PRELIMINARY ENGINEERING REPORT

ETDM Number 7559
FPIN: 410981-2-28-01
FAP: None Assigned

Florida Department of Transportation
District Three
1074 Highway 90 East
Chipley, Florida 32428

Federal Highway Administration
Florida Division
545 John Knox Road, Suite 200
Tallahassee, Florida 32310

AUGUST 2013

PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

ETDM Number: 7559
Financial Management Number: 410981-2-28-01

This preliminary engineering report contains detailed engineering information that fulfills the purpose and need for the Gulf Coast Parkway project. The Gulf Coast Parkway is a proposed new, four-lane divided, controlled-access, arterial highway, approximately 30 miles in length. The proposed facility would provide an urban typical section with bicycle land and sidewalks in urban areas and a rural typical section with a multi-use trail on one side of the highway. The proposed new road would also provide a new high-level bridge across the Gulf Intracoastal Waterway (ICWW) to connect US 98 in Gulf County, Florida with US 231 and US 98 (Tyndall Parkway) in Bay County, Florida.

___/____/____

Date

_____

Professional Engineer

Seal below

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

TABLE OF CONTENTS

Section	Title	Page
SECTION 1	**SUMMARY OF PROJECT**	**1-1**
1.1	Recommendations	1-1
1.1.1	FDOT Recommended Alternative	1-1
1.1.2	Other Recommendations	1-1
1.2	Commitments	1-2
1.2.1	Commitment Compliance	1-2
1.2.2	Specific Commitments	1-3
SECTION 2	**INTRODUCTION**	**2-1**
2.1	Purpose	2-1
2.2	Project Description	2-1
SECTION 3	**NEED FOR IMPROVEMENT**	**3-1**
3.1	Need for the Project	3-1
3.1.1	Enhance Gulf County's Economic Competitiveness	3-1
3.1.2	Improve Mobility and Connectivity within the Regional Transportation Network	3-4
3.1.3	Maintain Continuity with Planned Future Transportation Projects	3-8
3.1.4	Improve Security of the Tyndall Air Force Base	3-8
3.1.5	Improve Hurricane Evacuation Capability	3-9
3.1.6	Plan Consistency	3-10
3.2	REFERENCES	3-16
SECTION 4	**EXISTING CONDITIONS**	**4-1**
4.1	Functional classification	4-1
4.2	Typical Section	4-1
4.2.1	Typical Section for CR 386	4-1
4.2.2	Typical Section for SR 22	4-2
4.2.3	Typical Section for US 98	4-2
4.2.4	Typical Section for US 231	4-2
4.2.5	Typical Section for Star Avenue (CR 2315)	4-2
4.2.6	Typical Section for Tram Road (CR 101)	4-2
4.2.7	Typical Section for Nehi Road	4-2
4.3	Bicycle and Pedestrian Facilities	4-2
4.4	Transit	4-6
4.5	Right-of-Way	4-6
4.6	Geometric Elements	4-6
4.7	Drainage	4-7
4.8	Crash Data	4-10
4.9	Intersection and Signalization	4-11
4.10	Utilities	4-11

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

TABLE OF CONTENTS

4.11 Existing Bridges 4-13
4.11.1 CR 386 Bridges and Culverts 4-13
4.11.2 SR 22 Bridges and Bridge Culverts 4-14
4.11.3 Jarrott Daniels Road Bridge 4-16
4.12 Geotechnical Data 4-16
4.13 Land Use Data 4-16
4.14 Demographics 4-22
4.15 Cultural Features and Community Services 4-24
4.16 Cultural and Historic Resources 4-32
4.17 Prime and Unique Farmlands 4-37
4.18 Natural And Biological Features 4-37
4.18.1 Water Resources 4-37
4.18.2 Wetlands 4-45
4.18.3 Essential Fish Habitat 4-47
4.18.4 Wildlife and Habitat 4-54
4.19 Physical Features 4-59
4.19.1 Air Quality 4-59
4.19.2 Noise 4-59
4.19.3 Potential Contamination Sites 4-59
4.20 REFERENCES 4-63

SECTION 5 DESIGN CONTROLS AND STANDARDS 5-1
5.1 Design Controls 5-1
5.2 Design Standards 5-2
5.3 REFERENCES 5-8

SECTION 6 TRAFFIC 6-1
6.1 Design Traffic 6-1
6.1.1 Overview 6-1
6.1.2 Design Characteristics 6-1
6.2 Existing Traffic Conditions 6-2
6.2.1 Existing and Future Projected Traffic 6-2
6.2.2 Level of Service Analysis 6-9
6.2.3 Roadway Segment Daily Level of Service 6-9
6.2.4 Intersection Level of Service Analysis 6-9
6.2.5 Traffic Impact on Existing Roadways 6-27
6.3 REFERCENCES 6-35

SECTION 7 CORRIDOR ALTERNATIVES 7-1
7.1 Gulf Coast Parkway Preliminary Studies 7-1
7.1.1 Gulf Coast Parkway Corridor Feasibility Study Report 7-1
7.1.2 Gulf Coast Parkway Concept Master Plan 7-2
7.2 Efficient Transportation Decision Making 7-5

TABLE OF CONTENTS

7.3 Evaluation of Alternative Corridors 7-9
7.3.1 Corridors Identified For Further Study 7-10
7.4 REFERENCES 7-18

SECTION 8 ALTERNATIVE ALIGNMENT ANALYSIS 8-1
8.1 No Build Alternative 8-1
8.2 Transportation System Management ALTERNATIVES 8-2
8.3 Multi-Modal Alternatives 8-2
8.4 Build Alternatives 8-2
8.4.1 Typical Sections 8-2
8.4.2 Development of Alternative Alignments 8-8
8.4.3 Build Alternatives 8-14
8.5 Engineering Analysis 8-22
8.5.1 Traffic Considerations 8-22
8.5.2 Drainage Considerations 8-33
8.5.3 Bridge Considerations 8-36
8.5.4 Costs Analysis 8-43
8.5.5 Bicycle and Pedestrian Accommodations 8-44
8.5.6 Access Management 8-44
8.5.7 Intersection Layouts 8-44
8.5.8 Utilities 8-52
8.5.9 Railroads 8-54
8.6 Environmental Analysis 8-54
8.6.1 Social and Economic Considerations 8-54
8.6.2 Mobility and Accessibility 8-70
8.6.3 Cultural Resources 8-76
8.6.4 Natural and Physical Impacts 8-78
8.6.5 Wetlands 8-97
8.6.6 Essential Fish Habitat 8-107
8.6.7 Special Designations 8-114
8.6.8 Water Quality 8-118
8.6.9 Floodplains 8-126
8.6.10 Coastal Zone Consistency 8-127
8.6.11 Wildlife and Habitat 8-128
8.6.12 Contamination 8-134
8.6.13 Farmlands 8-137
8.6.14 Navigation 8-139
8.7 Evaluation Matrix 8-144
8.7.1 Evaluation Criteria 8-144
8.7.2 Alternatives Evaluation Methodology 8-147
8.7.3 Summary of Alternatives Comparative Evaluation 8-148
8.7.4 FDOT Recommended Alternative 8-152
8.7.5 Permitting 8-153

TABLE OF CONTENTS

8.7.6 Construction 8-154
8.8 Public Involvement Program 8-159
8.9 Chronology of Project Coordination Activities 8-159
8.9.1 Corridor Feasibility Study and Project Concept Report 8-160
8.9.2 State Environmental Impact Report 8-162
8.9.3 Environmental Impact Statement 8-162
8.10 Coordination with Agencies 8-175
8.10.1 Agency Scoping Meeting 8-175
8.10.2 Environmental Agency Meetings 8-177
8.11 Public Coordination 8-179
8.11.1 Corridor Feasibility Study Public Involvement 8-179
8.11.2 PD&E Public Involvement 8-181
8.11.3 Environmental Impact Statement Public Involvement 8-182
8.11.4 Public Opinion Surveys 8-186
8.11.5 Project Website 8-191
8.11.6 Public Hearing 8-191
8.11.7 Resolutions and Letters of Support 8-191
8.12 REFERENCES 8-192

APPENDICES

Appendix A: Issue Action Plans
Appendix B: Resolutions and Letters of Support
Appendix C: AD-1006 USDA Farmland Conversion Impact Rating Form
Appendix D: Twelve ETDM Corridors
Appendix E: Table of ETAT Comments
Appendix F: Typical Section Package
Appendix G: Segment Pairs Analysis Documentation
Appendix H: Plan Sheets
Appendix I: Pond Sizing Calculations
Appendix J: Construction and Right-of-Way Costs Supporting Documentation
Appendix K: Water Quality Impact Evaluation
Appendix L: Coastal Zone Consistency Letter
Appendix M: Notice of Intent to Prepare an Environmental Impact Statement
Appendix N: Public Opinion Surveys
Appendix O: Maritime Archaeology Desktop Analysis
Appendix P: Navigation Information
Appendix Q: Planning Consistency Documentation
Appendix R: Joint Application for Environmental Resources Permit – Section A

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

LIST OF TABLES

Table	Title	Page
3-1	Worst Case Hurricane Clearance Times (in hours)	3-8
3-2	Gulf Coast Parkway Project Segments and Development Phases	3-10
4-1	Bay County Bicycle Lane and Pedestrian Project (Active and Proposed in Bay County	4-4
4-2	Existing Right-of-Way	4-6
4-3	FEMA Flood Insurance Rate Maps within the Study Area	4-8
4-4	FEMA Flood Insurance Studies (FIS) within the Study Area	4-8
4-5	Utility Providers in the Gulf Coast Parkway Study Area	4-12
4-6	CR 386 Bridge Culverts	4-14
4-7	SR 22 Bridge Culverts	4-15
4-8	Population Data in the Study Area	4-23
4-9	Racial Characteristics in the Study Area	4-23
4-10	Parks and Recreation Areas in the Gulf Coast Parkway Study Area	4-24
4-11	Managed Conservation Areas in the Gulf Coast Parkway Study Area	4-27
4-12	Previously Recorded Archaeological Sites in the Study Area	4-34
4-13	Previously Recorded Cultural Resources Assessments in the Vicinity of the Gulf Coast Parkway Study Area	4-35
4-14	Surface Waterbodies within the Gulf Coast Parkway Study Area	4-37
4-15	Water Quality Classifications	4-40
4-16	Verified Impaired Waters in the Gulf Coast Parkway Study Area	4-41
4-17	Coastal Barrier Resource Units in Bay and Gulf Counties	4-42
4-18	Wetland Systems (FLUCFCS) within the Study Area	4-44
4-19	Managed Fish Species Potential to Occur within the Gulf Coast Parkway Study Area	4-47
4-20	Protected Species Potentially Occurring in the Study Area	4-54
4-21	Potential Contamination Sites in the Gulf Coast Parkway Study Area	4-58
5-1	Design Criteria - Controlled Access Rural Arterial Facilities	5-4
5-2	Design Criteria Controlled Access High-Speed Urban Arterial Facilities	5-5
5-3	Bridge Design Criteria	5-6
6-1	Recommended Traffic Factors	6-2
6-2a	Future Traffic (Including Development of Regional Impact {DRI} Traffic): Alternative 8	6-4
6-2b	Future Traffic (Including DRI traffic): Alternative 14	6-5
6-2c	Future Traffic (Including DRI Traffic): Alternative 15	6-6
6-2d	Future Traffic (Including DRI Traffic): Alternative 17	6-7
6-2e	Future Traffic (Including DRI Traffic): Alternative 19	6-8
6-3	Existing Year 2011 Roadway Segment LOS	6-10
6-4a	Design Year Road Segment LOS: Alternative 8	6-11
6-4b	Design Year Road Segment LOS: Alternative 14	6-12

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

LIST OF TABLES

6-4c Design Year Road Segment LOS: Alternative 15 6-13
6-4d Design Year Road Segment LOS: Alternative 17 6-14
6-4e Design Year Road Segment LOS: Alternative 19 6-15
6-5 Existing (2012) Year Intersection LOS (No-Build Scenario)....6-21
6-6 List of Intersections Analyzed for Alternatives 8, 14, 15 and 19 6-22
6-7 Future Year (2012 and 2035) Intersection LOS for Alternatives 8, 14, 15, 17, and 19....6-24
6-8 Future Year LOS for US 231 @ Gulf Coast Parkway (Nehi Road) 6-26
6-9 Future Year LOS for US 98 (Tyndall Parkway_ @ Gulf Coast Parkway (Tram Road)....6-26
6-10 Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: No-Build Scenario 6-28
6-11 Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: Alternatives 8 and Alternatives 17 Scenarios 6-30
6-12 Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: Alternatives 14, 15, and 19 Scenarios....6-32
6-13 Summary of Gulf Coast Parkway Alternatives' LOS Effects on Existing Roads 6-34
6-14 Gulf Coast Parkway Project Segments and Development Phases 6-36
7-1 Gulf Coast Parkway Corridor Names 7-9
8-1 Description of Gulf Coast Parkway Alternative Alignment Segments....8-11
8-2 Gulf Coast Parkway Alternatives by Alignment Segments 8-13
8-3 Results of Segment Pair Analysis 8-14
8-4 Gulf Coast Parkway Build Alternatives by Segment....8-14
8-5 Gulf Coast Parkway Alternatives' Descriptions 8-22
8-6 Future Year LOS for US 231 @ Gulf Coast Parkway 8-24
8-7 Future Year LOS for US 98 @ Tram Road 8-25
8-8 Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: No-Build Scenario 8-27
8-9 Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: Alternatives 8 and Alternatives 17 Scenarios 8-30
8-10 Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: Alternatives 14, 15, and 19 Scenarios....8-33
8-11 Summary of Gulf Coast Parkway Alternatives' LOS Effects on Existing Roads 8-35
8-12 Bridges/Culverts Required by Alternative....8-37
8-13 Pond Area Required....8-38
8-14 Summary of Pond Requirements for Alternative Alignments 8-39
8-15 Proposed Vertical Clearances for Gulf Coast Parkway Bridges Over Navigable Waters 8-40

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

LIST OF TABLES

8-16 Proposed Horizontal Channel Clearances for Gulf Coast Parkway Bridges over Navigable Waters 8-40
8-17 Low Level Bridge Summary by Build Alternative 8-43
8-18 Roadway and Structure Cost Estimate for 2-Lane Roadway 8-44
8-19 Roadway and Structure Cost Estimate for 4-Lane Roadway 8-44
8-20 Estimated Project Costs for 2-Lane Roadway 8-44
8-21 Estimated Project Costs for 4-Lane Roadway 8-44
8-22 Intersections Analyzed for Alternatives 8, 14, 15, 17 and 19 8-47
8-23 Future Year (2012 and 2035) Intersection LOS 8-48
8-24 Future Year LOS for US 231 @ Gulf Coast Parkway 8-52
8-25 Future Year LOS for US 98 (Tyndall Parkway) @ Gulf Coast Parkway (Tram Road 8-52
8-26 Comparison of 2030 Subarea Populations for No Build and Build Alternatives 8-55
8-27 Summary of Relocations for the Gulf Coast Parkway Alternatives 8-56
8-28 Estimated Right-of-Way and Relocation Costs 8-57
8-29 Comparison of the Conversion of Existing Land Uses to Transportation Use (in acres) 8-59
8-30 Miles of Incompatible Land Uses Adjacent to the Gulf Coast Parkway Build Alternatives 8-59
8-31 Build Alternatives' Involvement with Conservation Land Uses 8-60
8-32 Acres of Taxable Property Converted to Public Use for Each Build Alternative 8-65
8-33 Taxable Value Lost Due to Conversion of Land to Transportation Use 8-66
8-34 Connectivity of the Gulf Coast Parkway Build Alternatives 8-67
8-35 Comparison of Travel Times of the Gulf Coast Parkway Alternatives 8-68
8-36 Comparison of Mobility Factors of the Gulf Coast Parkway Alternatives 8-68
8-37 Gulf Coast Parkway Alternatives' Reduction in Traffic in Developed Areas 8-69
8-38 Historic Sites within the Vicinity the Gulf Coast Parkway Build Alternatives 8-70
8-39 Connections to Planned Bay County Bicycle and Pedestrian Projects 8-73
8-40 Predicted Worst-Case CO Concentrations at Key Intersections 8-74
8-41 Predicted Noise Levels at Receptors Representing Sensitive Sites 8-80
8-42 Total Wetland and Upland Acreage Impacted by Gulf Coast Parkway Build Alternatives 8-90
8-43 Total Wetland and Upland Acreage Impacted by Gulf Coast Parkway Build Alternatives with 300-Foot Buffer 8-90
8-44 Comparison of Potential Direct Wetland Involvement (per FLUCFCS Code and Wetland Quality) by Gulf Coast Parkway Build Alternatives 8-92
8-45 UMAM Functional Loss Values per Wetland FLUCFCS Type for Gulf Coast Parkway Build Alternatives 8-96
8-46 Potential Indirect Wetland Involvement by Alternative 8-97

