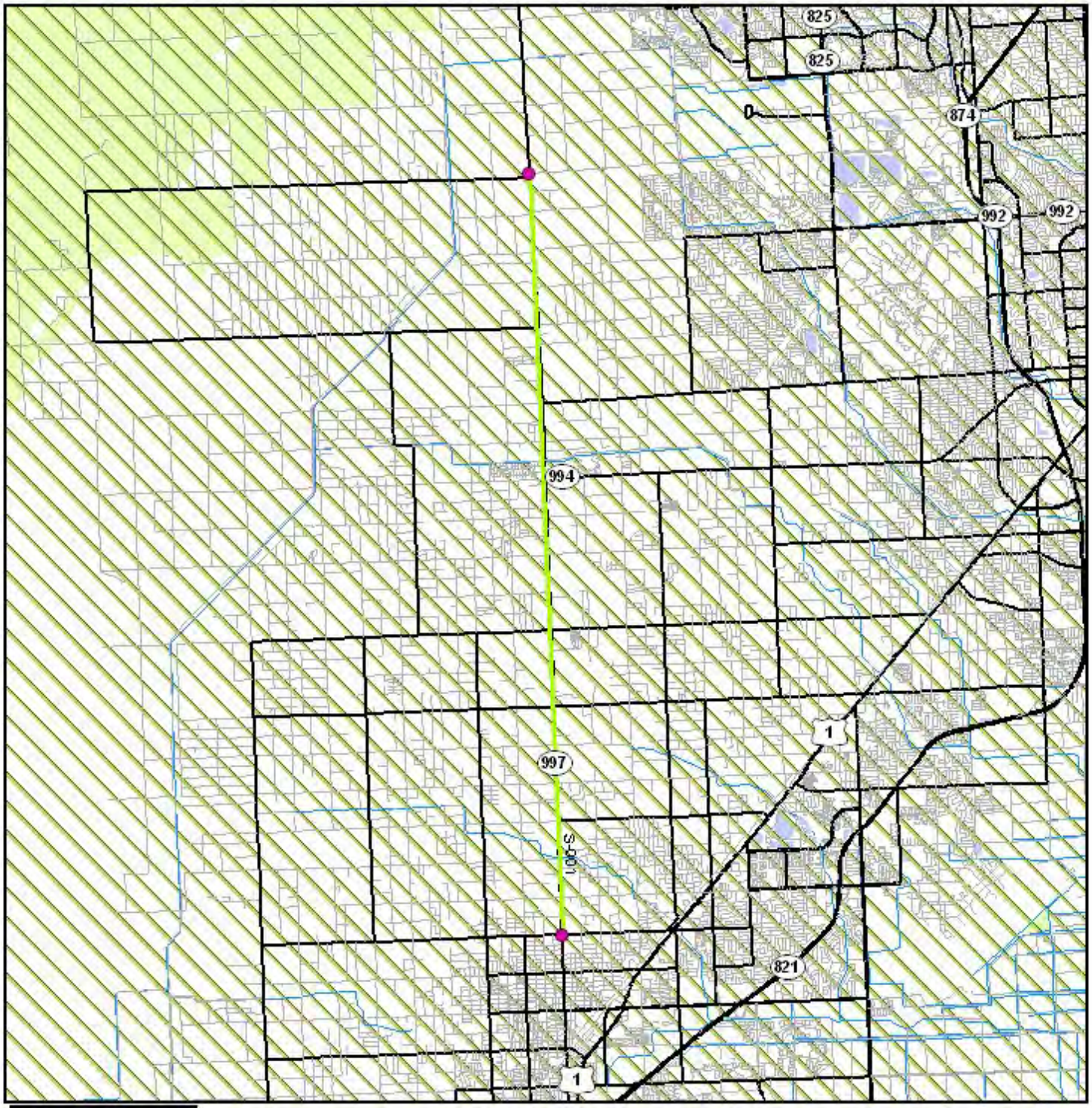
- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- River, Stream or Canal
- Water Body
- Swamp/Marsh
- Major Road
- Local Road or Trail
- Railroad
- Historic Structure
- Historic Cemetery
- Historic Bridge
- Historic Resource Group
- Cultural Resource Field Survey Area
- State Historic Highway

Note: Historic properties depicted on this map represent resources listed in the Florida Master Site File excluding archeological site locations, which, pursuant to Chapter 267.135, Florida Statutes, may be exempt from public record (Chapter 119.07, Florida Statutes). Absence of features on the map does not necessarily indicate an absence of resources in the project vicinity.

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)

SW 296th Street to SW 136th Street



0 2.5 Miles

Hydrogeology Resource Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- River, Stream or Canal
- Other Water Body
- Swamp/Marsh

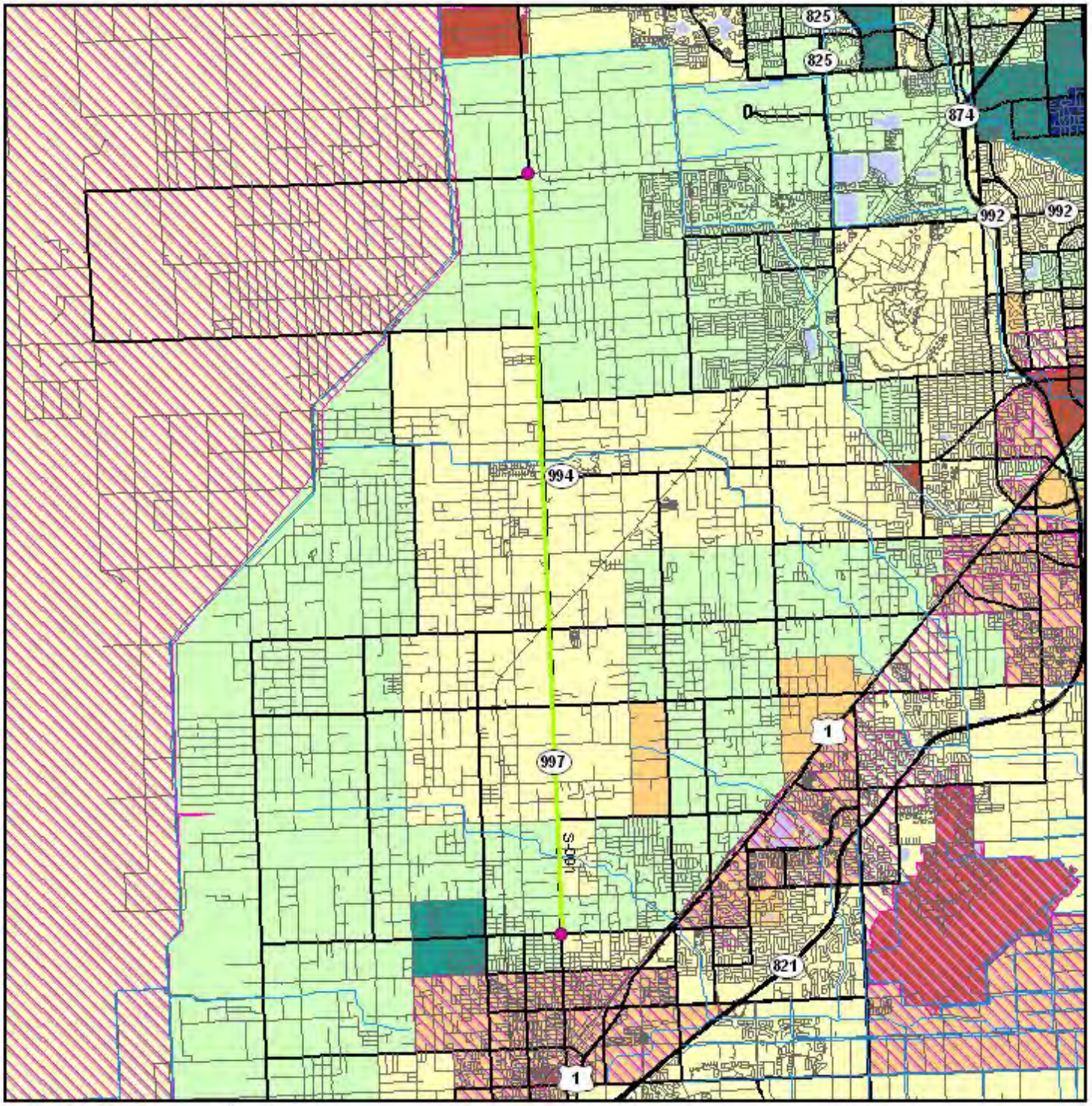
Recharge Areas of the Floridan Aquifer
- Discharge 1 TO 5
- Discharge > 5
- Disharge < 1
- Recharge 1 TO 10
- Recharge > 10
- Recharge < 1