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

LIST OF TABLES

8-47 Indirect Involvement and Potential Functional Loss Per FLUCFCS Wetland Type for Build Alternatives 8-98
8-48 Potential Direct Impacts to Emergent Marsh and Open Water Habitats....8-103
8-49 Potential Indirect Impacts to Emergent Marsh, Open Water, and Submerged Aquatic Vegetation Habitats 8-104
8-50 Surface Water Crossings by Alternative....8-110
8-51 Alternatives' Involvement with Impaired Water Body Segment Drainage Areas....8-113
8-52 Comparison of Existing Roads Incorporated by Each Alternative 8-115
8-53 Comparison of Alternatives Incorporation of Existing Paved and Unpaved Roads 8-115
8-54 Gulf Coast Parkway Longitudinal Encroachments....8-116
8-56 Listed Species Occurrences within the Footprints of the Gulf Coast Parkway Build Alternatives 8-118
8-57 Determination of Effect (DE) per Species and Alternative Alignment 8-120
8-58 Risk Rankings of Potentially Contaminated Sites in the Gulf Coast Parkway Study Area 8-125
8-59 Build Alternatives' Involvement with Potential Contamination Sites....8-125
8-60 Prime and Unique Farmland Impacts....8-129
8-61 Proposed Vertical Clearances for Gulf Coast Parkway Bridges over Navigable Waters....8-131
8-62 Proposed Horizontal Channel Clearances for Gulf Coast Parkway Bridges over Navigable Waters....8-131
8-63 Evaluation Procedure Definitions....8-137
8-64 Purpose and Need Performance Category Ranking....8-139
8-65 Environmental Involvement Category Ranking 8-139
8-66 Estimated Costs Category Ranking 8-140
8-67 Public Preference Category Ranking....8-140
8-68 Overall Gulf Coast Parkway Alternatives Performan**ce** 8-140
8-69 Agencies Receiving Advance Notification....8-148
8-70 Agency Comments on the AN and FDOT Responses 8-149
8-71 Summary of Gulf Coast Parkway Agency Correspondence 8-160
8-72 Gulf Coast Parkway PD&E Study Kick-off Meetings....8-162
8-73 Public Opinion Results of the Project's Effects on Growth, Growth Benefit, & Business Benefit 8-169
8-74 Total Votes for the Gulf Coast Parkway Project's Benefits 8-169
8-75 Total Votes for the Gulf Coast Parkway Project's Greatest Concerns 8-170
8-76 Project Benefits Versus Project Impacts....8-170
8-77 Route Most Likely to be Used Depending on Destination 8-171
8-78 Total Responses for Top Two Preferred Alternatives 8-171

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

LIST OF FIGURES

Figure	Title	Page
2-1	Project Location Map and Project Area	2-2
3-1	Park and Recreation Sites within the Study Area and in South Gulf County	3-5
3-2	**Gulf Coast Parkway Construction Segments**	3-10
4-1	Floodplains in the Gulf Coast Parkway Project Area	4-9
4-2	Gulf and Bay County Existing Land Use	4-17
4-3	Gulf and Bay County Future Land Use	4-19
4-4	Planned and Permitted Developments in the Gulf Coast Parkway Study Area	4-21
4-5	Park and Recreation Sites in the Gulf Coast Parkway Study Area	4-25
4-6	**Managed Conservation Areas in the vicinity of the gulf Coast Parkway**	4-28
4-7	Ecosystem Management Areas	4-31
4-8	St. Andrew's Bay Watershed	4-39
4-9	**Drainage Basins by Surface Water Classification**	4-41
4-10	Potentially Contaminated Sites Location Map	4-62
6-1a	Opening Year 2012 DDHV	6-16
6-1b	Interim Year 2022 DDHV	6-17
6-1c	Design Year 2032 DDHV	6-18
6-2	US 98 (Tyndall Parkway)/Gulf Coast Parkway (Tram Road) Intersection Configuration DDHV	6-19
6-3	US 231/Gulf Coast Parkway (Nehi Road) Intersection Configuration DDHV	6-20
6-4	Gulf Coast Parkway Alternatives' Intersections Subject to Operational Analysis	6-23
7-1	Gulf Coast Parkway Alternatives Development Steps	7-1
7-2	Corridor Segments from the Corridor Feasibility Report	7-3
7-3	Alternative Corridors from the Corridor Feasibility Report	7-4
7-4	Corridor with Six Options from the Initial Programming Screen Review	7-6
7-5	Alternative Corridors Recommended by ETAT for Second Programming Screen Review	7-7
7-6	Twelve Corridors Submitted for Second Programming Screen Review	7-8
7-7A	Gulf Coast Parkway Corridor Alternatives Identified for Further Analysis	7-11
7-7B	Gulf Coast Parkway Corridor Alternative 8	7-12
7-7C	Gulf Coast Parkway Corridor Alternative 14	7-13
7-7D	Gulf Coast Parkway Corridor Alternative 15	7-14
7-7E	Gulf Coast Parkway Corridor Alternative 17	7-15
7-7F	Gulf Coast Parkway Alternative 19	7-16
8-1	Proposed Controlled Access Rural Arterial Typical Sections	8-4
8-2	Proposed Controlled Access High Speed Urban Arterial Typical Section	8-5

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

LIST OF FIGURES

8-3 Proposed Rural Bridge Typical Sections 8-6
8-4 Proposed Urban Bridge Typical Sections 8-7
8-5 Gulf Coast Parkway Alternative Alignment Segments 8-9
8-6A Gulf Coast Parkway Build Alternatives 8-15
8-6B Gulf Coast Parkway Build Alternative Alignment 8 8-16
8-6C Gulf Coast Parkway Build Alternative Alignment 14 8-17
8-6D Gulf Coast Parkway Build Alternative Alignment 15 8-18
8-6E Gulf Coast Parkway Build Alternative Alignment 17 8-19
8-6F Gulf Coast Parkway Build Alternative Alignment 19 8-20
8-7 Wetappo Creek and the Intracoastal Waterway Crossing by Alternatives 8, 14, and 15 8-37
8-8 East Bay Crossing by Alternatives 17 and 19 8-38
8-9 Alternatives 8 and 17 US 231 Flyover 8-42
8-10 Gulf Coast Parkway Intersection Locations 8-45
8-11 US 98 (Tyndall Parkway)/Gulf Coast Parkway (Tram Road) Intersection Configuration 8-49
8-12 US 231/Gulf Coast Parkway (Nehi Road) Intersection Configuration 8-50
8-13 Build Alternatives Involvement with Utility Easements 8-53
8-14 Gulf Coast Parkway Socioeconomic Subareas 8-56
8-15 Gulf Coast Parkway Alternatives Involvement with Incompatible Land Uses 8-63
8-16 Areas Designated Bay County Conservation Zone Lane Use 8-64
8-17 Bay County Ecosystem Management Area Special Treatment Zone 8-66
8-18 Florida Forever Bear Creek Forest Project 8-67
8-19 Other On-going or Proposed Governmental Actions 8-72
8-20 Build Alternatives' Relationship to Bicycle and Pedestrian Projects in the Study Area 8-81
8-21A Locations of Noise Sensitive Receptors in the Mexico Beach Noise Sensitive Area 8-90
8-21B Locations of Noise Sensitive Receptors in the Overstreet Noise Sensitive Area 8-91
8-21C Locations of Noise Sensitive Receptors in the Star Avenue at Tram Road Noise Sensitive Area 8-92
8-21D Locations of Noise Sensitive Receptors in the Nehi/Cherokee Heights Noise Sensitive Area 8-93
8-21E Locations of Noise Sensitive Receptors in the Tyndall Parkway Noise Sensitive Area 8-94
8-21F Locations of Noise Sensitive Receptors in the Lee Road Noise Sensitive Area 8-95

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

LIST OF FIGURES

8-21G Locations of Noise Sensitive Receptors in the North Camp Flowers Road Noise Sensitive Area 8-96
8-22 EFH Locations Associated with Alternatives 17 and 19 8-108
8-23 EFH Locations Associated with Alternatives 8, 14, and 15 8-109
8-24 Aquatic Preserves in the Vicinity of the Gulf Coast Parkway Alternatives 8-115
8-25 Outstanding Florida Watersin the Vicinity of the Gulf Coast Parkway Study Area 8-116
8-26 Coastal Barrier Resource Units 8-117
8-27 Proposed Locations of Build Alternatives' Bridges and Culverts within Class I, Class II and Class III Drainage Basins 8-120
8-28 Gulf Coast Parkway Alternatives' Involvement with Impaired Waters 8-121
8-29 Potentially Contaminated Sites within the vicinity of the Gulf Coast Parkway Alternatives 8-134
8-30 Alternative 15 Involvement with Prime Farmland 8-137
8-31 Wetappo Creek and the ICWW Crossing by Alternatives 8, 14, and 15 8-140
8-32 East Bay Crossing by Alternatives 17 and 19 8-141

GULF COAST PARKWAY
PRELIMINARY ENGINEERING REPORT

ACRONYM LIST

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AFB	Air Force Base
AN	Advanced Notification
APE	Area of Potential Effect
ARPC	Apalachee Regional Planning Council
AST	Aboveground Storage Tank
ASTM	American Society of Testing Materials
BAYL	Bayline Railroad
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practices
CAA	Clean Air Act
CAESR	Corridor Alternatives Evaluation Summary Report
CBIA	Coastal Barrier Improvement Act
CBRA	Coastal Barrier Resources Act
CCA	Clean Air Act
CE	Categorical Exclusion
CEI	Construction Engineering Inspection
CEMO	Central Environmental Management Office
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulators
CLIP	Critical Lands and Waters Identification Project
CO	Carbon Monoxide
CR	County Road
CRAS	Cultural Resource Assessment Survey
CSVH	Conservation Habitation Zone
CSVP	Conservation Preservation Zone
CSVR	Conservation Recreation Zone
CZ	Clear Zone
CZMA	Coastal Zone Management Act
dBA	Decibels (A-weighting)
DDHV	Directional Design Hour Volume
DE	Determination of Effect
DFIRM	Digital Flood Insurance Rate Maps
DHR	Division of Historical Resources
DHT	Design Hour Truck
DHV	Design Hourly Volume
DIH	District In House
DIOH	State 100 Percent Overhead
DL	Dead Load
DOQQ	Digital Ortho Quarter Quad
DOT	United States Department of Transportation

ACRONYM LIST

DRI	Development Regional Impact
DSAP	Detailed Specific Area Plan
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ELR	Environmental Law Review
EMA	Ecosystem Management Area
EO	Element of Occurrence
ERP	Environmental Resource Permit
ESBAR	Endangered Species Biological Assessment
EST	Environmental Screening Tool
ETAT	Environmental Transportation Advisory Team
ETDM	Efficient Transportation Decision Making
FAA	Federal Aviation Administration
FAC	Florida Administrative Code
FDCA	Florida Department of Community Affairs
FDEP	Florida Department of Environmental Protection
FDHR	Florida Division of Historic Resources
FDOT	Florida Department of Transportation
FE	Federally Endangered
FEMA	Federal Emergency Management Agency
FFWCC	Florida Fish and Wildlife Conservation Commission
FHWA	Federal Highway Administration
FIHS	Florida Intrastate Highway System
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Studies
FLUCFCS	Florida Land Use, Cover and Forms Classification System
FLUM	Florida Land Use Map
FMP	Fishery Management Plan
FMRI	Florida Marine Research Institute
FMSF	Florida Master Site File
FNAI	Florida Natural Areas Inventory
FO	Federal Other
FPPA	Farmland Protection Policy Act
FR	Federal Register
FS	Florida Statutes
FY	Fiscal Year
GCP	Gulf Coast Parkway
GIS	Geographic Information System
GMFMC	Gulf of Mexico Fishery Management Council
GOM	Gulf of Mexico
HAPC	Habitat Areas of Particular Concern
HCM	Highway Capacity Manuel
HHS	Health and Human Services
HPP	High Priority Project
ICE	Indirect and Cumulative Effects

ACRONYM LIST

ICWW	Intracoastal Waterway
IDC	Intermodal Distribution Center
IRIS	Integrated Risk Information System
LBMA	Lathrop Bayou Management
LEP	Limited English Progiciency
LOS	Level of Service
LRE	Long Range Estimate
LRFR	Load and Resistance Factor
LRTP	Long Range Transportation Plan
MANLAA	May Affect, But is not Likely to Adversely Affect
MBTA	Migratory Bird Treaty Act
mhw	Mean High Water
MI	Miles
MOVES	Motor Vehicle Emission Simulator
MPA	Metropolitan Planning Area
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MSE	Mechanically Stabilized Earth
MSFCMA	Magnuson-Stevens Fishery Conservation Management
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NATA	National Air Toxics Assessment
NAVD	North American Vertical Datum
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Protection Act
NHD	National Hydrology Dataset
NHW	Normal High Water
NLEV	National Low Emission Vehicle
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination system
NR	National Register
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	Noise Sensitive Areas
NWFBIA	Northwest Florida Beaches International Airport
NWFTCA	Northwest Florida Transportation Corridor Authority
NWFWMD	Northwest Florida Water Management District
NWI	Natural Wetlands Inventory
NWL	Normal Water Level
O^3	Sulfer Oxide ozone
OFW	Outstanding Florida Waters
OGT	Office of Greenways and Trails
ohw	Ordinary High Water
OIP	Office of Intergovernmental Programs

ACRONYM LIST

OPA	Otherwise Protected Area
OTAQ	Office of Transportation and Air Quality
PA	Pascal
PARA	Projected Areas of Potential Affect
PCC	Panama City Crayfish
PD&E	Project Development and Environment
PER	Preliminary Engineering Report
PHF	Peak Hour Factor
PM	Particulate Matter
OTAQ	Office of Transportation Air Quality
REDI	Rural Economic Development Initiative
RFG	Reformulated Gasoline
RFS	Reticulated Flatwoods Salamander
ROD	Record of Decision
ROW	Right-of-Way
RPC	Regional Planning Council
RTP	Regional Transportation Partnership
SAFETEALU	Safe, Accountable, Flexible and Efficient Transportation Equity Act, A Legacy for Users
SAV	Submerged Aquatic Vegetation
SCE	Socio-Cultural Effects
SDG	Structural Design Guidelines
SDL	Superimposed Dead Load
SFHA	Special Flood Hazard Area
SHA	Strategic Habitat Conservation Areas
SHPO	State Historic Preservation Areas
SEIR	State Environmental Impact Report
SIS	Strategic Intermodal System
SJBSBP	St. Joseph Bay State Buffer Preserve
SLD	Straight Line Diagram
SPL	Sound Pressure Level
SR	State Road
SRPP	Strategic Regional Policy Plan
SSA	Source Selection Authority
SSC	Species of Special Concern
SSURGO	Soil Survey Geographic
STIP	Statewide Transportation Improvement Program
SWIM	Surface Water Improvement and Management
SWPPP	Stormwater Pollution Prevention Plan
TBD	To be Determined
TDR	Transfer of Development Rights
TIMP	Transportation Improvement Program Funds
TIP	Transportation Improvement Plan
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy

ACRONYM LIST

TNM	Traffic Noise Model
TPO	Transportation Planning Organization
TRIP	Transportation Regional Incentive Program
TSM	Transportation System Management
UMAM	Uniform Mitigation Assessment Method
USACE	United States Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USDA	United States Department Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VMT	Vehicle Miles Traveled
VPI	Vertical Point of Intersections
WBID	Waterbody Identification
WER	Wetland Evaluation Report
WFRPC	West Florida Regional Planning Council
WQIE	Water Quality Impact Evaluation
WRAP	Wetland Rapid Assessment Procedure
WWTF	Wastewater Treatment Facility
WWTP	Wastewater Treatment Plan

SECTION 1 SUMMARY OF PROJECT

This preliminary engineering report contains detailed engineering information that fulfills the purpose and need for the Gulf Coast Parkway project. The proposed project is a new, ultimately four-lane highway with stormwater treatment, bicycle and pedestrian facilities, including a multi-use trail in rural areas. The proposed highway would provide a new link the transportation network by connecting US 98 in Gulf County with US 231 and US 98 (tyndall Parkway) in Bay County. The proposed facility will be constructed on a combination of new and existing road alignment and will include a new high-leve bridge across the Intracoastal Waterway (ICWW).

1.1 RECOMMENDATIONS

This section contains two types of recommendations. The first recommendation to be discussed is the Florida Department of Transportation (FDOT) recommended alternative. The second type of recommendation is a list of recommendations that the Federal Highway Administration (FHWA) and FDOT are recommendations that FHWA and FDOT have identified as measures that if implemented would be beneficial to the minimization of indirect and cumulative effects (ICE).

1.1.1 FDOT Recommended Alternative

As a result of the public involvement, environmental studies, and interagency coordination, the alternative recommended for Location and Design Concept Acceptance is Alternative 17. Alternative 17 would ultimately provide a four-lane controlled access roadway for 27.9 miles between US 98 in Gulf County and US 231 and US 98 (Tyndall Parkway) in Bay County with a new low level bridges across Cypress Creek, Cooks Creek, and Callaway Bayou and a new 65-foot high level bridge across the ICWW in East Bay (see **Section 2** for specific details on Alternative 17's alignment, typical sections, and proposed bridges).

1.1.2 Other Recommendations

The cumulative effects analysis conducted as part of this study identified potential adverse cumulative effects to sensitive resources that could occur over the twenty year planning period. As a result the FDOT has identified some recommendations for minimizing cumulative adverse effects of forecasted future development. These recommendations are provided below.

What may be useful to those responsible for protecting the state's resources is the creation of regional databases containing information from in ICE analyses. Over time, such a database could determine the accuracy of the methods utilized in conducting indirect and cumulative analysis and in identifying and evaluating impacts with the purpose of taking those that are most effective and providing them to the preparers of these analysis to improve them. The techniques could also be helpful to local planners when evaluating policies and goals of local comprehensive plans or in evaluating the acceptability of proposed development plans.

Data from multiple ICE analyses would permit a state or regional agency to tract impacts to resources on a regional basis and identify when resources may be at risk of reaching a point of no return before such point is reached. The database would also be useful when priorities are reviewed for the purchase of conservation lands.

Greater coordination among local, regional, and state agencies is conducive to establishing a regional approach to meeting needs, such as water supply, and protecting resources. But only local governments with large populations have the resources to implement some of the measures necessary to meeting

regional goals. Therefore, state and regional agencies should work to assist those communities without the necessary resources to obtain grants to implement long-term goals.

Public education is an on-going but vital measure to protecting resources. While the loss of habitat is probably the single most significant impact on a number of resources, there are other effects that are less obvious but equally as damaging, such as nonpoint source pollution. Public awareness of the affect of their actions is but the first lesson. It is important to provide the public with alternatives to their behavior to ensure detrimental behavior is replaced with that more respectful of the environment.

1.2 COMMITMENTS

FDOT has established a commitment compliance program to ensure that commitments made during the project's development are completed during construction. The primary vehicle for ensuring commitments made during the Project Development and Environment (PD&E) phase have been included in the design plans for the contractor is accomplished through FDOT's reevaluation process. The reevaluation process is conducted at each major stage of project development (preliminary engineering, right-of-way acquisition, and construction advertisement) and serves to ensure project compliance with all applicable Federal and state laws. It also provides the mechanism whereby commitments made during the project development process are identified, and updated, if necessary. Any new commitments or laws which may have come into effect since approval of the final environmental document are addressed in the reevaluation. At the construction advertisement phase all relevant commitments have been included in the design plans used by the contractor to construct the project.

1.2.1 Commitment Compliance

During construction verification of the contractor's compliance with the commitments shown on the design plans is documented by Construction Engineering Inspection engineer who inspects the contractor's work during construction.

Steps in FDOT's commitment compliance program are listed below.

- After completion of the PD&E phase of project development, the reevaluation manager sends the approved environmental document that includes the commitments to the Design Project Manager, along with any other pertinent information the Design Project Manager needs to know. This informs the Design Project Manager before the reevaluation phase that the project has commitments to be implemented during design or included in the design plans/contract documents.
- Also after completion of the PD&E phase, FDOT task managers provide FDOT Permit staff with any commitments made during PD&E for inclusion in the Permit Memo to be provided to the project contractor.
- Permit staff request that the design project manager include in the General Notes on the construction plans that there are project commitments that the contractor must follow and those commitments can be found in the Permit Memo.
- The reevaluation process is then used to update the status of commitments and confirm that commitments have been addressed in the project design (if applicable) and included in the design plans/contract documents (if applicable). The reevaluation process is also used to finalize any pending coordination that required the design plans to fully document impacts to finalize any mitigation/avoidance measures deemed appropriate by the jurisdictional agency (United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), National Marine Fisheries Service (NMFS), etc.)

- During construction the Construction Engineering Inspection engineer provides feedback on and documentation that commitments required of the contractor were implemented. This feedback, including correspondence and photographs, is kept in a commitment implementation file.
- SharePoint and Project Suite are used to post commitments and commitment-related documents in the plan.

1.2.2 Specific Commitments

The FDOT has identified the following commitments with regard to the proposed transportation improvement project by which it will adhere:

Socioeconomics, Communities and Neighborhoods

The extent of potential construction effects will depend largely on the alternative selected. In any case, FDOT's *Standard Specifications for Road and Bridge Construction* and Best Management Practices (BMP) will be utilized to reduce noise, traffic delays, air quality impacts and other issues that would impacts resident's quality of life. Types of measures that would be implemented are discussed in more detail below, but could include storage of materials out-of-site, coordinating with public service and utility providers to minimize disruption in the delivery of services, confining work to daylight hours, minimizing fugitive dust, requiring noise controls on equipment, and implementing a traffic control plan to minimize possible delays.

Relocations

FDOT will carry out a right-of-way acquisition 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 FDOT'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. This project has been developed in accordance with the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968, and in accordance with Executive Order 12898.

Cultural Resources

State Historic Preservation Officer (SHPO) requested an underwater cultural resources survey be conducted after the selection of a preferred alternative. A maritime archaeology desktop evaluation has been conducted of a 1,000 foot buffer at locations where the project alternatives cross a perennial water body. This study concluded that Alternatives 8, 14, and 15 had a low potential for submerged cultural resources but that Alternatives 17 and 19 had a moderate probability for submerged cultural resources due to their crossing at East Bay and the history of marine traffic in the area. Therefore, the study recommended that if Alternatives 17 or 19 were selected as the preferred alternative, a remote-sensing survey should be conducted at the crossing of East Bay. No further investigations for Alternatives 8, 14, and 15 were recommended.

Since Alternative 17 has been identified as the recommended preferred alternative, FDOT is proceeding with an underwater survey of the proposed crossing of East Bay. The results of this survey, including the SHPO's concurrence with the findings, will be documented in the Final Environmental Impact Statement (EIS).

Utilities

Much of the project is on new alignment, but in areas where existing roads are incorporated into the project, utilities could be affected by some construction activities such as earth moving and pile driving. As a result, there may be a need to temporarily re-route utility lines or cables. Such relocations of utility lines and cables may result in intermittent and short-term interruption of service. Prior to construction, coordination will be conducted with utility providers to minimize any disruption in service.

Railroads

FDOT will coordinate with the Bay Line Railroad to ensure that the Gulf Coast Parkway crossing of the railroad meets clearances, geometrics, utilities, provisions for future tracks, and maintenance road requirements for off-track equipment.

FDOT will notify the Bay Line Railroad in advance of pending construction activities in the vicinity of the railroad during project's construction.

Air Quality

The project is in an area that has been designated by the United States Environmental Protection Agency (USEPA) as attainment for all the National Ambient Air Quality Standards (NAAQS). Therefore, the transportation conformity rule (40 Code of Federal Regulations (CFR) Part 93) does not apply. However, the FDOT is aware of the proposed USEPA rule change. The potential for air quality impacts under the revised rules will be reevaluated during design once the rule changes are finalized and Bay County has established air quality standards

The air quality effect of highway construction activities will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of other controlled materials in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*.

Noise and Vibration

A land use review will also be implemented during the design phase to identify noise sensitive sites that may have received a building permit subsequent to the noise study, but prior to the date of public knowledge (i.e., date that the environmental document has been approved by the FHWA. If the review identifies noise sensitive sites that have been permitted prior to the date of public knowledge, then those noise sensitive sites will be evaluated for traffic noise impacts and abatement considerations.

Noise and vibration effects may result from heavy equipment movement and construction activities, such as bridge pile driving and vibratory compaction of embankments. Construction noise and vibration sensitive sites adjacent to the project include: schools, churches, eye centers, medical centers, and residences. For these sensitive sites the application of the FDOT *Standard Specifications for Road and Bridge Construction* will minimize or eliminate most potential construction noise and vibration impacts. However should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in concert with the District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

Noise and vibration effects on fish from pile driving may be managed with one of the following measures:

1) Use of wood or concrete piles instead of hollow steel piles.
2) If using hollow steel piles, restrict their installation to a time of year when larval and juvenile stages of fish species with designated Essential Fish Habitat (EFH) are not present; drive piles during low tide periods when located in intertidal and shallow subtidal areas; use a vibratory hammer as much as possible; monitor peak Sound Pressure Level (SPLs) during pile driving to ensure that they do not exceed the 190 dB re 1PA threshold for injury to fish; employ measures to attenuate sound should SPLs exceed 180 dB re 1 PA (i.e. air bubble curtain system or air-filled coffer dam, use of a smaller hammer, and use of a hydraulic hammer if impact driving cannot be avoided); and drive piles when the current is reduced in areas of strong current.
3) Use of the construction technique called "ramping up" which requires the contractor to use soft-start procedures where the hammer is not used at full strength at the start of a pile driving session.

The need for these measures will be further evaluated during the project's design and special provisions may be added to the project's construction specifications, as appropriate.

Wetlands

During the project design phase, jurisdictional wetlands will be field-delineated. These detailed assessments may facilitate further reductions in potential wetland involvement through minor shifts in alignment, if practical.

Mitigation will be required for direct and indirect wetland impacts. At this point in project development, FDOT is not prepared to state definitely how impacts to wetlands will be mitigated due to the varying types and locations of resources that could be impacted. It is unknown as to the degree, type, or location of mitigation that will be required until permitting requirements for the Preferred Alternative are evaluated. However, it is anticipated that wetland impacts which result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S. to satisfy all mitigation requirements of Part IV. Chapter 373, F.S. and 33 U.S.C. s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements.

A critical aspect of securing wetland mitigation concerns the amount, type, and timing of wetland impacts. Wetland involvement associated with the Gulf Coast Parkway project is contained within the St. Andrews-St. Joseph Bays watershed (hydrologic unit = 03140101; "subject watershed"). At this stage of the project, i.e., PD&E level, potential wetland involvement has been estimated based upon desktop analyses and field reconnaissance/assessments (Uniform Mitigation Assessment Methodology {UMAM} functional loss scores ranged between 203 and 349). According to data housed and maintained by the United States Army Corps of Engineers (USACE) Regulatory In-lieu fee and Bank Information Tracking System (http://geo.usace.army.mil/ribits/index.html; accessed March 9, 2012) and the Northwest Florida Water Management District (NWFWMD) Wetland Programs websites (http://www.nwfwmdwetlands.com/index.php?Page=11; accessed March 9, 2012), it appears that four existing private mitigation banks (Breakfast Point, Devils Swamp, Sweetwater, Nokuse) and seven NWFWMD/umbrella bank sites (Sandhill Lakes, Wards Creek, Wards Creek West, Cat Creek, Devil's Hole, Point Washington, Lynn Haven,) have service areas that include the subject watershed. In addition, one proposed private mitigation bank (Bear Creek) includes the subject watershed in its service area. As of March 9, 2012, the 11 existing mitigation banks/sites identified above collectively have approximately 600 palustrine wetland credits currently available. None of these existing banks/sites appear to provide estuarine credits.

Construction activities have the potential for short-term, temporary impacts on wetlands. FDOT will address the potential effects of construction activities on wetlands in accordance with FDOT's most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMPs at wetland, bay and stream crossings. Some typical measures include the covering stockpiled materials; locating staging and stockpiling areas sufficiently distant from surfaces waters; limiting the area of exposed soil at any given time during construction; controlling erosion and sedimentation through mulching, matting, and netting; use of filter fabric fencing to prevent sediment from leaving the construction site; placement of rock entrance mats to reduce tracking of dirt from construction vehicles; use of sediment traps and ponds and installation of swales and ditches to intercept runoff; and regular site maintenance to prevent the accumulation of debris. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions.

Essential Fish Habitat

As requested by the National Marine Fisheries Service (NMFS), if Alternative 17 or 19 are selected, an additional seagrass survey during the June-August prime growing season will be completed prior to construction.

Mitigation will be required for direct and indirect impacts to wetlands associated with EFH (emergent marsh). At this point in project development, FDOT is not prepared to state definitely how impacts to these wetlands will be mitigated due to current lack of any existing mitigation banks with estuarine credits. However, if at the time of permitting there are still no mitigation banks with estuarine credits, out-of-kind credits will be utilized with regulatory agency approval. Therefore, it is anticipated that wetland impacts which result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S. to satisfy all mitigation requirements of Part IV. Chapter 373, F.S. and 33 U.S.C. s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements..

Construction activities could have short-term, temporary impacts on EFH, such as increased sediment loads in stormwater runoff from the construction site and increased turbidity during in-water work. Both of these contribute to impacts on benthic aquatic habitats.

The contractor shall be required to develop, implement and adhere to a "marine resource protection plan" to ensure that marine resources within and outside of the right-of-way are not damaged by construction activities. This plan may involve strategies such as marking off adjacent marine resources outside of the proposed project's alignment with buoys, so that construction related boat traffic does not affect adjacent marine resources, i.e., emergent vegetation, seagrass, etc., and barges are not moored directly on or over marine resources. Consideration should be taken to implement strategies to reduce impacts to the existing EFH resources, where possible. For instance, depending on the specific construction activities chosen for this area, some debris (concrete and woody debris) associated with oyster resources may need to be removed for public safety considerations. Impacts such as these should be considered in the overall proposed methodology.

Appropriate construction controls and BMP will be implemented to ensure protection of marine resources. Construction BMPs should incorporate, but not be limited to: working within adjacent areas devoid of marine resources, instituting BMP to reduce direct impacts to emergent marsh systems, adequate turbidity controls, utilizing vessels that can operate in depths adequate enough to not scour or prop scar the marine sediments/resources, continual monitoring for presence of wildlife species in the work area, and removal of all construction debris and equipment at completion of the project.

Although not anticipated, if explosives should be utilized during construction activities, then the *Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* should be implemented. The Manatee Construction Conditions set forth by the FFWCC and the USFWS must be followed throughout a construction process. Monitoring for such species shall be conducted throughout the construction process to ensure BMP are being followed.

Since it has been determined the project "may affect" EFH resources, the FDOT intends to reinitiate consultation with NMFS for these resources after the public hearing and during development of the final National Environmental Policy Act (NEPA) document (or final design and permitting of the project) once all agency and public comments have been received and evaluated and a preferred alternative has been selected. At that time NMFS will work with the FDOT to minimize the projects impacts to EFH resources. If for some reason consultation must be reinitiated during final design and permitting, FDOT will complete all consultation and document compliance in a subsequent project reevaluations prior to the project beginning construction. Consistent with 23 CFR 771.133, completion of consultation at a later phase of project development is a commitment by FDOT.

Water Quality

The proposed stormwater facility design will include, at a minimum, the water quantity requirements for water quality impacts as required by the NWFWMD in Rule 40A-1, 40A-4, 62-4, 62-341, 62-346, the Florida Department of Environmental Protection (FDEP) Rules 62-312 and 62-25 Florida Administrative Code (FAC) and the USEPA. Therefore, no further mitigation for water quality impacts will be needed.

Construction activities have the potential for short-term, temporary impacts on water quality. FDOT will address the potential effects of construction activities on water quality in accordance with FDOT's most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions.

Floodplains

The detailed hydraulics for this crossing will be evaluated during the design phase when topographic survey is obtained. At that time, Federal Emergency Management Agency (FEMA) No-Rise procedures will be followed including proper coordination with Bay County staff. The procedures require using water-surface profile computer modles to ensure that no water surface increase is created by the proposed bridge and embankment. Given a no-rise situation, Floodway Map or Flood Insurance Study revisions will not be required.