Geological Epoch
- Eocene
- Holocene
- Miocene
- Miocene/Pliocene
- Oligocene
- Oligocene/Miocene
- Pleistocene
- Pleistocene & Holocene
- Pliocene
- Pliocene/Pleistocene

Data Sources: Geographic Data Technology, Inc.; US Geological Survey; Florida Department of Transportation; South West Florida Water Management District; Florida Geological Survey

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 3 Miles

Income Distribution Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- > 20% Below Poverty
- Water Body

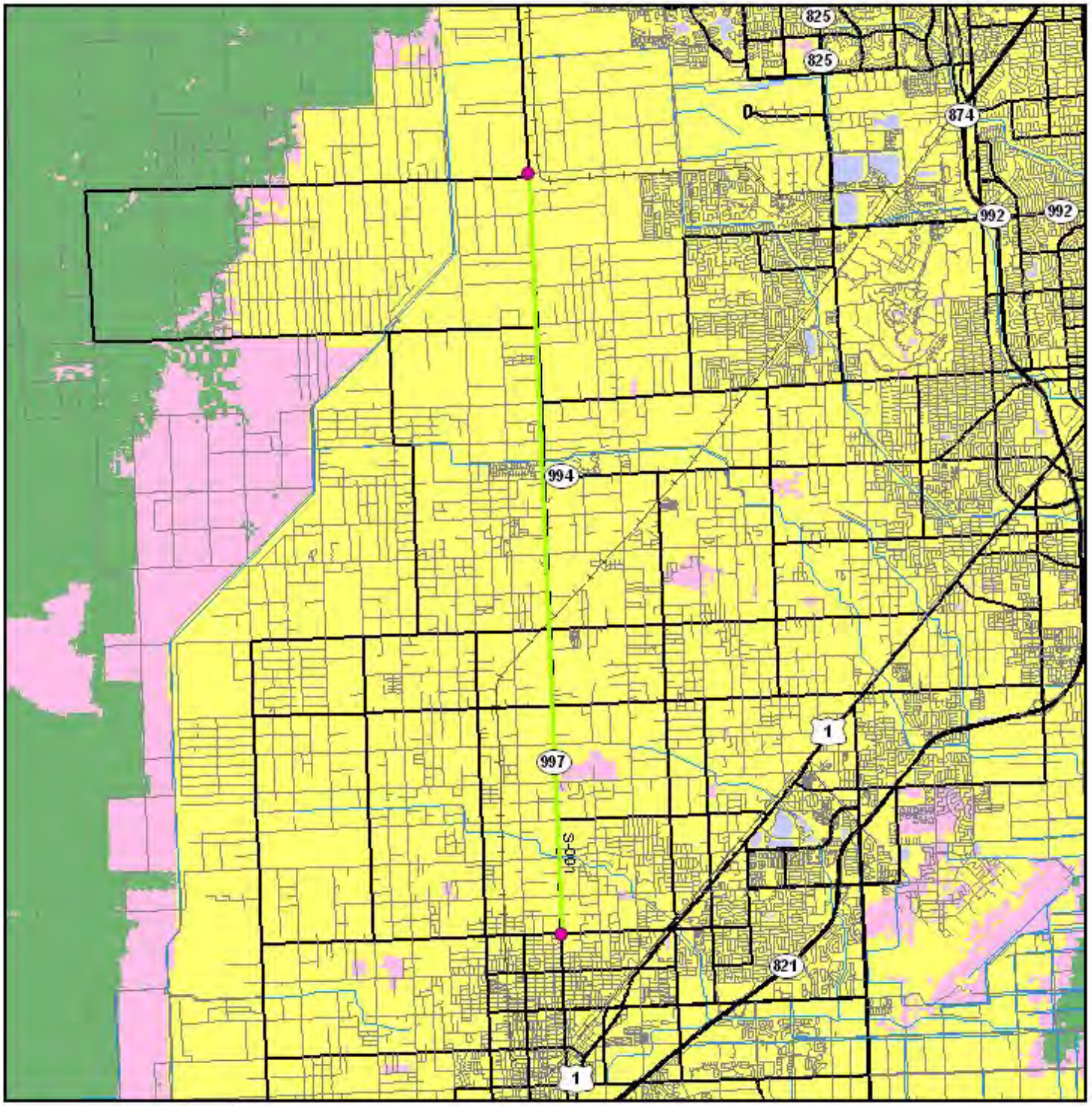
Median Household Income

0 - 10000
10001 - 29999
30000 - 49999
50000 - 79999
80000 - 125000
> 125000

Data Sources:
US Geological Survey
FL Department of Transportation
Geographic Data Technology, Inc.
US Census Bureau

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 3 Miles

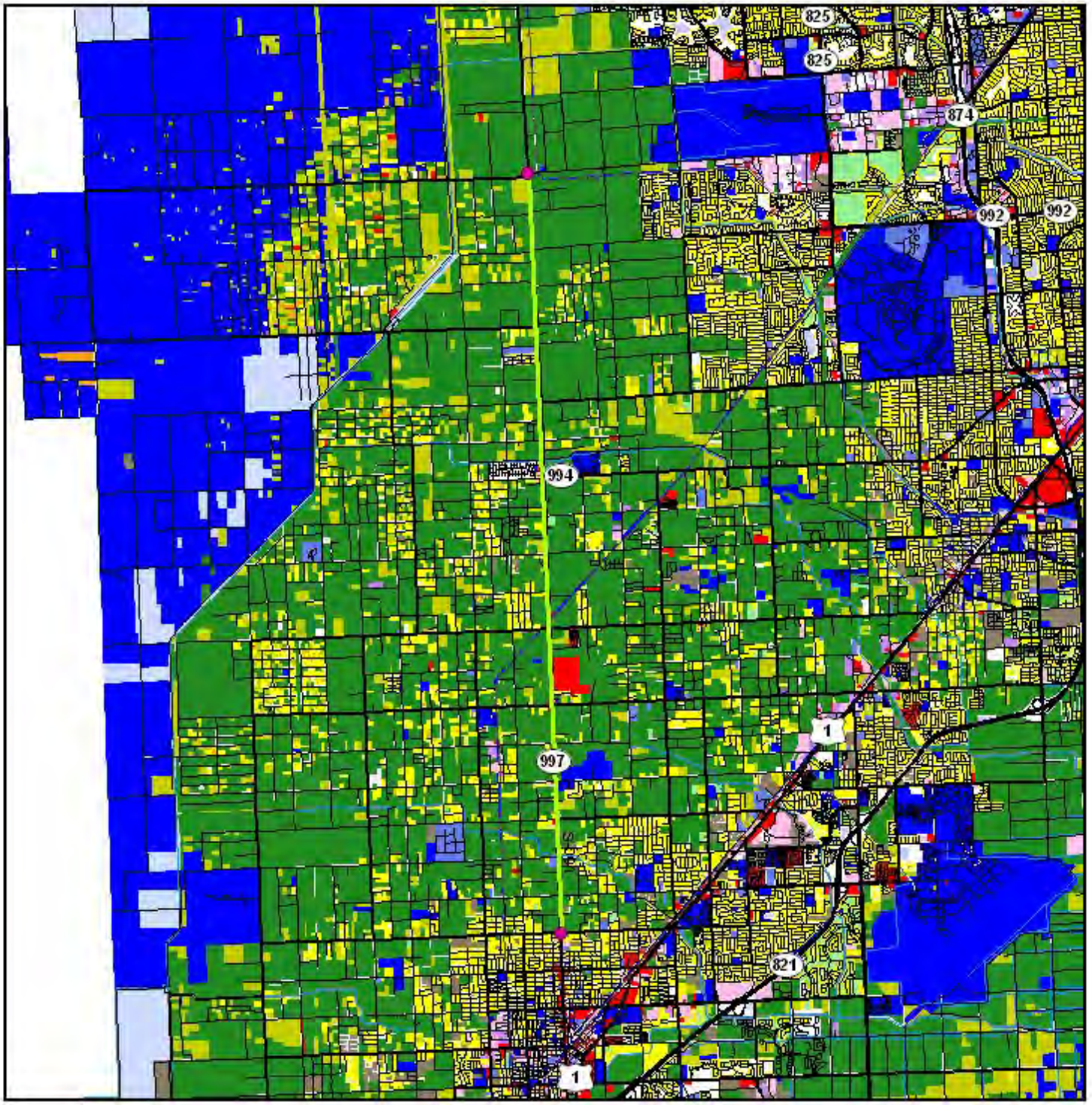
Integrated Wildlife Habitat Ranking System Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body
- Low Habitat Quality
- Medium Habitat Quality
- High Habitat Quality