Wildlife and Habitat

Wildlife passages may be provided to reduce habitat fragmentation and limit roadway mortality. Wildlife passages would be installed in appropriate locations in accordance with FDOT *Wildlife Crossing Guidelines* (see Appendix B of the Endangered Species Biological Assessment Report {ESBAR}).

Specific minimization measures and commitments have been included in the ESBAR reviewed by the resource agencies. Any measures not included in the initial submittal of the ESBAR were added to the subsequent revision. The complete set of mitigation and/or protection measures identified for consideration include:

- A Phase II Reticulated Flatwoods Salamander (RFS) field evaluation for a representative sample of potential ponds within 1,500 feet of the preferred alternative.
- Supplemental seasonal surveys will be conducted to determine accurate and current impacts to listed species.

Potential measures and commitments under consideration include:

- Conducting pre-construction surveys at appropriate times for listed species to enhance assessments concerning location and population status. For example, since gopher tortoise burrows and habitat found within alternative alignments and associated 300-foot buffers may be impacted, FFWCC Gopher Tortoise Permitting Guidelines pertaining to surveying, excavating, and relocating will be followed once a preferred alternative is selected.

- If seasonally-appropriate surveys for federally-listed plants potentially associated with the preferred alternative are conducted, the project sponsor will also consider and avoid potential impacts to state-listed plants, where practical.

- Avoiding potential impacts to manatees. Depending upon the methodology used for bridge installation, potential protection measures could include stopping work if a manatee comes within a specified distance of in-water work, posting observers to watch for manatees, and/or monitoring turbidity barriers for potential entanglement. *Standard Manatee Conditions for In-Water Work, 2011*, developed by the FFWCC and the USFWS will be followed, as necessary. If explosives are to be utilized, then the *Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* will also be implemented.

- Minimizing direct/indirect wetland impacts, e.g., sedimentation, by utilizing appropriate stormwater design and BMPs at wetland and stream crossings during constructions. Regulatory agencies will have the opportunity to review 60 percent plans that will include proposed design for crossing structures via the joint Environmental Resource Permit application. The 60 percent plans submitted with the Environmental Resource Permit application will also contain a design erosion control plan that will be subject to regulatory agency review and comment. Design plans will follow the NWFWMD regulations requiring that an operating permit be obtained for the constructed stormwater facilities.

- Per the suggestion of the USFWS, a survey for bald eagle nests within the Preferred Alternative and associated buffers will be conducted one year prior to construction.

- Implementing *Standard Protection Measures for the Eastern Indigo Snake* during construction.

- Implementing *Construction Special Provisions Gulf Sturgeon Protection Guidelines* during bridge construction.

- Utilizing “sea turtle friendly” lighting strategies on bridges, if deemed necessary.

- Conducting a Phase II RFS field evaluation for a representative sample of potential ponds within 1,500 feet of the preferred alternative during design and permitting. A re-assessment of the Determination of Effect will be based on the results of the Phase II field evaluation.

- Facilitating movement of black bears via wildlife crossings, if deemed necessary.

- Utilizing signage informing motorists of potential wildlife hazards, e.g., deer and bear crossings, if deemed necessary.

- Invasive/exotic species will be managed and controlled in accordance with FDOT's *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The contractor will be required to monitor turf areas and remove all competing vegetation, pest plants and noxious weeds as listed by the Florida Exotic Plant Pest Council, Category 1 *List of Invasive Species*. Insecticides and herbicides used to control invasive/exotic species will be approved by the Florida Department of Agriculture.

- The following Reasonable Assurance measures, as previously described in Section 4.3.14 will be met, for any Federal species that holds a "may affect" determination at this point.

    - The FDOT has determined the project "may affect" the _____. The FDOT intends to reinitiate consultation with the Service for the _____ (pursuant to section 7 of the Act, as described in 50 CFR § 402.14) after the public hearing and during development of the final NEPA document (or final design and permitting of the project) once all agency and public comments have been received and evaluated and a preferred alternative has been selected. At that time the Service will work with the FDOT to minimize the projects impacts to the _____. Satisfaction of all Section 7 consultation requirements will occur and be document in the final NEPA document. If for some reason consultation must be reinitiated during final design and permitting, FDOT will complete all Section 7 consultation and document compliance in a subsequent project reevaluations prior to the project beginning construction. Consistent with 23 CFR 771.133, completion of Section 7 consultation at a later phase of project development is a commitment by FDOT.

Contamination

The State of Florida has evaluated the proposed right-of-way and has identified potentially contaminated sites for the various proposed alternatives. Sites having medium or high risk of contamination concerns will be re-evaluated prior to construction. If required, a Level 2 investigation will be performed to verify the type and extent of contamination present. Based on the findings of the updated file review and/or Level 2 investigation, the design engineers may be instructed to avoid the area(s) of concern or to include Special Provisions with the design plans. Actual cleanup will take place prior to construction, if feasible

Procedures specifying the contractor's responsibilities in regard to encountering petroleum contaminated soil and/or groundwater are set forth in the FDOT's *Standard Specifications for Road and Bridge Construction*. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, prior to construction.

Navigation

Should the bridge construction require in-water work, there could be a potential for conflicts between construction activities and vessels on the waterway. Activities that could result in blockage of a channel or interrupt traffic flow are required to obtain authorization from the United States Coast Guard (USCG). FDOT *Standard Specifications for Road and Bridge Construction* requires under Section 103-1.3 that the USCG be provided 60 days in advance with drawings showing the location of temporary work structures relative to the navigable waterway, lighting on the temporary work structures that meets the USCG requirements, and notification to mariners of construction in or near the navigation channel. These

measures should be sufficient to minimize conflicts between bridge construction activities and vessels navigating the either the ICWW through East Bay or the ICWW/Wetappo Creek.

FDOT will work closely with the USCG to ensure that this project meets all navigational requirements and that the bridge is constructed in a manner that will meet the needs of waterway users. FDOT will meet with the USCG to explain in more detail its plans concerning the bridge and to fully accommodate USCG requirements. FDOT will utilize Section – 103-1.3 of the *Standard Specifications for Road and Bridge Construction* to minimize conflicts between construction activities and waterway users.

Maintenance of Traffic

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 road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related activities, which could excessively inconvenience the community so that motorists, residents, and business persons can make other accommodations. A sign providing the name, address, and telephone of a Department contact person will be displayed on-site to assist the public in obtaining immediate answers to questions and logging complaints about project activity. All provisions of the FDOT's *Standard Specifications for Road and Bridge Construction* will be followed.

Maintenance of Access

Access to all businesses and residences will be maintained to the extent practical through controlled construction scheduling. In the County Road (CR) 386 area from US 98 to Overstreet, along State Road (SR) 22, and at the intersections of the Gulf Coast Parkway with US 98 in Gulf County, with US 98 (Tyndall Parkway), and with US 231, the present traffic congestion may become worse during stages of construction where narrow lanes may be necessary. Traffic delays will be controlled to the extent possible where many construction operations are in progress at the same time. The contractor will be required to maintain two lanes of traffic in each direction along CR 386 and SR 22 and at the project's intersection with US 98 in Gulf County, with US 98 (Tyndall Parkway), and with US 231 at all times and to comply with the BMP of FDOT.

Construction Staging

In addition to the construction of the road and bridges associated with the project, there will be the need to have construction staging areas in the vicinity of each project phase as it goes to construction. Construction staging areas are used for the delivery and storage of construction materials and equipment, contractor offices, and employee parking. These areas vary in size, depending on the size of the construction operation, and may require grading or excavation to level the site, install drainage improvements, and connect utilities. In addition, temporary driveways would be established from access roads to the staging area. Temporary erosion and sediment control measures would be used to prevent runoff of untreated stormwater and sediment from entering nearby wetlands or water bodies, or adjacent properties. After construction has been completed, staging areas would be stabilized, landscaped, or restored and utilities disconnected in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*.

Disposal of Unsuitable Materials

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. Demucking is anticipated at most of the wetland sites and will be controlled by Section 120 of the FDOT's *Standard Specifications for Road and Bridge Construction*. Disposal will be on-site in detention areas or off-site. The removal of structures and debris will be in accordance with local and state regulation agencies permitting this operation. The contractor is responsible for his methods of controlling pollution on haul roads, in borrow pits and other materials pits, and in areas used for disposal of waste materials from the project. Temporary erosion control features, as specified in the FDOT's *Standard Specifications for Road and Bridge Construction*, Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

SECTION 2 INTRODUCTION

The Gulf Coast Parkway Project, Project Development and Environment (PD&E) Study is an analysis to identify the best location for the proposed roadway and to determine what impacts the roadway will have on the natural, social, and physical environment.

2.1 PURPOSE

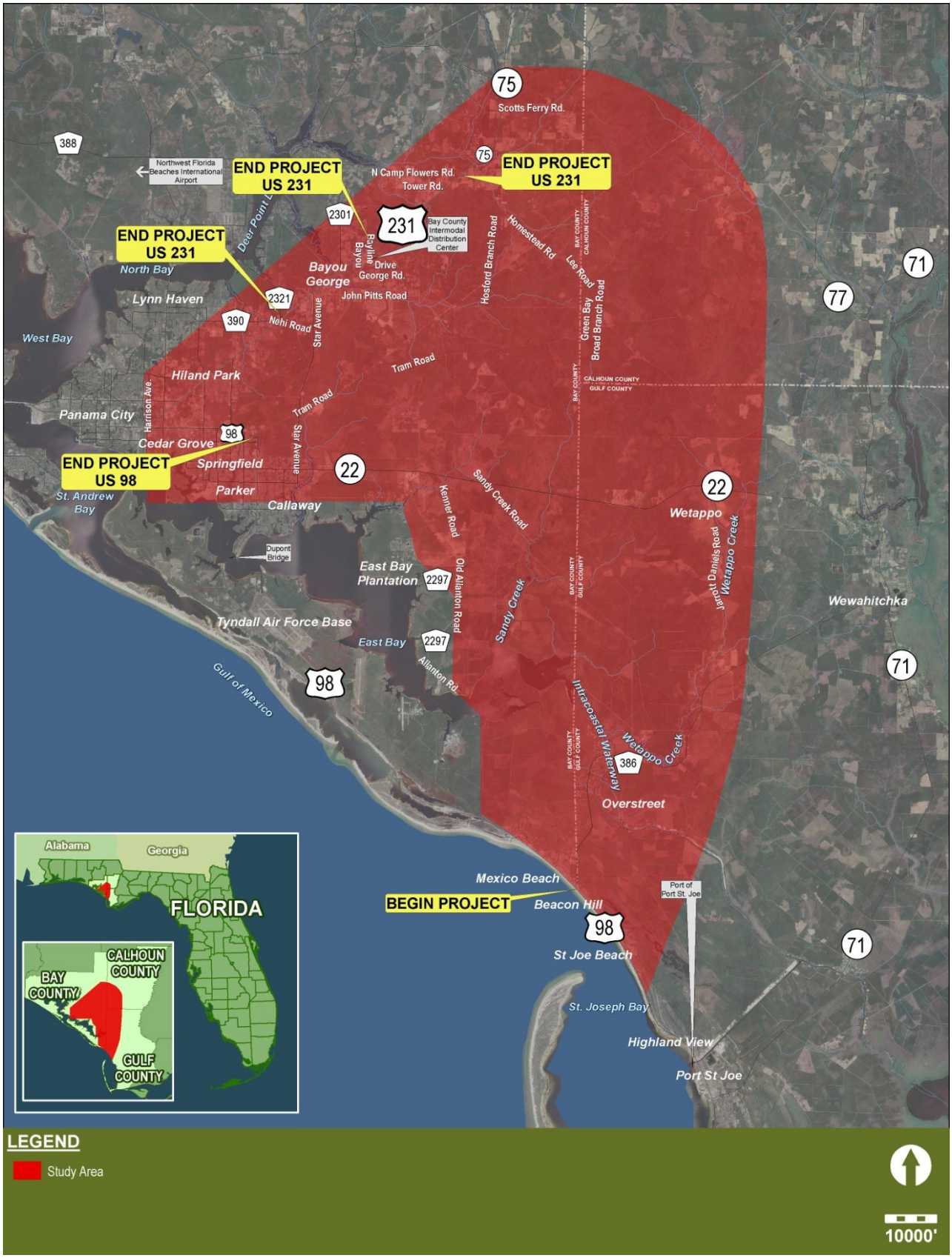
This Draft Preliminary Engineering Report (PER) is one of a series of reports prepared as part of the PD&E Study for the proposed Gulf Coast Parkway project in Gulf, Bay, and Calhoun Counties, Florida. Incorporated in this PER are the engineering data and analysis used to define the alternative project concepts, including design controls and standards, alignments, typical sections, and access control features. The PD&E Study satisfies the requirements of the National Environmental Policy Act (NEPA) and other federal requirements of the Federal Highway Administration (FHWA), the lead federal agency.

2.2 PROJECT DESCRIPTION

The proposed Gulf Coast Parkway is a new 4-lane roadway functionally classified as a major rural arterial that would connect US 98 at the intersection of County Road (CR) 386 in Mexico Beach, Gulf County to US 231 and US 98 (Tyndall Parkway) in Bay County (see Figure 2-1). The roadway will be located on both new and existing road alignments within a 168-foot to 250-foot wide right-of-way with class III controlled access, functional classification. The roadway's interim construction would be a two-lane undivided roadway, however; the right-of-way widths will allow for expansion of the road to a four-lane, divided roadway, for the design year traffic demands. In the rural areas the proposed 250-foot right-of-way width will accommodate the construction of a 12-foot wide multi-use trail. In the urban areas, a curb and gutter section with bike lanes and paved sidewalks will be constructed.

The study will also include the a new high level crossing of the Gulf Intracoastal Waterway (ICWW), a new intersections with State Road (SR) 22 and at US 98 (Tyndall Parkway) for all alternatives, and an interchange at US 231 for Alternatives 8 and 17. The project is approximately 30 to 36 miles in length, depending on the alternative.

Figure 2-1: Project Location Map and Project Area



SECTION 3 NEED FOR IMPROVEMENT

The Federal Highway Administration (FHWA), in cooperation with the Florida Department of Transportation (FDOT), is considering the addition of a new link in the transportation network of the central Panhandle of Florida. This new link, known as the Gulf Coast Parkway, would provide a connection between US 98 in Gulf County and US 231 and US 98 (Tyndall Parkway) in Bay County, Florida (previously shown in **Figure 2-1**). The purpose for the Gulf Coast Parkway is to:

- Enhance economic development in Gulf County through provision of direct access to major transportation facilities (regional freight transportation routes and intermodal facilities); improved mobility; and direct access to tourist destinations in south Gulf County.
- Improve mobility within the regional transportation network by providing a new connection to existing and future transportation routes consistent with the Bay County Long Range Transportation Plan (LRTP) and the Gulf County Comprehensive Plan.
- Improve security of the Tyndall Air Force Base (AFB) by providing a shorter detour route.
- Improve hurricane evacuation for residents of coastal Gulf County by providing an additional evacuation route.

It should also be noted that the upgrading of existing facilities does not meet any of the needs listed above as it does not provide direct access to major transportation facilities, does not provide new connections consistent with the regional transportation network of the Bay County LRTP, does not provide a shorter detour route for Tyndall AFB and does not provide additional evacuation route options. However, in addition to the LRTP and the *Gulf County Comprehensive Plan*, the Build Alternatives would be consistent with Gulf County's *Strategic Plan*; the *Port of Port St. Joe Master Plan*; the Florida Alabama, Okaloosa-Walton, and Bay County Transportation Planning Organizations' (TPO) *Regional Freight Network Plan Highways of Commerce*, and the Northwest Florida Transportation Corridor Authority (NWFTCA) *2013 Master Plan*

3.1 NEED FOR THE PROJECT

The need for the project arose initially from the depressed economic conditions in Gulf County, Florida. As the concept of improving the transportation network as an economic stimulus for the County was investigated, it became apparent that additional needs could be addressed by the proposed facility. These needs included the relief of congestion on existing roads within the network, improving the security of Tyndall AFB, improving travel times to work and shopping, and enhancing hurricane evacuation. In order to evaluate alternatives that would be proposed to satisfy these needs, objectives were developed for each need that would provide a measure of the success each alternative could be expected to achieve in addressing the project needs. The project needs and objectives are discussed below.

3.1.1 Enhance Gulf County's Economic Competitiveness

The need for economic development within the study area, and especially in Gulf County, has been made evident by the inclusion of Gulf County in the Northwest Rural Area of Critical Economic Concern. The Florida Department of Economic Opportunity defines Rural Areas of Critical Economic Concern as "rural communities, or a region composed of rural communities that have been adversely affected by extraordinary economic events or natural disasters"[1]. This designation, created by executive order of the Governor of Florida, establishes the so designated region as a priority assignment for Rural Economic

[1] http://www.floridajobs.org/business-growth-and-partnerships/rural-and-economic-development-initiative/rural-areas-of-critical-economic-concern, accessed 6/26/13.

Development Initiative (REDIs) agencies and allows the Governor to waive criteria for any economic development incentives. The Northwest Rural Area of Critical Economic Concern consists of Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Liberty, Wakulla and Washington counties and the City of Freeport in Walton County.

As a result of this classification, several organizations are in place to promote economic development activities in the northwest region of Florida. These include Opportunity Florida, Enterprise Florida, and Florida's Great Northwest, Inc. Each of these partnerships is focused on providing economic development initiatives and supporting activities that create economic advantages in the region; although, Opportunity Florida is more narrowly focused on those counties within the Northwest Florida Rural Area of Critical Economic Concern.

The Gulf Coast Parkway would also serve as a connection to Strategic Intermodal System (SIS) throughout the region, such as the Northwest Florida Beach International Airport (NWFBIA), the Port of Panama City Intermodal Distribution Center, currently under construction, and the (future) Port of Port St.Joe. The Port of Port St. Joe Master Plan has identified the Gulf Coast Parkway as an important connector to I-10 and to mentioned intermodal facilities. In addition, the Gulf Coast Parkway has been identified by the NWFTCA in the 2013 update of its Master Plan and by the Florida – Alabama, Okaloosa – Walton and Bay County Transportation Planning Organization (TPOs) in their *Regional Freight Network Plan Highways of Commerce* as a future highway of commerce. The designation of the Gulf Coast Parkway as a future highway of commerce is based on its ability to provide a "higher speed, more efficient alternative to congested areas and moreover would divert through freight traffic away from older, highly urbanized areas not appropriate for heavy truck volumes."[2]

Reduce Travel Times to Employment Centers in Bay County

The US Bureau of Labor Statistics reports that between 2000 and 2010 the unemployment rate in Bay and Gulf Counties increased by approximately five percent to ten percent. The Gulf Coast Parkway would reduce travel times to employment centers in Bay County providing greater job opportunities for those residents of Gulf County that have suffered from the increased unemployment rates in the county. These employment centers largely reside in the Central Business District located in the downtown area of Panama City which is the largest municipality in the study area region.

Improve Access between Enterprise Zones and US 231

Among the efforts to improve economic conditions in Gulf County is the establishment of enterprise zones. An Enterprise Zone is an impoverished area in which businesses are exempt from certain taxes and are given other economic advantages as an inducement to locate there and employ residents. Within the project study area, enterprise zones have been designated along US 98 from south of the City of Port St. Joe to County Road (CR) 386, and along CR 386 from US 98 to the Overstreet area. Improved access between these enterprise zones and US 231 provided by the Gulf Coast Parkway would encourage development in these areas and contribute to Gulf County's economic growth initiatives. Additionally, growth in both the Enterprise Zones as well as the other areas where the Gulf Coast Parkway is proposed through Gulf County is consistent with the county's future growth plans. The Gulf County Strategic Plan (2006-2011) identifies enhancing and improving the regional transportation system among its goals to expand and diversify its economy and employment opportunities. Among the strategies identified to achieve this goal is the strategy of supporting the Gulf Coast Parkway.

[2] West Florida Regional Planning Council, URS, and DRMP, *Regional Freight Network Plan Highways of Commerce*, 2010, p. 5-6.

Provide a More Direct Route from South Gulf County to US 231 and Freight Transfer Facilities in Bay County

According to the *Regional Freight Management Plan Highways of Commerce*, the Port of Panama City's Intermodal Transfer Facility is intended to function like an inland port[3]. As such, it is a major economic center. The Gulf Coast Parkway would provide a direct connection from south Gulf County to US 231 and the freight transfer facilities at the Port of Panama City Intermodal Distribution Center. This improved connection would be especially beneficial to the Port of Port St. Joe. Consistent with Chapter 311 Florida Statues (Florida Seaport Transportation and Economic Development Program), the Port of Port St. Joe is in the process of reactivating waterborne commerce at the port to bring in shippers, manufacturers, and support industries that will create well-paying jobs so badly needed by the community and the region. Among the objectives and policies of the Port St. Joe Port Master Plan 2013 is Objective 2.3 Highway Access and Connectivity. In this objective the Port Authority shall collaborate with local and state agencies to develop the intermodal connections needed for the efficient movement of goods to and from its facilities. Policy 2.3.2 Off-Port Highway Improvements includes working with the FDOT to gain funding for any needed improvements to roads, including the Gulf Coast Parkway, over which Port truck traffic must travel. The Port St. Joe Port Authority and the Gulf County Board of County Commissioners have further indicated the critical role the Gulf Coast Parkway plays in the Port's reactivation.

The Gulf Coast Parkway would provide a symbiotic benefit to both the Port of Panama City's Intermodal Distribution Center and the Port of Port St. Joe. The improved linkage provided by the Gulf Coast Parkway to the Bay County Intermodal Distribution Center would expand the variety of economic development opportunities that could occur in Gulf County and improve access to and from the Port of Port St. Joe, making it more attractive to potential users by expanding the available methods of distributing goods to markets. The improved access between the Port of Port St. Joe and US 231 to I-10 and the Port of Panama City Intermodal Distribution Center would make the Port of Port St. Joe more attractive to potential users of the port facilities who, without the Gulf Coast Parkway, would be required to utilize the two-lane State Road (SR) 71 to reach I-10. To access the Port of Panama City Intermodal Distribution Center, freight haulers would be required to travel either SR 71 to Wewahitchka, to access the two-lane SR 22 to reach the two-lane rural CR 2315 (Star Avenue) in Callaway to travel north to US 231 and on to the Intermodal Distribution Center; or alternately, travel the two-lane US 98 (Tyndall Parkway) through the coastal communities in Gulf County and southeastern Bay County, through the Tyndall AFB, and continuing on the congested four-lane segment of US 98 (Tyndall Parkway) through the communities of Parker, Springfield and Callaway to reach northbound urban streets connecting to US 231. The more variety in the goods distributed through the Port of Port St. Joe, the greater the potential usage of the Intermodal Distribution Center.

Provide a More Direct Route from South Gulf County to the Northwest Florida Beaches International Airport

The Northwest Florida Beaches International Airport (NWFBIA) is a part of Florida's SIS. New roadways connecting to SIS facilities provide enhanced access to economic markets, thereby supporting economic competitiveness. Gulf County would benefit from the linkage provided by the Gulf Coast Parkway to the airport and other intermodal freight facilities because it would increase the access to goods being shipped via these locations. In addition, the Port of Port St. Joe would become more attractive to potential users through improved connections to I-10 and to intermodal facilities via the Gulf Coast

[3] West Florida Regional Planning Council, URS, and DRMP, *Regional Freight Network Plan Highways of Commerce*, 2010, p. 5-6.

Parkway. The improved access would likely increase the Port's opportunity to expand its facilities to attract clients servicing global markets.

Provide a More Direct Route for Tourists Traveling US 231 to South Gulf County

Gulf County must compete with Bay County for tourist dollars. Bay County has an estimated seven million people visit their beaches annually. While Gulf County does not experience the same level of tourism that Bay County has, its "economy is so dependent on their tourist population any reduction in the tourist population would have negative impacts to the overall economic health of the County"[4].

Access to Gulf County beaches is mostly by US 231 to US 98 (Tyndall Parkway); then through the communities of Springfield, Callaway, and Parker; across the Intracoastal Waterway (ICWW); and finally through the Tyndall AFB Reservation to the desired destination. An alternate but little used route is the two-lane State Road (SR) 71 or SR 71/CR 386, depending on the destination. A new, more direct route bypassing the congested sections of US 231 and US 98 (Tyndall Parkway) and allowing for higher travel speeds would make the Gulf County beaches a more desirable destination, especially for tourists utilizing US 231.

The Gulf Coast Parkway will also provide a direct route to south Gulf County recreational resources along the coast. Please refer to **Figure 3-1** for parks and recreation sites located within the study area and in south Gulf County. Additionally, the improved connection between the NWFBIA and Gulf County would also make the coastal communities more accessible and appealing for tourists.

3.1.2 Improve Mobility and Connectivity within the Regional Transportation Network

The *Regional Freight Network Plan Highways of Commerce* notes that trucks accounted for 93 percent of the region's freight movements[5]. At the same time the report notes that Bay County's freight issues include problems or needs such as chronic delays by congestion (especially seasonal traffic), capacity constraints, chokepoints, impeding heavy vehicles, better access to specific sites, and/or safety problems, including those due to the incompatibility of truck traffic with the surrounding area[6].

The proposed project would provide a new link in the regional transportation network. Gulf Coast Parkway would connect with other regional transportation facilities, like Tyndall Parkway, and relieve congested segments of existing roadways, like US 98. Gulf Coast Parkway would also improve access within the region by providing connections to other regional facilities such as the Bay County Intermodal Distribution Center, the NWFBIA, The Eastern Shipyard, and the Port of Port St. Joe. It would also route through freight traffic away from incompatible land uses in the congested urban area

In addition, the proposed project includes a provision for a shared use path along the rural typical section and a bike lane and sidewalks along the urban typical section. These facilities would provide a another mobility option that is not currently present and is consistent with state policy (Section 335.065 F.S.) requiring the provision of bicycle and pedestrian facilities in conjunction with construction, reconstruction, or other change of any state transportation facility.

---

[4] Gulf County, *Evaluation and Appraisal Report*, 2007, p. 2-3.

[5] West Florida Regional Planning Council, URS, and DRMP, *Regional Freight Network Plan Highways of Commerce*, 2010, p. 3-14.

[6] West Florida Regional Planning Council, URS, and DRMP, *Regional Freight Network Plan Highways of Commerce*, 2010, p. 2-7.

Figure 3-1: Park and Recreation Sites within the Study Area and in South Gulf County

Reduce Congestion on the Tyndall Parkway (US 98)

The US 98 (Tyndall Parkway) north of the Tyndall AFB Reservation, currently operates at Level of Service (LOS) F, LOS C is the established accepted standard for this roadway. The addition of the Gulf Coast Parkway to the regional transportation network will benefit US 98 by providing an alternative roadway to relieve traffic congestion along this roadway and therefore improving the LOS at which the roadway currently operates. The Gulf Coast Parkway will also extend the time before improvements on the existing network are needed by transferring some of the through traffic to a new road with added capacity, providing a more balanced highway network.

Provide Future Traffic Capacity between South Gulf County and Bay County

Prior to 1990, Gulf County experienced slow, but steady population growth at a rate of around 6 percent. However, between the 1990 and 2000 census, Gulf County's population increased by 16.1 percent. The US Census Bureau shows that between 2000 and 2010 the Gulf County population increased by 15.9 percent. However, the Gulf County *Evaluation and Appraisal Report,* which based its calculation on the *Bureau of Economic Research* estimates, notes that the County experienced only a moderate population increase from 2001 to 2005 and that most of this increase could be attributed to expansion of the prison system.

In order to account for the effects of the 2008 recession, the Bureau of Business and Economic Research medium population projections, which are updated annually, were used to estimate the future population in the study area. The medium population projections were utilized for Gulf County because those are the estimates utilized in the *Gulf County Evaluation and Appraisal Report,* and because of the efforts to re-establish the county's industrial base, which if successful would likely increase the current population growth trend. Those studies addressing provisions for expanding Gulf County's industrial base include the *Port of Port St. Joe Master Plan* and the *Regional Freight Network Plan Highways of Commerce.*

Florida's current growth management policy encourages local governments to be pro-active in planning for future growth and provide the necessary infrastructure needed to support the projected level of growth. In order to adequately prepare for the anticipated growth and development along the Gulf Coast in Gulf County, improved access is needed between US 98 in Gulf County and US 231 in Bay County. The Gulf Coast Parkway would provide that access.

While growth has slowed in the recent recession, the socioeconomic data used in the Northwest Florida Regional Planning Model (NWFRPM) shows that population and employment growth has slowed only to the point of moving the data out five years. What this means is that the 2030 population and employment numbers are now the 2035 numbers and as such, the analysis for the project and the projected growth is still considered to be correct and on track for the horizon year. The conceptual design of the Build Alternatives would provide the traffic capacity needed to accommodate the projected population increases and freight traffic within the study period.

Provide a More Efficient US 98 Detour Route

There are a variety of scenarios that would require US 98 to be closed to through traffic. Among those is the need to close US 98 through Tyndall AFB for security reasons. These closures could be short or long – term depending on the situation (as was illustrated in July 2013 with the 24-hour closure of US 98 through Tyndall AFB as a result of a drone crash). In addition, if the DuPont Bridge should be damaged or in need of repair, its closure could be lengthy. The existing 50-mile long detour is particularly onerous if made daily over a period of months. The Gulf Coast Parkway would provide a more efficient detour route, reducing the detour distance by potentially 30 miles.

3.1.3 Maintain Continuity with Planned Future Transportation Projects

The proposed Gulf Coast Parkway project has been developed to be consistent with existing transportation plans and related transportation improvement projects. Since the project crosses planning jurisdiction boundaries, portions of the projects may only be included in some plans. Also, due to the project's length it is expected that the improvements would occur in phases. Therefore, in some transportation plans, only certain segments have been identified within the planning period of the specific plan. Other segments may occur later than the planning period, or may occur in another planning jurisdiction's plan.

Planned Roadway Improvement Projects: The following *LRTP Needs Projects* were considered during the traffic analysis for the Gulf Coast Parkway.

- SR 22 widening to four lanes from Tyndall Parkway to Gulf Coast Parkway
- SR 22 (East 3rd St.) widening to four lanes from SR 30 (US 98) to CR 2327 (Transmitter Road)
- SR 22 (Wewa Highway) widening to four lanes from CR 2327 (Transmitter Road) to SR 30A (Tyndall Parkway)
- SR 30A (US 98) widening to six lanes from SR 22 (Wewa Highway) to CR 2327 (Transmitter Road)
- SR 389 (East Avenue) widening to four lanes from SR 75 (US 231) to CR 28 (11th St.) widening to four lanes.
- CR 390 widening to four lanes from SR 77 (Ohio Avenue) to SR 75 (US 231)
- SR 75 (US 231) widening to six lanes from CR 2312 (East Baldwin Road) to CR 388
- SR 75 (US 231) widening to six lanes from CR 388 to Jackson County line
- CR 2327 (Transmitter Road) widening to four lanes from CR 390 to SR 22 (Wewa Highway)
- CR 2301 widening to four lanes from SR 75 (US 231) to CR 388.
- Gulf Coast Parkway Extension new four lane road from SR 75 (US 231) in Bay County to SR 30A (US 98) in Walton County.

It should be noted that the proposed project was developed to work in concert with these projects not to supplant them. Further, implementation of these projects without the Gulf Coast Parkway would not provide the all of needed capacity improvements to the transportation network.

3.1.4 Improve Security of the Tyndall Air Force Base

US 98 is a major east-west roadway serving the Gulf Coast region. A large segment of US 98, between the City of Port St. Joe and Panama City, provides the only through route within this region and lies partly within the Tyndall AFB Reservation. When US 98 through Tyndall AFB is closed for any reason vehicles must travel a detour route approximately 50 miles long to reach their destination. The closing of US 98 is periodically necessary for security purposes at Tyndall AFB. Any time that a training drone is launched, US 98 is closed within one mile of the runway. Tyndall AFB will not release data on the

frequency or timing of these launches for security reasons. There have also been past instances where accidents involving drone or plane crashes have required the closure of portions of US 98. Drone crashes occurred in November 1996 and again in February 2002, there was a plane crash at Tyndall AFB in March 2003. An alternate route to US 98 in the Callaway/Springfield area would benefit both the Tyndall AFB and the traveling public who would not have to travel an approximately 50 mile detour to reach their destination.