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Department of Transportation
Florida Fish & Wildlife Conservation Commission

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 1 Miles

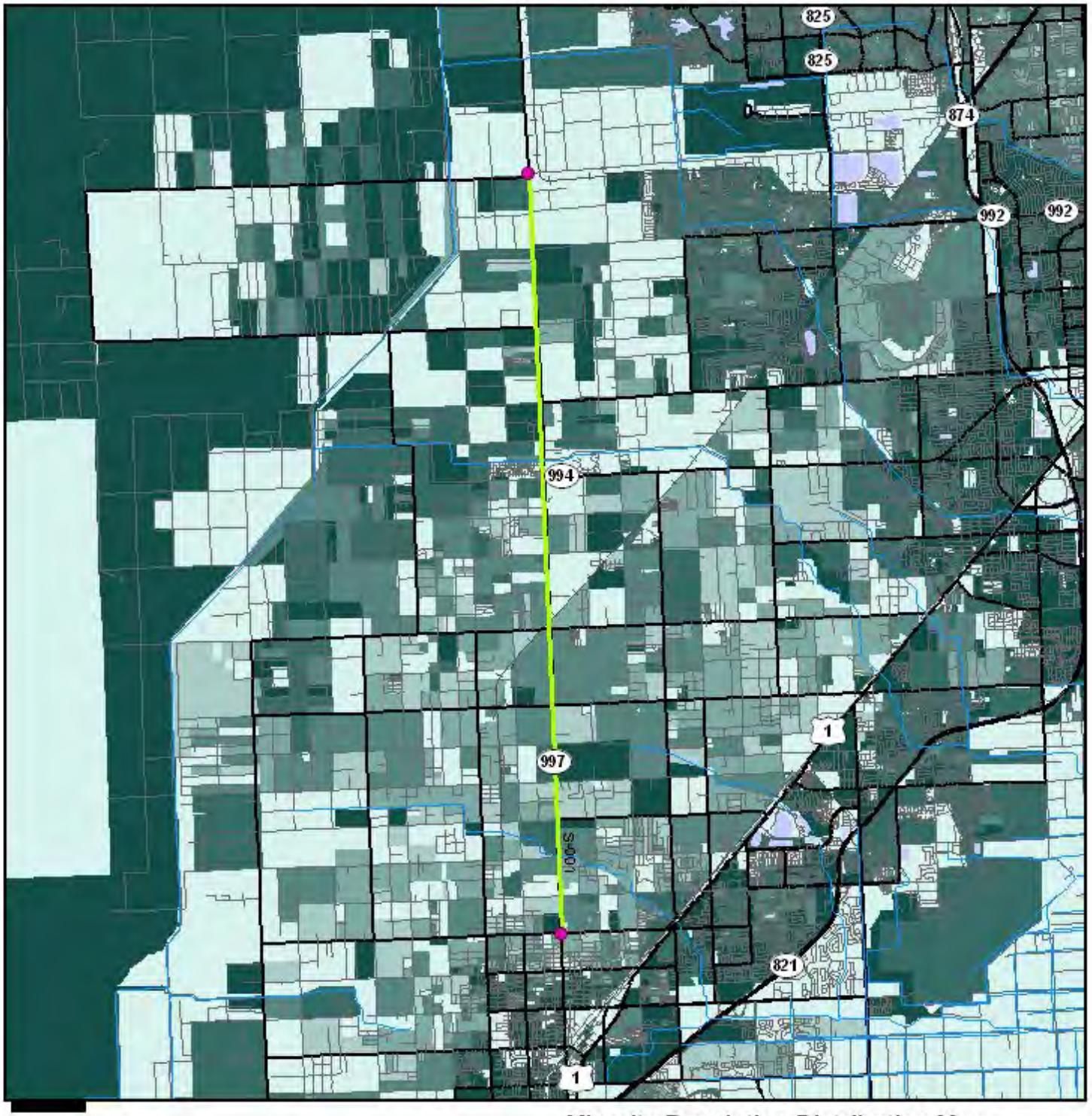
Land Use Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Agricultural
- Industrial
- Institutional
- Mining
- Open (Not Agricultural)
- Other
- Public
- Right-of-Way
- Recreational
- Residential
- Retail/Office
- Vacant (Residential)
- Vacant (Nonresidential)
- Water
- No Data

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Department of Revenue
Florida Department of Transportation
Florida County Property Appraiser Offices

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 1 Miles

Minority Population Distribution Map

ETDM Alternative Point
ETDM Alternative Terminus
ETDM Alternative Segment
ETDM Alternative Polygon

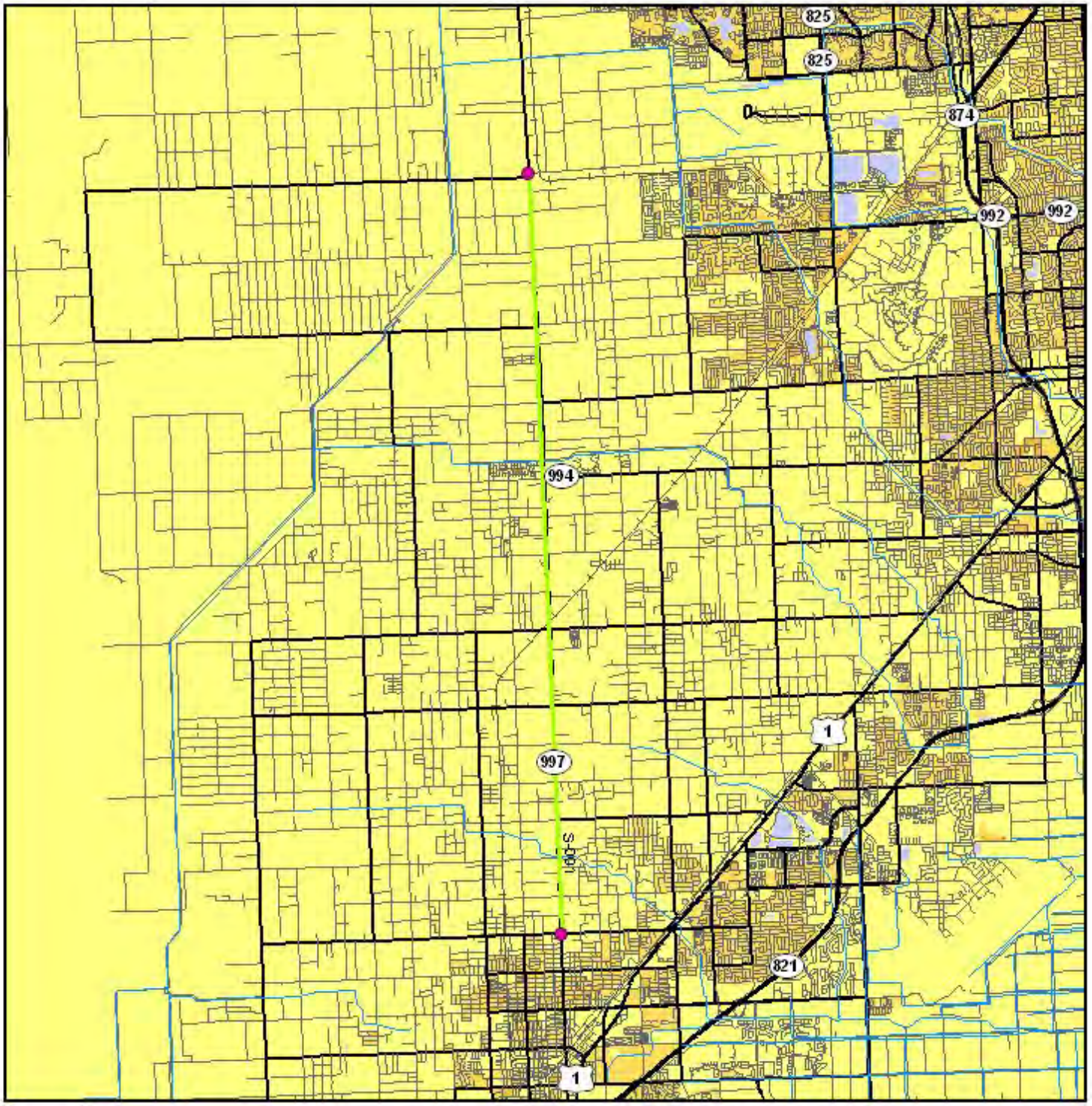
Major Road
Local Road or Trail
Railroad
River, Stream or Canal
Water Body

Percent Minority Population
0 - 6
7 - 20
21 - 38
39 - 60
61 - 85
86 - 100

Data Sources:
US Geological Survey
FL Department of Transportation
Geographic Data Technology, Inc.
US Census Bureau

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 1 Miles

Population Density Map

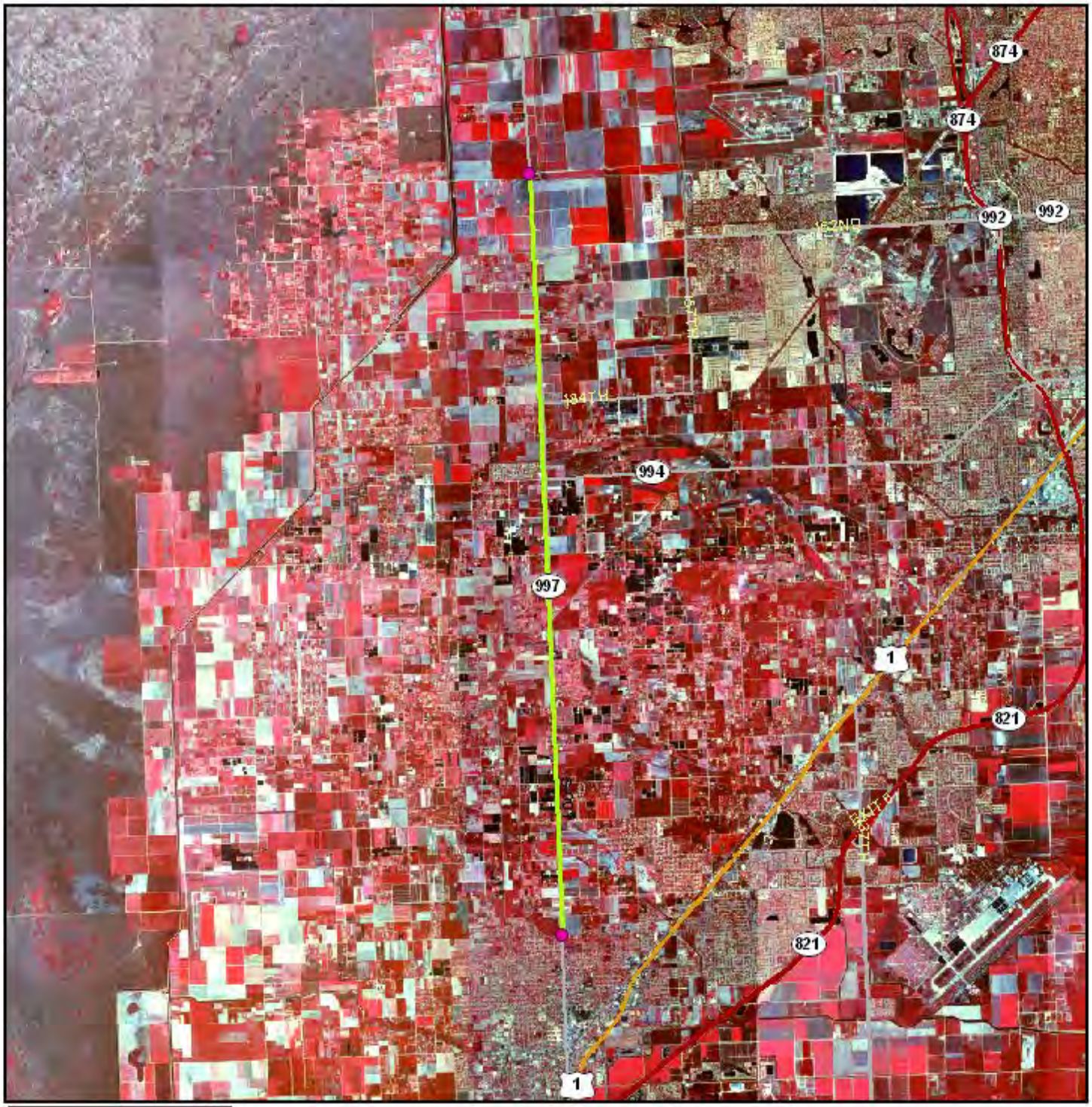
- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body

Population per Acre: 0 - 4.9, 5 - 29.9, 30 - 99.9, 100 - 349.9, 350 - 800, > 800

Data Sources:
US Geological Survey
FL Department of Transportation
Geographic Data Technology, Inc.
US Census Bureau

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 3 Miles

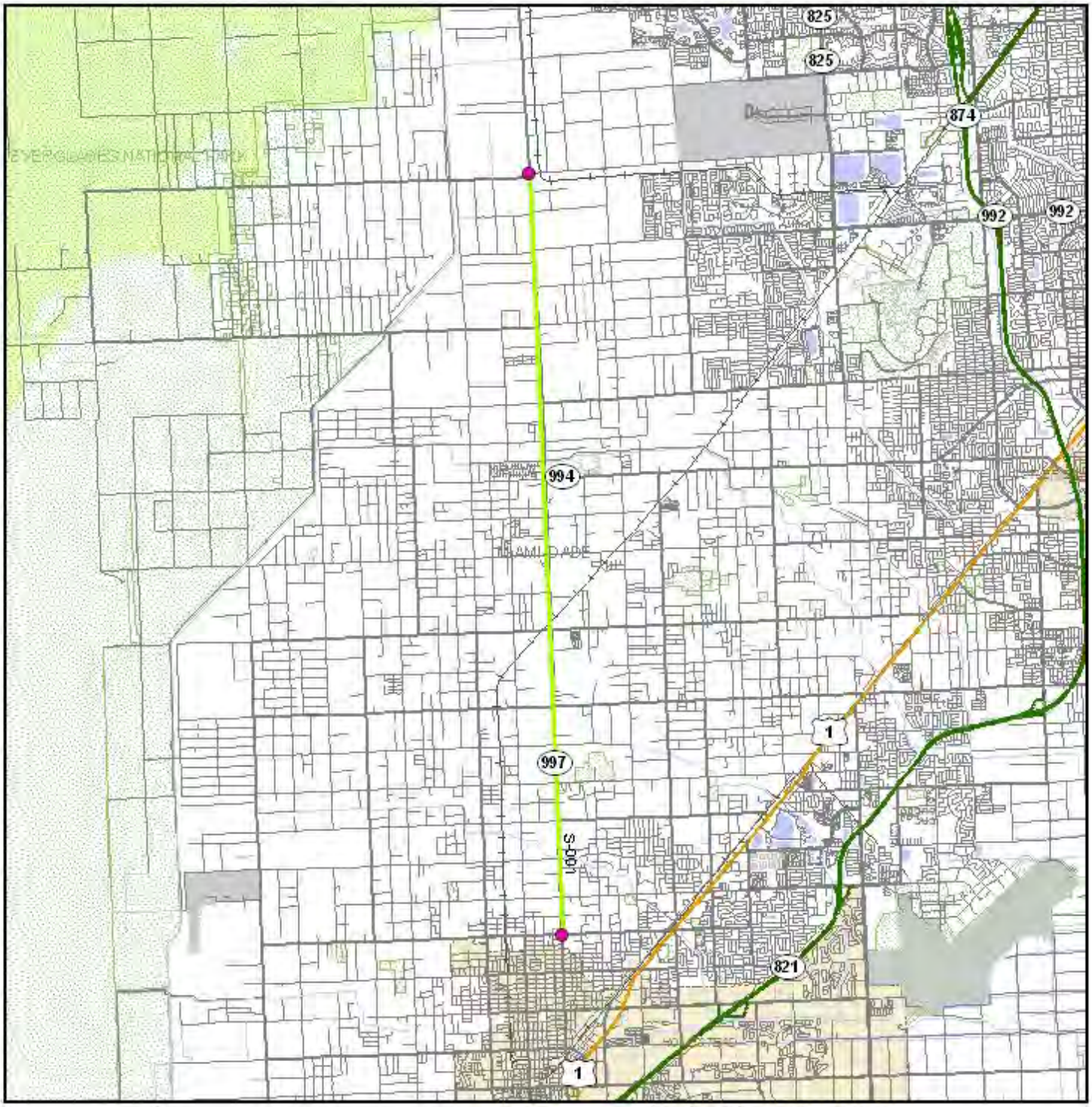
Project Aerial Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Primary and Limited Access Highway
- Secondary, Unlimited Access Highway
- Other Highway Feature