Tyndall AFB submitted a letter indicating that the project would benefit security at the base by providing a suitable alternative route for the public. Tyndall AFB indicated this would significantly upgrade its force protection posture and the safety and security of its personnel and resources, as well as enhance its ability to execute its mission in heightened threat conditions (**Appendix B**). Therefore, the proposed project would benefit national security by providing a shorter detour route and allowing closure of US 98.

3.1.5 Improve Hurricane Evacuation Capability

Recent hurricane seasons have demonstrated the need for improved evacuation (and recovery) routes and additional route options to accommodate area residents and visitors, particularly in Gulf County where there are limited evacuation routes. A hurricane evacuation analysis was conducted for the proposed project to determine whether the road would provide evacuation benefits to the residents and tourists in the coastal areas of Gulf County and southeast Bay County (see *Hurricane Evacuation Analysis for the Proposed Gulf Coast Parkway*, August 2006, for details on the study). The analysis found that the proposed project would provide evacuation benefits and, therefore, it was included in the purpose and need for the project.

Currently, northbound evacuation of Bay County is by US 231, SR 77, and SR 79. Those residents of southeast Bay County would most likely utilize US 231 or SR 77, depending on the direction the hurricane is expected to take. The only northbound routes in Gulf County are CR 386 and SR 71, both two-lane roads. Those evacuees using CR 386 must travel to SR 71 then to Wewahitchka. From there, they either remain on the two-lane SR 71 or take SR 22 west to US 231.

For evacuees in southeastern Bay County and coastal Gulf County to reach any of these northbound evacuation routes, they must travel US 98. US 98 is not an acceptable hurricane evacuation route, as it is within the surge zone for a Category 3 or greater hurricane through most of the corridor. Further, the east-west orientation of US 98 does not promote efficient evacuation of coastal residents needing to travel north to seek safe shelter. Evacuation on US 98 to the west requires residents to travel through Tyndall AFB, across the high-level DuPont Bridge, and through the communities of Parker, Springfield, Callaway, and Panama City to reach US 231, a distance of 27.8 miles from CR 386. Evacuation on US 98 to the east requires residents to travel south, across a high-level bridge and through the community of Port St. Joe to reach SR 71, a distance of 9.5 miles from CR 386. Although this distance is shorter and there is less traffic, SR 71 is only a two-lane road that experiences a severe bottle-neck in Wewahitchka. Evacuation up two-lane CR 386, as described above, requires traveling across the high-level Overstreet Bridge, to SR 71 and on SR 71 through the bottleneck in Wewahitchka. The route evacuees choose will be based on the location they are evacuating as well as the direction the storm is expected to take.

The hurricane evacuation study, which was based on the *Transportation Analysis Update of the Apalachee and Northwest Florida Hurricane Evacuation Restudies* prepared for the United States Army Corps of Engineers (USACE) and subsequent updated model work prepared for Bay County, found that the Gulf Coast Parkway would reduce evacuation times on SR 71 and US 231 (under contraflow conditions), **Table 3-1** summarizes the results of the study.

Table 3-1 Worst Case Hurricane Clearance Times (in hours)

Evacuation Bottlenecks	Existing Road Network (2006)	Year 2032 No Build Alternative	Year 2032 with Planned Improvements & Gulf Coast Parkway	Year 2032 with Gulf Coast Parkway and US 231 Contraflow
US 231 NB at SR 20	25	32	36	28
SR 71 through Wewahitchka	12	14	10	10

Note: Worst case is a Category 4-5 hurricane during high tourist occupancy

Although clearance times for the two northbound lanes of US 231 would increase with the addition of the Gulf Coast Parkway, the clearance times would decrease if US 231 were operated under contraflow conditions (i.e. by temporarily using 3 or 4 travel lanes for northbound traffic). Evacuation times on a contraflow facility, with traffic from the Gulf Coast Parkway, would decrease to four hours less than evacuation times under the No Build Alternative (and eight hours less than would occur with only two evacuation lanes on US 231). It should be noted that LOS volumes on all evacuation routes decrease as evacuation progresses and then recover near the end of the process.

With the considerable percentage of the study area population living along the coast, the Gulf Coast Parkway would be of particular benefit in evacuation, since it provides residents with a third, more direct alternative to reach either I-10 or to continue northbound. Although it also requires a high level bridge that would be subject to closure when sustained winds reach 40 mph, this bridge would not be directly along the coast (perpendicular to the approaching storm) and the approach roadway would be built to maintain the road surface above the storm surge. Therefore, the likelihood the facility will be operational after a direct hit by a hurricane is improved, enhancing post-storm rescue and recovery efforts.

3.1.6 Plan Consistency

The proposed project is consistent with the Bay County TPO 2035 LRTP *(Direction 2035 Shaping Our Future*), adopted July 27, 2011. Two segments of the project are identified for design in the Cost Feasible Plan (adopted July 27, 2011) and the Cost Feasible Plan Amendment Report (adopted January 25, 2012): Gulf Coast Parkway from CR 2315 Star Avenue to SR 30A (US 98) and Gulf Coast Parkway from SR 22 Wewa Highway to CR 2315 Star Avenue. However, only the segment from CR 2315 (Star Avenue) to SR 30A (US 98) (Tyndall Parkway) is being advanced to design. All other segments and development phases, identified in the LRTP Needs Assessment Report (adopted December 15, 2010) and the LRTP Needs Assessment Amendment Report (adopted September 28, 2011), are outside of the range of the current Transportation Improvement Program (TIP)/State Transportation Improvement Program (STIP). Supporting documentation for the project's planning consistency is provided in **Appendix Q**. The development and funding schedule for the project segments and phases for the recommended alternative are shown in **Figure 3-2** and listed in **Table 3-2.**

Figure 3-2: Gulf Coast Parkway Construction Segments

Table 3-2: Gulf Coast Parkway Recommended Alternative Construction Segments and Development Phases

Work Program Number	Description	Design		Right of Way		Construction	
		Funding Period*	Cost**	Funding Period	Cost	Funding Period	Cost
410981-8	From Star Avenue traveling west 0.7 mile on new alignment to Tram Road, then along Tram Road 0.5 mile, then southwest on new alignment to a new intersection with US 98 (Tyndall Parkway) approximately 1,000 feet south of the existing Tram Road/US 98 (Tyndall Parkway) intersection		$5.4		$18.0		$36.2
410981-7	From SR 22 on new alignment north of and parallel to SR 22 to intersection with Star Avenue		$8.0		$1.8		$53.1
410981-9	From intersection of Star Avenue and Segment 8 of the Gulf Coast Parkway, north along existing Star Avenue for 2.1 miles until it turns to the northwest on new alignment and travels for 2.36 miles until its intersection with US 231.		$7.6		$1.8		$50.9
410981-6	From northern end of approach to proposed bridge over East Bay north on new alignment until it reaches CR 2297. Travels north over existing CR 2297 until it diverges into Old Allanton road/Kenner Road and then continues north over existing Old Allanton/Kenner Road unit it intersects with SR 22		$10.1		$11.9		$67.5
410981-5	From southern approach of proposed bridge over East Bay to northern approach of bridge.		$23.8		$4.0		$158.6
410981-4	From intersection of CR 386 with proposed Gulf to Bay Highway west and then northwest along new alignment until the southern approach of proposed bridge over East Bay.		$7.5		$8.8		$50.0
410981-3	From intersection of US 98 and CR 386 north along existing CR 386 for 1.6 miles until the intersection of the proposed Gulf to Bay Highway		$0.9		$14.7		$5.9

*Funding periods to be determined.
**in million dollars

Planning documents that were reviewed for project consistency include:

Bay County LRTP: The Gulf Coast Parkway, Segment 8 [from US 98 (Tyndall Parkway) to Star Avenue] and Segment 7 [from Star Avenue to US 231] are identified (as Segments 3 and 2, respectively) in the Cost Feasible Plan of the Bay County TPO *2035 LRTP*[9]. All other phases, shown in the LRTP Needs Plan will be beyond the five year window of the Cost Feasible Plan.

Gulf County is not part of a TPO or Metropolitan Planning Organization (MPO) but is a partner in the Bay, Gulf, Holmes, and Washington Regional Transportation Partnership. The Gulf Coast Parkway is identified in this Partnership's transportation plan document, adopted April 3, 2006, as a "Regional Transportation Network Conceptual". Further the document states in its Regional Network Criteria that regionally significant transportation facilities exhibit one of more of the following characteristics, all of which are part of the Gulf Coast Parkway's purpose and need:

- Serves the goals of the SIS.
- Facility or service provides for interstate travel and commerce and is important to the economic vitality (tourism) of the region.
- Roadway facility is functionally classified as an arterial roadway or collector.
- Facility serves as a hurricane evacuation or emergency support route.

Transportation Improvement Program (TIP): FDOT is working with the Bay County TPO to modify the recently adopted 2014-2018 Five-Year Work Program to include the design, right-of-way acquisition and construction phases for Segment 8 [from US 98 (Tyndall Parkway) to Star Avenue)], for which federal funding is available. The STIP will be modified to be consistent with the TIP. Preliminary engineering will be identified as occurring in 2014, right-of-way acquisition as occurring in 2015, and construction as occurring in 2016.

State Transportation Improvement Program: Since Gulf County is not within a TPO, transportation improvements within the County are programmed by the FDOT. Because the Gulf County improvements are not scheduled within the 2014-2018 Work Program, they will not show up in the work program until the appropriate five-year program. Those improvements within Bay County are programmed by the Bay County TPO. FDOT is working with TPO to add the preliminary engineering, right-of-way acquisition, and construction phases for Segment 8, to the TIP before adoption of the 2014-2018 STIP in October 2013.

Regional Freight Management Plan – Highways of Commerce: The Regional Freight Management Plan identifies the Gulf Coast Parkway as a future Highway of Commerce because it "would provide higher speed, more efficient alternatives to congested areas, and moreover would divert through traffic away from older, highly urbanized areas not appropriate for heavy truck volumes."

Northwest Florida Transportation Corridor Authority Master Plan (2013): The NWFTCA was created by the Florida legislature to improve mobility in Northwest Florida to promote economic development, enhance traveler safety, improve hurricane evacuation and alleviate traffic congestion. The NWFTCA performed qualitative and quantitative assessment of the projects, including the Gulf Coast Parkway, identified in their Master Plan. Qualitatively the Gulf Coast Parkway received an overall score of 4.35 out of 5.0. Of the 36 projects in the report, four were not evaluated and seventeen ranked the same or lower qualitatively. The quantitative assessment evaluated market and non-market benefits of the projects, including conducting a cost benefit analysis. The Gulf Coast Parkway had a benefit/cost ratio of 2.13, justifying the cost of the project.

Gulf County Comprehensive Plan: The Traffic Element of the *Gulf County Comprehensive Plan*[12] (adopted December 2009, revised 2011) has as Goal 1 maintain, improve and expand a transportation circulation system which provides energy efficiency, reduction of greenhouse gases, safe and efficient movement of goods and people within and through Gulf County. Objective 1.2 requires that adopted levels of service be maintained on all roadways as new growth occurs. The proposed project would provide additional traffic capacity; thereby meeting the requirement of maintaining levels of service. Policy 1.2.3 specifically addresses the Gulf Coast Parkway by stating "….Gulf County encourages the creation of the Gulf Coast Parkway to improve hurricane evacuation, economic growth and reduce impacts to Tyndall AFB". It is expected that once a preferred alternative is identified, the project's alignment will be added to the traffic circulation map of the comprehensive plan.

Bay County Comprehensive Plan: The Transportation element states as its vision that the County "Will develop safe, efficient and effective transportation infrastructure that promotes economic development

and enhances the environment, quality of life, and aesthetics". The Objective 4.8 of the Comprehensive Plan also requires the County to maintain LOS standards. The Gulf Coast Parkway is consistent with the County's vision and policies in that it would promote economic development and would carry some of the traffic on currently congested road segments (i.e. US 98/Tyndall Parkway and US 231). It is expected that once a preferred alternative is identified, the project's alignment will be added to the traffic circulation map of the comprehensive plan.

Resolutions: Resolutions supporting the project during the concept master plan and feasibility phase were received from the Callaway City Commission (Resolution #03-04, dated February 17, 2003), the City of Panama City (Resolution #022503-1, dated February 25, 2003), the Springfield City Commission (Resolution #03-02, dated February 24, 2003), and the Panama City Urbanized Area MPO (Resolution #03-06, dated April 28, 2003), which recommended Corridors A (Alternative 7) or B (Alternatives 9 or 12).

Resolutions and letters supporting the project during the Project Development and Environment (PD&E) and alternative alignments analysis phase were received from the Gulf County Commission (November 3, 2009), the Bay County Chamber of Commerce (December 17, 2009), the Bay County Commission (November 18, 2009), the Bay County TPO (resolution BAY 09-47, dated November 19, 2009), the City of Calloway (resolution 09-23, dated November 10, 2009), the City of Springfield (resolution 09-10, dated December 7, 2009), Port St. Joe Port Authority (October 24, 2012), the City of Callaway (November 27, 2012), and Gulf County Board of County Commissioners (February 12, 2013). These resolutions and letters of support are discussed in **Section 8** of this report and a copy can be found in **Appendix B. Table 3-3** summarizes the reasons for each agency's position supporting the project.

Table 3-3: Resolutions and Letters Supporting the Gulf Coast Parkway

Organization	Document	Agency Position
Department of the Air Force	9/9/02 Letter	Since the events of 11 September, we are constantly reminded of the vulnerability that results from a US highway through the middle of a military installation. The potential of another roadway that could provide a suitable alternative for the public would provide a beneficial security option by allowing the base to close off the existing portion of US 98 when necessary, which would significantly upgrade our force protection posture and the safety and security of Tyndall personnel and resources, as well as enhance our ability to execute missions in heightened threat conditions. The pending F-22 mission underscores the importance of upgrading our force protection posture. Residential or business development immediately along a bypass on the north side of East Bay would not be in conflict with current Tyndall operations.
Panama City MPO (now Bay County TPO)	4/28/03 Letter & Resolution 03-06	MPO recommends (Corridor) Alternatives A or B be selected as the Preferred Alternative and supports appropriation of additional funding that will not take away from funding of the MPO's current Major Project Priorities. Alternative A or B are consistent with the MPO's LRTP for a Tyndall AFB Bypass.
City of Springfield	Resolution 09-10	The City of Springfield request that the FDOT and FHWA select Corridor 17 as it is favored by environmental agencies; reduces traffic on US 98 and increases security to Tyndall AFB; provides the shortest travel times employment and industry in Panama City (including the shipyard in the Allanton Pensinsula, the intermodal distribution center, the new airport, and for tourists);. is best for enhancement of commercial and industrial development; and the Allanton Peninsula has already been developed by an airpark, shipbuilding industry, the Sandy Creek community and central water and sewer.
City of Callaway	Resolution 09-23	The City of Callaway requests that the FDOT and FHWA select Corridor 17 as it is favored by environmental agencies; reduces traffic on US 98 and increases security to Tyndall AFB; provides the shortest travel times employment and industry in Panama City (including the shipyard in the Allanton Pensinsula, the intermodal distribution center, the new airport, and for tourists);. is best for enhancement of commercial and industrial development; and the Allanton Peninsula has already been developed by an airpark, shipbuilding industry, the Sandy Creek community and central water and sewer.