Data Sources:
Highways - Geographic Data Technology, Inc.
Digital Orthophotograph - US Geological Survey

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 2 Miles

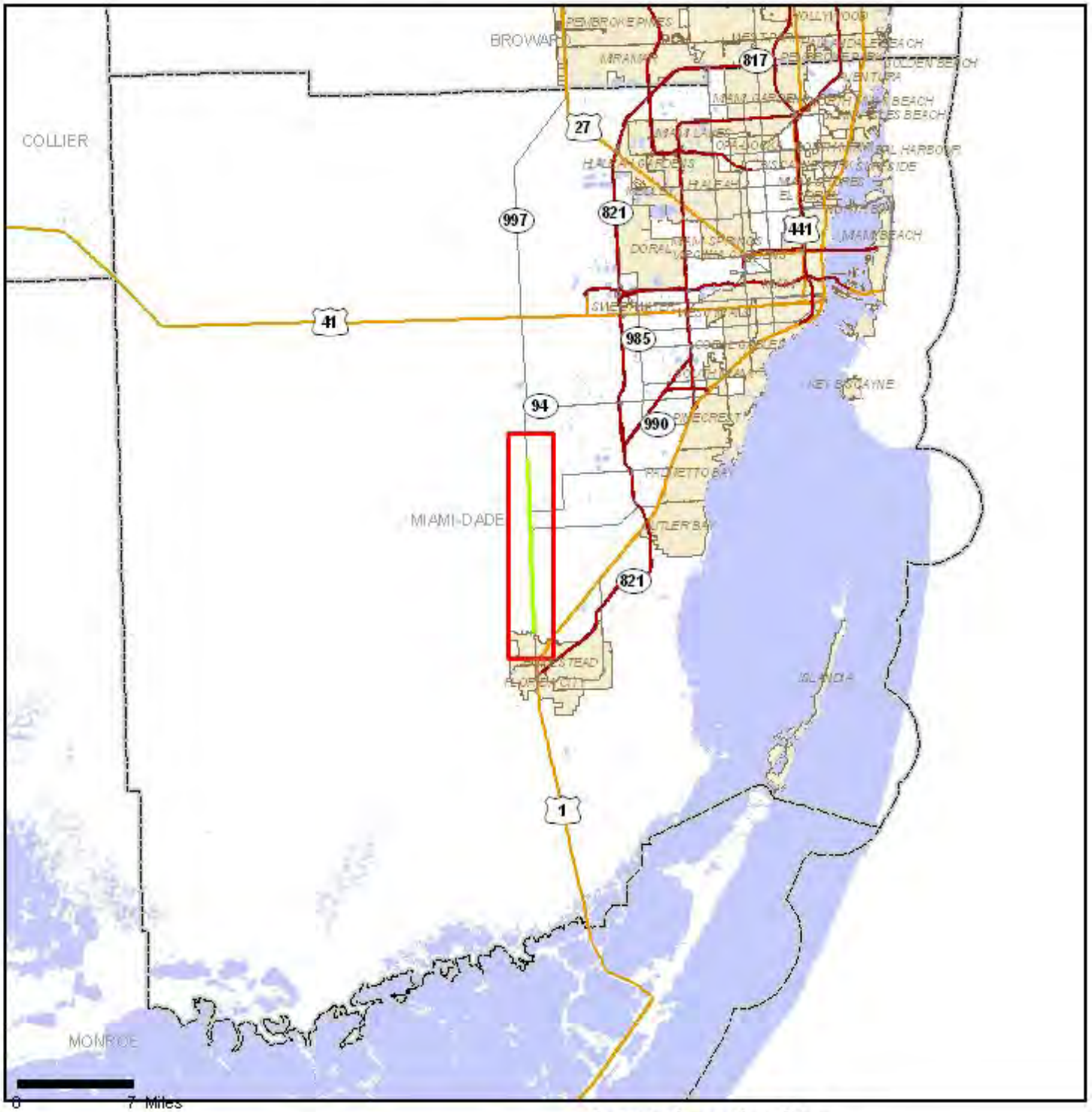
Project Location Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- River, Stream or Canal
- Water Body
- Swamp/Marsh
- Managed Conservation Lands
- Primary and Limited Access Highway
- Secondary, Unlimited Access Highway
- Connecting Road
- Local Road or Trail
- Other Roadway Feature
- Toll Road
- Railroad
- Airport
- City Limits
- County Boundaries

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
US Census Bureau
County Property Appraisers
Florida Natural Areas Inventory

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



County Location Map

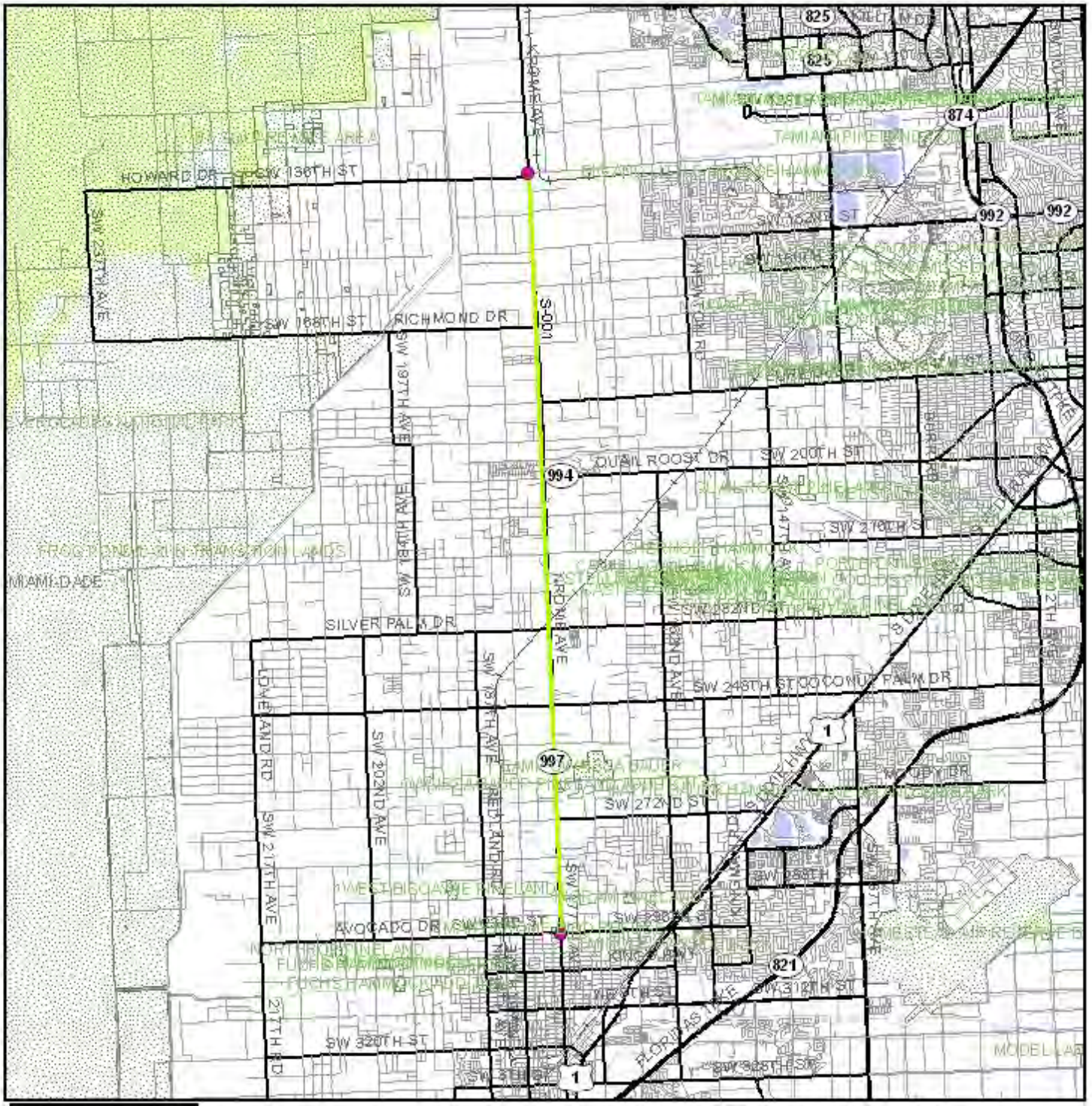
- ET DM Alternative Point
- ET DM Alternative Segment
- ET DM Alternative Polygon
- Primary and Limited Access Highway
- Secondary, Unlimited Access Highway
- Other Highway Feature
- Water Body
- City Limit
- County Boundary
- Project Extent

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
US Census Bureau
County Property Appraisers

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)

SW 296th Street to SW 136th Street



0 2.5 Miles

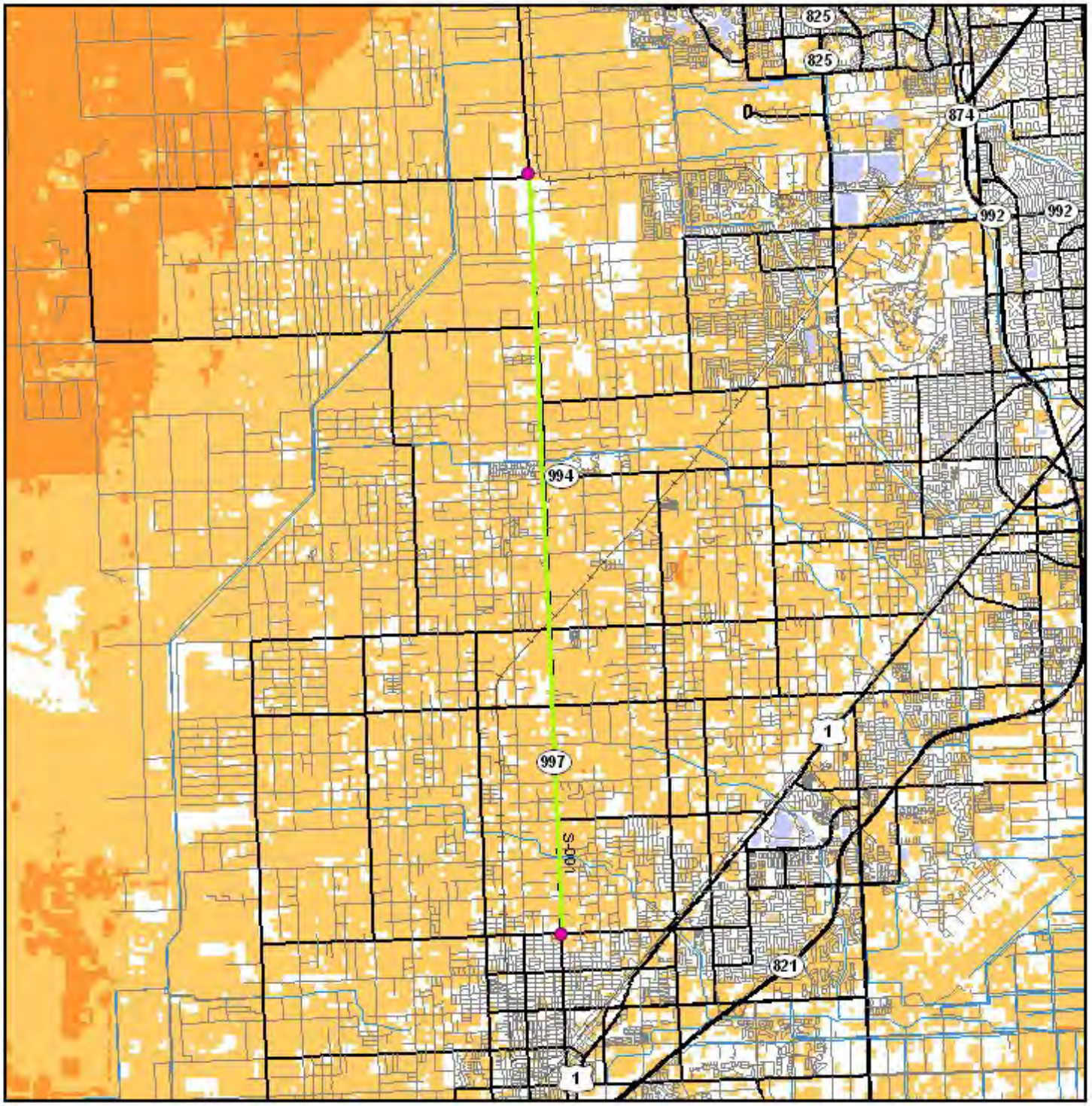
Conservation and Recreation Area Map

- ETDM Alternative Point
- ETDM Alternative Segment
- ETDM Alternative Polygon
- ETDM Alternative Terminus
- River, Stream or Canal
- Water Body
- Swamp/Marsh
- Conservation or Recreation Area
- Major Road
- Local Road or Trail
- Railroad
- County Boundary

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Natural Areas Inventory

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 2.5 Miles

Species Potential Habitat Model Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body