Organization	Document	Agency Position
Bay County TPO	Resolution 09-47	The Bay County TPO support Alternative Alignment 17 as the preferred alternative because it is consistent with the LRTP which includes the concept for the Gulf Coast Parkway from US 98 in the vicinity of Mexico Beach to US 231, with a future extension to US 98 in Walton County.
Bay County Chamber of Commerce	Resolution 12/17/09 and Letter dated 1/8/10	The Bay County Chamber of Commerce endorses the selection of Alignment 17 because it was endorsed by the Bay County Board of County Commissioners and the TPO and because it would enhance economic development in Bay and Gulf Counties, provide mobility within the regional transportation network, enhance security of Tyndall AFB, provides an additional evacuation route; and is least expensive and is favored by the environmental agencies and provides the shortest route to employment and industry in Bay County.
Gulf County Board of County Commissioners	11/3/09 Letter	Letter indicating that the Gulf County Board of County Commissioners voted to support a resolution in support of the route that would best benefit Gulf County (to be submitted at a later date). The letter further stated that the Commissioners preference is a hybrid plan consisting of Corridor 8 on the southern side of SR 22 and either Corridor 14 or 15 on the northern side of SR 22, which they feel would best address the objectives of the Gulf Coast Parkway (to enhance economic development and to improve emergency evacuation).
Bay County Board of County Commissioners	11/18/09 Letter	Following attendance at the Gulf Coast Parkway public workshop on October 15, 2009, the County Commissioners and staff wrote to express their preference for Alternative Alignment 17 as providing the most benefit to future transportation in Bay County by upgrading Tram Road and Star Avenue and improving the intersection of Tram Road and Tyndall Parkway.
Port St, Joe Port Authority	10/24/12 Letter	The Port Authority writes that "As Port activity increases adequate roadway access will be critical to its success". They are asked by potential tenants how close are you to the interstate? They note the Parkway will provide the four-lane connectivity to I-10 that is needed to support freight movements through the port only if a northerly alignment is selected. Therefore, they are requesting FDOT to select an alternative alignment where its northern terminus with US 231 would be north of the existing US 231/Camp Flowers Road intersection. They also requested that FDOT encourage and enable the North Florida Transportation Corridor Authority to undertake a PD&E study for a connection between US 231/Gulf Coast Parkway and SR 77, thereby completing the connection between the airport and the Port of Port St. Joe.
City of Callaway	11/27/12 E-mail	The City of Callaway has spent approximately $20 million to extend water and sewer utilities along CR 2297 in anticipation that FDOT would consider Alignment 17 the most reasonable route. Therefore, they recommend Alternative 17, and to a lesser degree Alignment 19, as the best option of the City and eastern Bay County.
Gulf County Board of County Commissioners	02/12/13 Letter	Gulf County Board of County Commissioners requested that the FDOT consider an alternative alignment where its northern terminus would connect with US 231 to the north of the existing US 231/Camp Flowers Road intersection (similar to Alternative 15). They believe this proposed route would provide most direct and shortest route to US 231 and most efficiently achieve the nine goals in the purpose and need. They noted that with the economic hardships of the past several years, and with potential creation of 200 jobs at the Port site in Port St. Joe within the next year, they desperately need connectivity to I-10 as it will be the major route for freight movement. With direct access to US 231 and I-10 the economic competitiveness of Gulf County would be greatly enhanced and the Port would receive the boost it needs to become active. The Commissioners also requested that the FDOT enable the NWFTCA to undertake a PD&E study for a connection from the US 231/Gulf Coast Parkway intersection to SR 77, to complete the connection between the airport and the Port of Port St. Joe.

3.2 REFERENCES

1. West Florida Regional Planning Council, *2011-2015 Transportation Improvement Program*, prepared for the Bay County TPO, 2010.

2. Florida Department of Transportation, *2011-2015 Five-Year Work Program.*

3. Gulf County, *Comprehensive Plan*, 1990, Revision adopted December 2009.

SECTION 4 EXISTING CONDITIONS

This section of the Preliminary Engineering Report (PER) describes the existing physical conditions, primarily the roadway and bridge characteristics, in the study area. There is also a summary of land use patterns, cultural and community features, and the natural environment. The existing conditions will form the basis for any future improvements or alternative actions to address the transportation needs. The existing traffic characteristics are discussed in **Section 6.0**.

4.1 FUNCTIONAL CLASSIFICATION

Florida Department of Transportation (FDOT) assigns classification to roadways according to the nature and character of their uses. Within the study area, the functional classification for the roadways on the State Highway System and two county roads formerly on the state system were taken from the FDOT Straight Line Diagrams (SLD).

US 98 (State Road {SR} 30A) in Bay County from SR 389 (East Avenue) to east of Tyndall Air Force Base (AFB) is classified as an urban principal arterial-other. US 98 is classified as a rural principal arterial-other from east of Tyndall AFB and through Mexico Beach to County Road (CR) 386 and the Gulf County line and from east of CR 386 in Gulf County (Beacon Hill area).

CR 386 from US 98 in Bay County to SR 71 in Gulf County is classified as a rural principal arterial-other.

SR 22 in Bay County from US 98 (SR 30A) to 1.2 miles east of Star Avenue (CR 2315) is classified as an urban minor arterial, and from 1.2 miles east of Star Avenue to the Gulf County line SR 22 is classified as a rural minor collector. SR 22 in Gulf County from the Bay County line to SR 71 in Wewahitchka is also classified as a rural minor arterial.

CR 2315 (Star Avenue) from SR 22 to US 231 in Bay County is classified as an urban collector.

US 231 from CR 390 to CR 2301 in Bay County is classified as an urban principal arterial-other.

Tram Road (CR 101) from US 98 to Star Avenue and Nehi Road from Star Avenue to US 231 are local non-FDOT roadways, and as such they do not have an assigned functional classification.

4.2 TYPICAL SECTION

Gulf Coast Parkway is a proposed new facility; therefore there are no existing typical sections to describe. The existing typical sections for other roadways in the study area are described below.

4.2.1 Typical Section for CR 386

The existing typical section illustrated for CR 386 from US 98 south of Mexico Beach to Wetappo Creek is a rural two-lane roadway with twelve-foot travel lanes and a five-foot grass shoulder provided in each direction. CR 386 in the area within approximately 1,200 feet on each side of the Intracoastal Waterway (ICWW) Bridge; CR 386 is a rural two-lane roadway with twelve-foot travel lanes and nine-foot shoulders, which four-foot are paved. The roadway is centered within the existing right-of-way which has a minimum width of 100 feet. The speed limit for this roadway section is 55 mph.

4.2.2 Typical Section for SR 22

The existing typical section for SR 22 from Star Avenue (CR 2315) to SR 71 in Wewahitchka is a rural two-lane roadway with twelve-foot travel lanes provided in each direction. Roadway shoulders are comprised of five-foot paved shoulders with an additional seven feet of stabilized shoulders along both sides of the roadway. The roadway is centered within the existing right-of-way which has a minimum width of 100 feet. The speed limit for this roadway section is 55 mph.

4.2.3 Typical Section for US 98

The existing typical section for US 98 in the area south of CR 386 near Mexico Beach is a rural two-lane roadway with twelve-foot travel lanes provided in each direction. Roadway shoulders are comprised of five-foot paved shoulders with an additional four feet stabilized shoulders along both sides of the roadway. The right-of-way width is 80 feet. The speed limit for this roadway section is 35 mph.

The existing typical section for US 98 (SR 30A) in Springfield is a divided urban four-lane facility with two twelve-foot travel lanes provided in each direction, separated by a 28-foot grassed median with intermittent median openings, and curb-and-gutter on both sides of the roadway. The right-of-way width is 120 feet. The speed limit for this roadway section is 45 mph.

4.2.4 Typical Section for US 231

The existing typical section for US 231 in the vicinity of College Station Road and North Camp Flowers Road is a divided rural four-lane facility with two twelve-foot travel lanes provided in each direction, separated by a 40-foot grassed median with intermittent median openings. Roadway shoulders are comprised of four-foot paved shoulders with an additional six feet stabilized shoulders along both sides of the roadway. The right-of-way width is 200 feet. The speed limit for this roadway section is 65 mph.

4.2.5 Typical Section for Star Avenue (CR 2315)

The existing typical section for Star Avenue (CR 2315) from SR 22 to US 231 is a rural two-lane roadway with eleven-foot travel lane and a five-foot grass shoulder provided in each direction. The right-of-way width is a minimum of 100 feet. The speed limit for this roadway section is 55 mph.

4.2.6 Typical Section for Tram Road (CR 101)

The existing typical section for Tram Road (CR 101) from US 98 (SR 30A) to the Clifford Chester Sims State Veteran's Nursing Home Facility, which is approximately 1,500 feet east of US 98, is a rural two-lane roadway with twelve-foot travel lane and 6-foot paved shoulder provided in each direction. Tram Road is an unpaved roadway from approximately 1,500 feet east of US 98 to Star Avenue (CR 2315). The right-of-way width is 80 feet. The speed limit for this roadway section is xx mph.

4.2.7 Typical Section for Nehi Road

Nehi Road is an unpaved roadway from Star Avenue (CR 2315) to US 231. The right-of-way width is 80 feet. There is no posted speed limit for this unpaved roadway section.

4.3 BICYCLE AND PEDESTRIAN FACILITIES

Existing bicycle facilities within the study area are restricted to paved shoulders along US 231, US 98, and SR 22. Gulf County has a policy of requiring pedestrian and bicycle facilities be provided as part of

development approval process, but no formal bicycle plan has been established. The Bay County Transportation Planning Organization (TPO) has a *Bicycle and Pedestrian Plan* developed with public input. Three most important issues identified in the planning process were trails and natural areas, connectivity, and neighborhood gathering places or village centers.

Bicycle and pedestrian crash records from September 2002 to September 2004 indicate that 3% of all bicycle crashes and 11% of all pedestrian crashes resulted in fatalities, a statistic that is higher than the statewide percentage for the same time period (statewide bicycle fatalities were 2% of all bicycle crashes and pedestrian fatalities were 6% of all pedestrian crashes statewide). Possible reasons for the higher concentration of crashes included the lack of sidewalks and poorly maintained and/or connected bike lanes/paved shoulders.

The Bay County TPO has a *Bicycle and Pedestrian Plan* with a prioritized project list for implementing bicycle and pedestrian facility improvements throughout the county. Those projects within or adjacent to the Gulf Coast Parkway study area are listed in **Table 4-1**; however, *only those projects in bold type have potential for involvement with the project*.

Table 4-1: Bay County Bicycle Lane and Pedestrian Projects (Active and Proposed) in Bay County

Rank (Tier Priority)	Roadway Name	From	To
1	SR 30A/US 98 (Tyndall Parkway)	SR 22/ Wewa Highway	Business 98
1	SR 30A/US 98 (15th Street)	SR 77/ MLK Boulevard	East Ave
1	SR 30 (Business 98)	US 231/ SR 75/ Harrison Avenue	Hamilton Avenue
1	SR 30 (Business 98)	Hamilton Avenue	CR 3026/ Cherry Street
1	SR 75 (US 231)	Midblock between 7th and 8th	CR 28/ 11th Street
1	SR 75 (US 231)	US 98/ SR 30A/ 15th Street	CR 368/ 23rd Street
1	SR 77	SR 30/ Business 98	CR 28/ 11th Street
1	SR 77	CR 2312/ Baldwin Road	17th St
1	SR 368 (23rd Street)	Lisenby Avenue	SR 77/ MLK Boulevard
1	SR 391 (Airport Road)	SR 75/ US 231	Airport Road
1	CR 28 (11th Street)	Lisenby Avenue	Harrison Avenue
1	CR 28 (11th Street)	Harrison Avenue	SR 77
1	CR 28 (11th Street)	East Avenue	Transmitter Road
1	CR 2327 (Transmitter Rd)	Wewa Highway	US 98
1	CR 2341 (Jenks Avenue)	23rd St	Baldwin Road
1	CR 28 (11th Street)	SR 77	Bay Avenue
1	Everitt Ave	US 98	11th St
2	SR 22 (Wewa Highway)	SR 30/ Business 98	CR 2327/ Transmitter Road
2	SR 30A/US 98 (15th Street)	US231/ SR 75/ Harrison Avenue	SR 77/ MLK Boulevard
2	SR 22 (Wewa Highway)	CR 2327/ Transmitter Road	SR 30A/ US 98/ Tyndall Parkway
2	**SR 30A/US 98 (15th Street)**	**CR 2327/ Transmitter Road**	**SR 22/ Wewa Highway**
2	SR 30 (Business 98)	Beach Dr	US 231/ SR 75/ Harrison Avenue
2	SR 30 (Business 98)	CR 3026/ Cherry Street	US 98/ SR 30A/ Tyndall Parkway
2	SR 75 (US 231)	Midblock between 12th and 13th	US 98/ SR 30A/ 15th Street
2	SR 77	CR 28/ 11th Street	SR 30A/ US 98/ 15th Street
2	SR 77	SR 30A/ US 98/ 15th Street	US 231
2	SR 77	SR 368/ 23rd Street	CR 2312/ Baldwin Road
2	SR 389 (East Avenue)	9th Street	SR 30A/ US 98/ 15th Street
2	SR 389 (East Avenue)	SR 30A/ US 98/ 15th Street	US 231/ SR 75
2	CR 28 (11th Street)	Bay Avenue	Sherman Avenue
2	CR 28 (11th Street)	Transmitter Road	US 98 (Tyndall Pkwy)
2	CR 2312 (Baldwin Rd)	SR 77	US 231
2	CR 3026 (Cherry St)	Business 98	US 98
2	CR 3026 (Cherry St)	US 98	Berthe Ave (CR 2323)
2	CR 2341 (Jenks Avenue)	Baldwin Road	SR 390
2	CR 389 (12th St)	US 231	CR 390
2	CR 22/ 2337 (Sherman Ave)	5th St	11th St
2	CR 2322 (7th St)	Transmitter Rd	Bob Little Rd
2	CR 28 (11th Street)	Sherman Avenue	East Avenue
2	SR 30A/US 98 (15th Street)	Jenks Ave	US231/ SR 75/ Harrison Avenue

Rank (Tier Priority)	Roadway Name	From	To
2	SR 391 (Harrison Ave)	Airport Road	23rd Street
2	SR 75 (US 231)	CR 28/ 11th Street	Midblock between 12th and 13th
2	SR 75 (US 231)	Business 98/ 6th Street	Midblock between 7th and 8th
2	SR 389 (East Avenue)	SR 30/ Business 98/ 5th Street	9th Street
3	SR 22 (Wewa Highway)	SR 30A/ US 98/ Tyndall Parkway	Berthe Avenue
3	SR 75 (US 231)	CR 368/ 23rd Street	SR 2312/ Baldwin Road
3	SR 368 (23rd Street)	SR 77/ MLK Boulevard	US 231/ SR 75
3	CR 2312 (Baldwin Rd)	Harrison Ave	SR 77
3	CR 2323 (Berthe Ave/ Boat Race Rd)	Boat Race Rd	Cherry Street
3	CR 2327 (Transmitter Rd)	US 98	US 231
3	CR 22/ 2337 (Sherman Ave)	15th St	East Ave
3	**CR 2315 (Star Ave)**	**Wewa Highway**	**US 231**
3	CR 2322 (7th St)	Bob Little Rd	US 98 (Tyndall Pkwy)
3	East Ave	Watson St	Bus 98
3	SR 30A/US 98 (15th Street)	East Ave	CR 2327/ Transmitter Road
3	CR 2312 (Baldwin Rd)	State Ave	Harrison Ave
3	SR 77	US 231	SR 368/ 23rd Street
3	CR 22/ 2337 (Sherman Ave)	3rd St	5th St
3	CR 22/ 2337 (Sherman Ave)	11th St	15th St
4	SR 75 (US 231)	SR 2312/ Baldwin Road	CR 2327/ Transmitter Road
4	SR 75 (US 231)	CR 2327/ Transmitter Road	CR 390
4	**SR 75 (US 231)**	**CR 2293/ Star Avenue**	**Jonny Lane**
4	CR 3026 (Cherry St)	Everitt Ave	Business 98
4	CR 2323 (Berthe Ave/ Boat Race Rd)	Cherry Street	SR 22 (Wewa Highway)
4	CR 2327 (Transmitter Rd)	US 231	CR 390
4	CR 390	CR 389	CR 2327
4	CR 390	CR 2327	US 231
4	CR 2315 (Star Ave)	Cole Ridge Road	Wewa Highway
4	**SR 22**	**CR 2315/ Star Avenue**	**Bay County Urbanized Boundary (w of Callaway Road)**
5	SR 22 (Wewa Highway)	SR 30A/ US 98/ Tyndall Parkway	CR 2315/ Star Avenue
5	**SR 75 (US 231)**	**CR 390**	**CR 2293/ Star Avenue**
5	**SR 75 (US 231)**	**Jonny Lane**	**Jadewood Circle**
5	CR 2321	CR 2302	US 231
5	**SR 22**	**Bay County Urbanized Boundary (W of Callaway Road)**	**Gulf County Line**
5	**SR 30A (US 98)**	**Bay Urbanized Boundary (2.5 mi E of Ammo Road)**	**Gulf County Line/ Bay Metropolitan Planning Area (MPA) Boundary**
5	CR 388	Bay Urban Boundary	US 231
5	CR 2301	US 231	Bay Urban Boundary
5	SR 75 (US 231)	Jadewood Circle	CR 388
5	SR 75 (US 231)	CR 388	Pamela Lane

Source: DRMP, Sprinke and the West Florida Regional Planning Council, *Bicycle and Pedestrian Master Plan*, for the Bay County TPO, June 2011.

4.4 TRANSIT

No transit service is available in or currently planned for the study area.