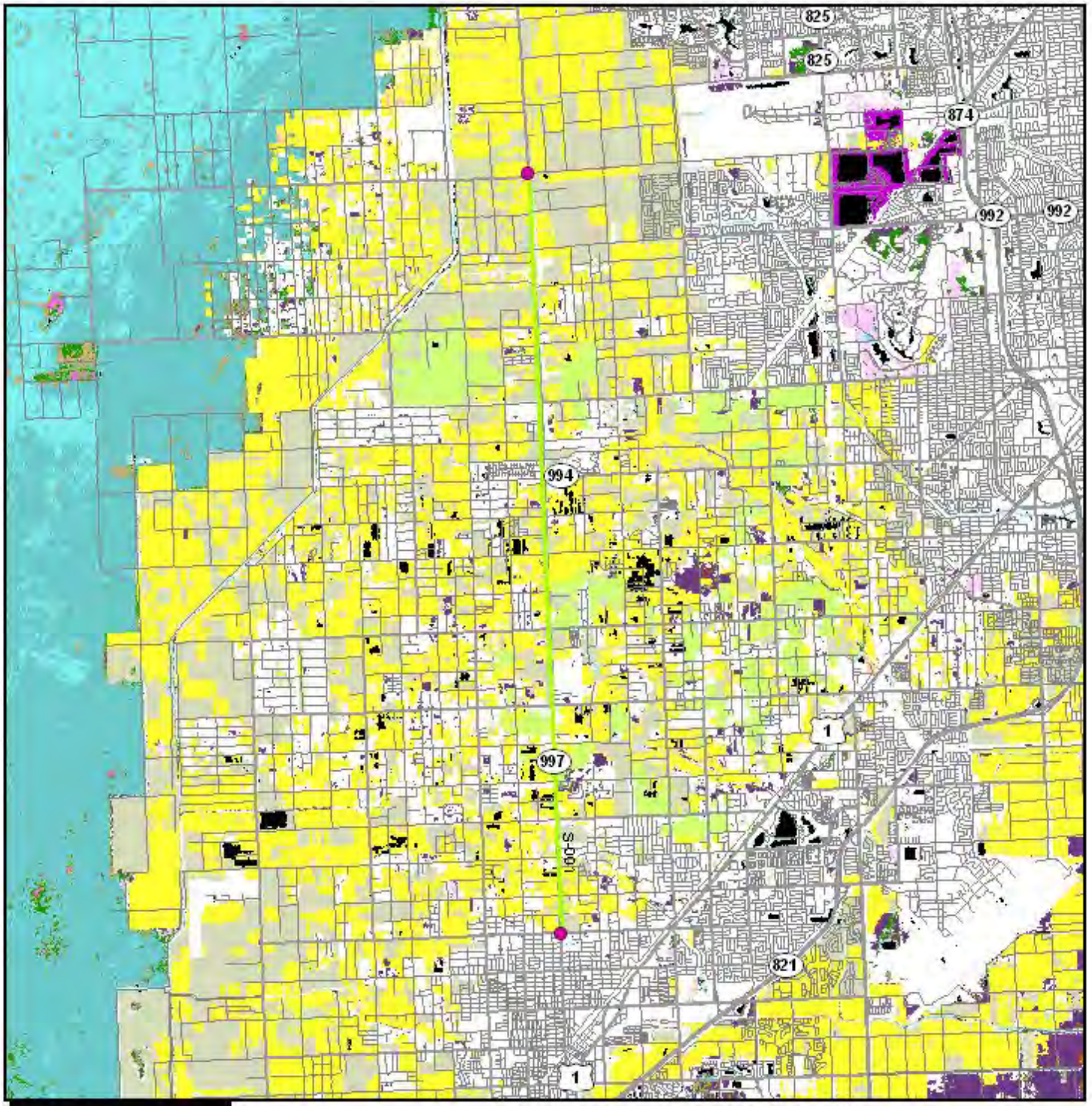
Potential Habitat for Focal Species

- 1 - 6 Species
- 7 - 12 Species
- 13 - 18 Species
- > 18 Species

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Department of Transportation
Florida Fish & Wildlife Conservation Commission

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 3 Miles

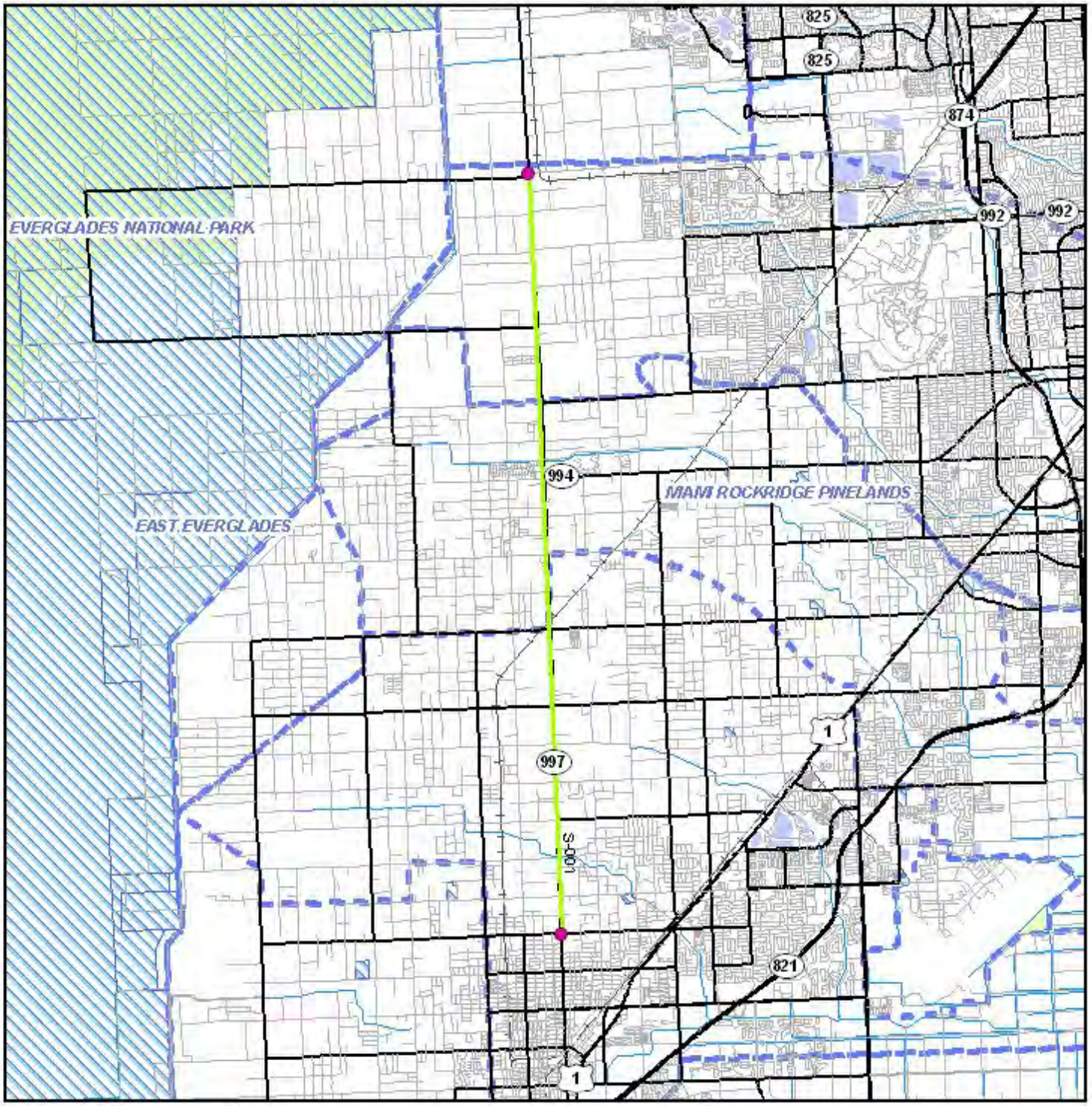
Vegetation and Land Cover Map

- ETDM Alternative Polygon
- ETDM Alternative Segment
- ETDM Alternative Terminus
- ETDM Alternative Point
- Major Road
- Local Road or Trail
- Not Classified
- Coastal Strand
- Sand/Beach
- Xeric Oak Scrub
- Sand Pine Scrub
- Sandhill
- Dry Prairie
- Mixed Hardwood-pine Forest
- Hardwood Hammocks and Forests
- Pinelands
- Cabbage Palm-live Oak Hammock
- Tropical Hardwood Hammock
- Freshwater Marsh and Wet Prairie
- Sawgrass Marsh
- Cattail Marsh
- Shrub Swamp
- Bay Swamp
- Cypress Swamp
- Cypress/Pine/Cabbage Palm
- Mixed Wetland Forest
- Hardwood Swamp
- Hydric Hammock
- Bottomland Hardwood Forest
- Salt Marsh
- Mangrove Swamp
- Scrub Mangrove
- Tidal Flats
- Open Water
- Shrub and Brushland
- Grassland
- Bare Soil/Clearcut
- Improved Pasture
- Unimproved Pasture
- Sugarcane
- Citrus
- Row and Field Crops
- Other Agriculture
- Exotic Plants
- Australian Pine
- Melaleuca
- Brazilian Pepper
- High Impact Urban
- Low Impact Urban
- Extractive

Data Sources:
Geographic Data Technology, Inc.; Florida Department of Transportation; Florida Fish and Wildlife Conservation Commission

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)
SW 296th Street to SW 136th Street



0 3 Miles

Water Resources Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- 1st Magnitude Spring
- River, Stream or Canal
- Navigable Water Way
- Drainage Basin
- Outstanding Florida Water
- Surface Water Class I
- Surface Water Class II
- Other Water Body
- Swamp/Marsh

Data Sources:

Geographic Data Technology, Inc.
US Geological Survey

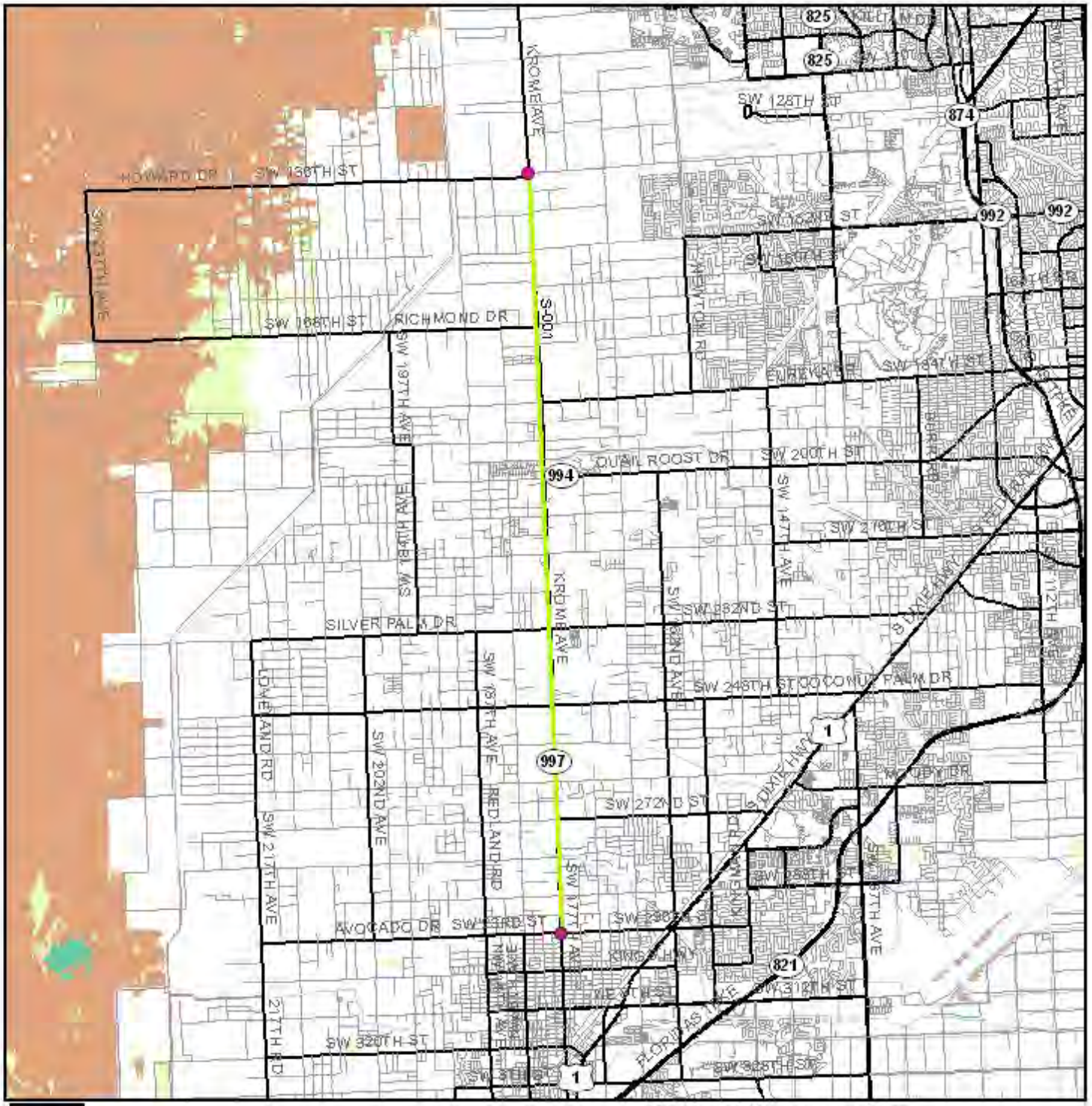
Florida Department of Transportation
Florida Department of Environmental Protection

Florida Geological Survey
US Bureau of Transportation Statistics

Map Generated on: 4/20/2009

7800 SR 997/Krome Avenue/SW 177th Ave (South)

SW 296th Street to SW 136th Street



0 1 Miles

Wetland Resource Map

- ETDM Alternative Polygon
- ETDM Alternative Segment
- ETDM Alternative Terminus
- ETDM Alternative Point
- Major Road
- Local Road or Trail
- River, Stream or Canal
- Water Body
- Wetland Hardwood Forest
- Wetland Coniferous Forest
- Wetland Forested Mixed
- Vegetated Non-forested Wetland
- Non-vegetated Wetland
- Cut Over Wetland
- Wetland Scrub Shrub

Data Sources: Geographic Data Technology, Inc.; Florida Water Management Districts; US Geological Survey

Map Generated on: 4/20/2009

APPENDIX N

Water Quality Impact Evaluation

WQIE CHECK LIST

Project Name:	State Road (SR) 997/Krome Avenue/SW 177th Avenue Project Development & Environment (PD&E) Study from SW 296th Street to SW 136th Street.
County:	Miami-Dade
FIN (Financial Number):	249614-4-22-01
Federal Aid Project No.	N/A
Short Project Description:	The FDOT is evaluating roadway and safety improvement alternatives along a 10-mile segment of SR 997/SW 177th Avenue (Krome Avenue) from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive). The project corridor is located in South Miami-Dade County, Florida. Krome Avenue is part of the Florida Intrastate Highway System (FIHS) and the Strategic Intermodal System (SIS). Project objectives include the following: Implement the necessary safety improvements; improve roadway conditions; increase capacity to mitigate existing traffic congestion and to accommodate future traffic demand; improve drainage by providing the necessary stormwater treatment; improve access management; improve bicycle/pedestrian access and continuity; incorporate landscaping and aesthetic treatments; and maintain an adequate level of service for traffic during construction.

PART 1: DETERMINATION OF WQIE SCOPE

Does project increase impermeable surface area? ☒ Yes ☐ No

Does project alter the drainage system? ☒ Yes ☐ No

If the answer to both questions is no, complete the WQIE by checking Box A in Part 4.

Do environmental regulatory requirements apply? ☒ Yes ☐ No

If no, proceed to Part 4 and check Box B.

PART 2: PROJECT CHARACTERISTICS

20-year design ADT: 58,000 vehicles/day (Year 2030)

Expected speed limit: 45 miles/hour (posted)

Drainage area: 211.01 acres; 43.03 % Impervious; 56.97 % Pervious

Land Use: 90% Agricultural; 3% Residential; 5% Commercial; 1% Institutional; 1% Conservation.

Potential Large Sources of Pollution (identify): Exxon Krome located at 19900 SW 177 Avenue, Farm Store #156 located 24791 SW 177 Avenue, Barreto Yaz Group located at 24800 SW 177 Avenue, Krome Station located at 27200 SW 177 Avenue (see CSER for details).

Groundwater Receptor (Name of Aquifer or N/A): Surficial Aquifer System

Designated Well Head Protection Area: ☐ Yes ☒ No Name: N/A

Sole Source Aquifer: ☒ Yes ☐ No Name: Biscayne Aquifer

Groundwater Recharge Mechanism: Local Precipitation Only

(Notify District Drainage Engineer if Karst Conditions Expected)

Surface Water Receptor (Name or N/A): C-102 and C-103

Classification: ☐ I ☐ II ☒ III ☐ IV ☐ V

Special Designation (check all that apply):

☐ ONRW ☐ OFW ☐ Aquatic Preserve ☐ Wild & Scenic River

☐ Special Water ☐ SWIM Area ☐ Local Comp Plan ☐ MS4 Area

☐ Other (specify): _____

Conceptual Storm Water Conveyances & System (check all that apply):

☒ Swales ☐ Curb and Gutter ☐ Scuppers ☒ Pipe ☒ French Drains

☐ Retention/Detention Ponds ☐ Other:

PART 3: ENVIRONMENTAL REGULATORY REQUIREMENTS

Regulatory Agency (check all that apply)	Reference Citation for Regulatory Criteria	Most Stringent Criteria (check all that apply)
USEPA ☐	N/A	☐
FDEP ☒	Section 402 of the Clean Water Act (NPDES Program)	☒
SFWMD ☒	Chapter 40E-40, F.A.C. and ERP Basis of Review	☒
USACE ☒	Section 404 of the Clean Water Act	☒

Proceed to Part 4 and Check Box C.

PART 4: WQIE DOCUMENTATION

A. ☐ Water quality is not an issue

B. ☐ No regulatory requirements apply to water quality issues.
(Document by checking the "none" box for water quality in Section 6.C.3 of the Environmental Determination Form or Section 5.C.3 of the SEIR.)

C. ☒ Regulatory requirements apply to water quality issues. Water quality issues will be mitigated through compliance with the quantity design requirements placed by the South Florida Water Management District, an authorized regulatory agency.

Evaluator Name (print):

Julio Boucle, P.E.

Office:

URS Corporation Southern – Miami, Florida

Signature: _____ Date: 6-20-07