4.5 RIGHT-OF-WAY

The right-of-way for other roadways in the study area are summarized in **Table 4-2**

Table 4-2: Existing Right-of-Way

Road	Beginning	Ending	Right-of-Way Width (ft)
US 98 (Mexico Beach)	Intersection of US 98/Third Street	Intersection of US 98/Helmet Street	100
CR 386	Intersection of US 98/CR 386	Intersection of CR 286/East First Street	80-90
CR 386	Intersection of CR 386/East First Street	Intersection of CR 386/71	100
SR 22	Intersection of SR 22/Star Avenue	Intersection of SR 22/Jarrott Daniels Road	100
Star Avenue (CR 2315)	Intersection of Star Avenue/SR 22	3,260 feet south of intersection of Tram Road/Star Avenue	100
US 98 (Springfield)	Intersection of US 98/Springate Drive	Intersection US 98/East 11th Street	100
Tram Road (CR 101)	Intersection of Tram Road/US 98	2,000 feet east of intersection of Tram Road/ US 98	50
Tram Road (CR 101)	2,000 feet east of intersection of Tram Road/US 98	Intersection of Tram Road/Star Avenue	60
US 231	Intersection of US 231/Transmitter Road	Intersection Us 231/CR 2301	224
Nehi Road	Intersection of Nehi Road/Star Avenue	Intersection of Nehi Road/US 231	50

4.6 GEOMETRIC ELEMENTS

Gulf Coast Parkway is a proposed new facility; therefore there are no existing horizontal and vertical alignments to describe. Gulf Coast Parkway alternatives utilize some portions of the existing roadways, thus the existing horizontal alignments for other roadways in the study area are described below. There is no vertical alignments information for these roadways.

CR 386

In the project study area from US 98 in Mexico Beach to Jarrott Daniels Road in Wewahitchka, the existing horizontal alignment for CR 386 runs in a generally south-north then west-east direction. The alignment contains 17 horizontal curves. The horizontal alignment information was determined from the FDOT SLD for Gulf and Bay County. This horizontal alignment is consistent with FDOT design standards.

SR 22

In the project study area from US 98 in Panama City to Jarrott Daniels Road in Wewahitchka, the existing horizontal alignment for SR 22 runs in a generally west-east direction. The horizontal alignment information was determined from the SR 22 1995 and 1999 Milling and Resurfacing Plans (Financial No. 46080-3513 and No. 51030-3501). The horizontal alignment contains three horizontal curves. The horizontal alignment is consistent with FDOT design standards.

US 98

In the project study area from SR 77 to SR 22 in Panama City, the existing horizontal alignment for US 98 runs in a generally west-east direction. The alignment contains five horizontal curves. The horizontal alignment information was determined from the FDOT SLD for Bay County. This horizontal alignment is consistent with FDOT design standards.

Star Avenue (CR 2315)

In the project study area from SR 22 to US 231 in Panama City, the existing horizontal alignment for Star Avenue (CR 2315) runs in a generally south-north direction. The alignment contains two deflections and seven horizontal curves. The horizontal alignment information was found from the Star Avenue 1975 Milling and Resurfacing Plans (Financial No. 46506-3602-020). The horizontal alignment is consistent with FDOT design standards.

4.7 DRAINAGE

The study area drains to East Bay and tributaries of East Bay. East Bay and its tributaries are classified as Class II east of U.S. 98, but excluding Wetappo Creek according to Chapter 62.302.400(12)(b) Florida Administrative Code. Class II waters are designated shellfish propagation and harvesting waters. Bayou George Creek and Bear Creek contribute to Deer Point Lake, which is the drinking water supply for much of the Panama City area. Bayou George and Bear Creek are classified as Class I waters from the impoundment to the source. . The existing drainage conditions for the Gulf Coast Parkway study area are summarized below.

Topography

The topography for the study area is relatively flat with elevations near sea level at the coast and up to elevation 35 further inland. Most of the study area is wooded, with some areas used for tree harvesting. There are several wetlands and floodplains associated with East Bay and its tributaries. Soils are predominantly sandy with high seasonal high water table. The majority of the study area is hydrologic soil group D.

Floodplains

The applicable Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies (FIS) for the study area are listed respectively in **Tables 4-3 and 4-4** and shown on **Figure 4-1**. These maps and the Bay and Gulf County FIS indicate that the project study area has numerous FEMA mapped floodplains. The floodplains in close proximity to East Bay are storm surge related and have a base flood elevation of 8.0 ft (North American Vertical Datum {NAVD} 88). Inland the floodplains are a mix of Zones AE and A.

Zone A has no base flood elevation determined whereas Zone AE does.

Parts of Bayou George Creek and Callaway Creek are designated FEMA floodways. Although some of the proposed alignments are near Bayou George Creek, they never cross it. A small portion of the project crosses a Callaway Creek floodway.

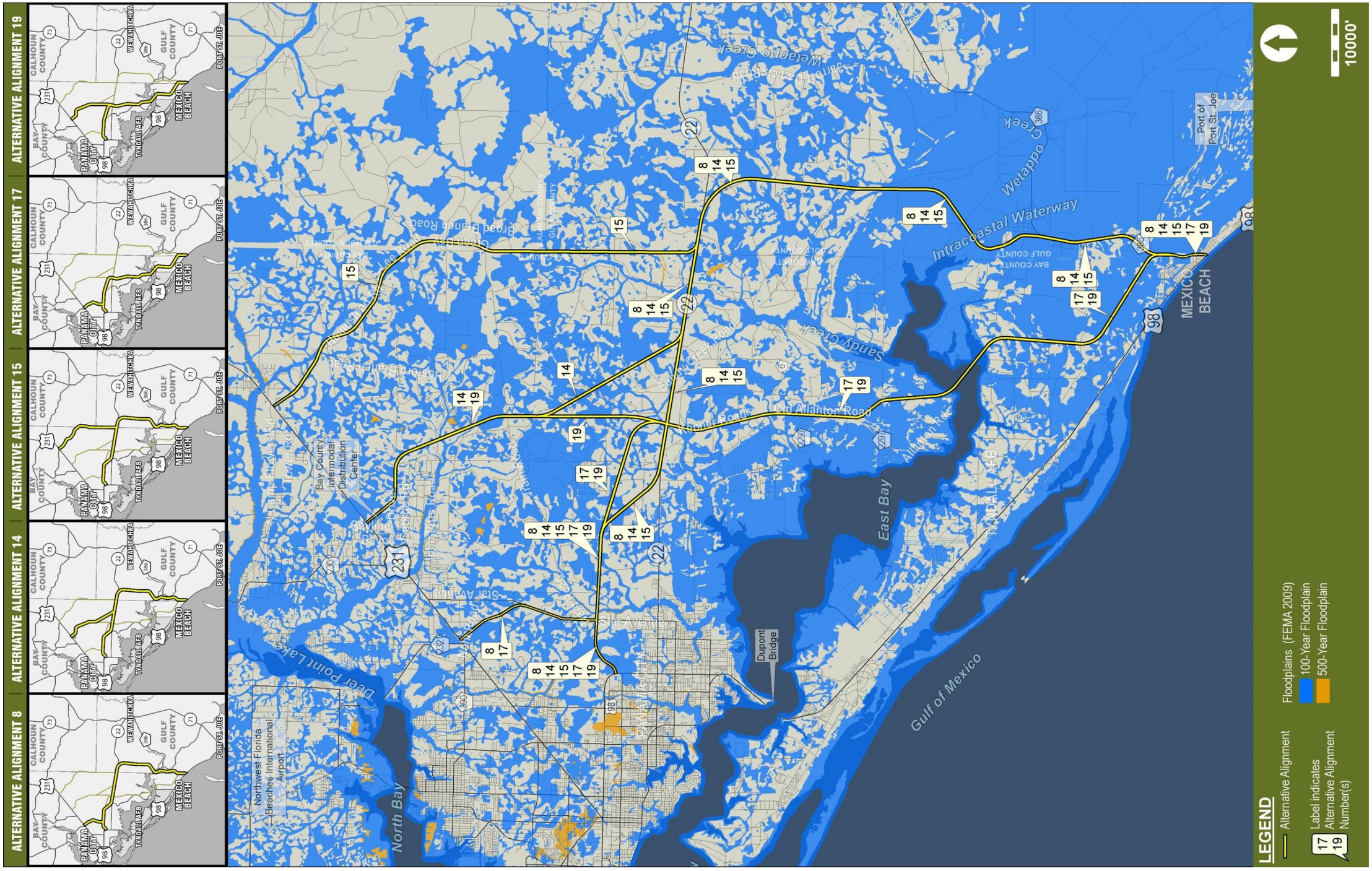
Table 4-3: FEMA Flood Insurance Rate Maps within the Study Area

FEMA Flood Map Panels	Date	FEMA Flood Map Panels	Date
12045C0230F	9/28/07	12005C0366H	6/2/09
12005C0509H	6/2/09	12005C0362H	6/2/09
12045C0210F	9/28/07	12005C0358H	6/2/09
12005C0510H	6/2/09	12005C0359H	6/2/09
12005C0469H	6/2/09	12005C0361H	6/2/09
12005C0468H	6/2/09	12005C0380H	6/2/09
120045C0140F	9/28/07	12005C0357H	6/2/09
12005C0462H	6/2/09	12005C0356H	6/2/09
12005C0452H	6/2/09	12005C0352H	6/2/09
12005C0454H	6/2/09	12005C0376H	6/2/09
12005C0460H	6/2/09	12005C0244H	6/2/09
12045C0110F	9/28/07	12005C0243H	6/2/09
12045C0130F	9/28/07	12005C0265H	6/2/09
12005C0451H	6/2/09	12005C0261H	6/2/09
12005C0432H	6/2/09	1200040145D	2009
12005C0431H	6/2/09	1200040260D	2009
12005C0427H	6/2/09	1200040275D	2009
12045C0040F	9/28/07	1200040400D	2009
12045C0020F	9/28/07	1200980050B	2009
12005C0395H	6/2/09	12013C0100C	2009
12005C0390H	6/2/09	12013C0110C	2009
12005C0370H	6/2/09	12013C0125C	2009
12005C0368H	6/2/09	12013C0150C	2009
12005C0364H	6/2/09	12013C0175C	2009

Table 4-4: FEMA Flood Insurance Studies within the Study Area

County	Study	Date
Bay	12005CV000B	6/22/09
Gulf	12045CV000B	9/28/07

Figure 4-1: Floodplains in the Gulf Coast Parkway Project Area



Floodways

A FEMA designated "Regulatory Floodway" is the channel of a river or other watercourse and the adjacent land that must be reserved in order to discharge the base flood without increasing the water surface elevation more than a designated height. Development in these floodways must be regulated to ensure that there is no increase in upstream flood elevations.

Parts of Bayou George Creek and Callaway Creek are designated FEMA floodways. A small portion of the study area intersects Callaway Creek in a floodway. The creek is 400 ft wide in this location. This will need to be addressed during the design phase of this project.

Existing Roadway Drainage

Approximately 7.3 miles of SR 22, and 6.5 miles of CR 386 are within proposed alignments. Appropriate maintenance personnel were contacted to determine if there are hydraulic inadequacies with existing structures.

Email correspondence with Harvey Brewton, FDOT Maintenance Engineer, Panama City, indicated that Sandy Creek Bridge on SR 22 has experienced flooding and may need more hydraulic capacity.

4.8 CRASH DATA

Analysis of the safety concerns on existing roads in the Gulf Coast Parkway study area was done with crash data from FDOT for the years of 2005-2009. Historical crash data[1] indicates safety deficiencies exist at specific locations within the study area. The discussion below summarizes the crash data for existing major roads and intersections in the study area.

US 98 at CR 386

From 2005-2009, a total of 11 accidents and one fatality took place within a mile of the US 98 and CR 386 intersection. Statistics have shown that 82% of these accidents were two car collisions. This location is not a signalized intersection.

SR 22

A total of 32 accidents and one fatality occurred on SR 22 within the study area between the years of 2005-2009. Of these 34 total accidents, nine of these accidents involved two car accidents and none were located at signalized intersections.

US 231

158 accidents were recorded along US 231 within the years of the recorded crash data. Of these 158 accidents, 4 of them resulted in fatalities.

One addition to FDOT crash data, the *Bicycle and Pedestrian Plan: Technical Memorandum 2: Existing Conditions Report*[2] for Bay County indicated that for the period from 2002 to 2004, bicycle fatalities accounted for 3% of all bicycle crashes and pedestrian fatalities accounted for 11% of all pedestrian crashes within the Bay County TPO planning area. This statistic is higher than the statewide percentage for the same time period. Bicycle fatalities accounted for 2% of all bicycle crashes statewide and pedestrian fatalities accounted for 6% of all pedestrian crashes statewide.

4.9 INTERSECTION AND SIGNALIZATION

The unsignalized intersections for the existing roadways within the study area are as follows:

- US 98 and CR 386
- CR 386 and Jarrott Daniels Road
- SR 22 and Jarrott Daniels Road
- US 98 and Tram Road (CR 101)
- US 231 and Nehi Road
- Star Avenue (CR 2315) and Tram Road (CR 101)

There are a number of two-lane local unsignalized intersections located within the study area.

The signalized intersections for the existing roadways within the study are area as follow:

- SR 22 and Star Avenue (CR 2315)
- SR 22 and Berthe Avenue
- SR 22 and Tyndall Parkway
- SR 22 and Bob Little Road
- SR 22 and Transmitter Road
- SR 22 and US 98
- US 98 an Everitt Avenue
- US 98 and East Avenue
- East Avenue and 11th Street
- East Avenue and 15th Street
- East Avenue and US 231
- US 231 and Transmitter Road
- US 231 and FL 390
- US 231 and Star Avenue (CR 2315)
- US 231 and CR 2301

4.10 UTILITIES

Utility providers and railroad companies within or adjacent to the study area have been identified. Utility providers in the study area include both overhead and underground utilities. These utilities are electric power, telephone, cable TV, gas, potable water, and sanitary sewer. Two railroad lines are currently in operation within or adjacent to the study area. Coordination has been ongoing with the utility and railroad companies throughout the study.

Utilities

Table 4-5 provides the list of utility providers within the study area.

Table 4-5: Utility Providers in the Gulf Coast Parkway Study Area

Utility Service	Utility Provider	Contact Information
Electric	Gulf Coast Electric Coop	Mr. Sid Dykes 9434 N. Hwy 77 Southport, FL 32409 850-265-3631
	Gulf Power Company	Mr. Kenny Douglas 1230 E. 15th Street Panama City, FL 32405-6144 850-872-3309
	Progress Energy	Mr. Rudy Seiler 4359 S. E. Maricamp Road Ocala, FL 34480 352-694-8552
Telephone	Fair Point Communications	Mr. Roy Lollie 502 Cecil G. Costing Sr. Blvd. Port St. Joe, FL 32456 850-229-7236
	AT&T	Mr. Hal Hinote 2221 Industrial Drive Panama City, FL 32405 850-913-3709
Cable	Knology	Mr. Randall Harrison 2143 Sherman Avenue Panama City, FL 32405 850-215-5719
	Comcast Cable	Mr. Ed Lang 1316 Harrison Avenue Panama City, FL 32401 850-769-2929
Gas	Teco Gas	Mr. Mike McQuire 301 Maple Avenue Panama City, FL 32401 850-914-6104
	Florida Gas Transmission	Mr. Joe Sanchez 601 S. Lake Destin Drive Suite 450 Maitland, FL 32751 407-838-7171
Potable Water and Sanitary Sewer	Bay County Utilities	Mr. Tim Beachum 3400 Transmitter Road Panama City, FL 32401 850-872-4785

Railroads

There are two railroad lines operating within or adjacent to the study area. The Bay Line Railroad (BAYL) and the Apalachicola Northern Railway are shortline railroads owned by Genesee and Wyoming. The Apalachicola Northern Railway travels from Port Saint Joe, Florida through Apalachicola, Florida to Chattahochee, Florida where it connects with CSX's Pensacola & Atlantic and Tallahassee Subdivisions.

The BAYL Railroad operates between Panama City, Florida and Abbeville, Alabama, with trackage rights on CSX's Pensacola & Atlantic Tallahassee and Subdivision at Cottondale, Florida, and their Dothan Subdivision near Dothan, Alabama.

The Apalachicola Northern Railway serves the Port of Port St. Joe and the BAYL Railroad services the Port of Panama City.

4.11 EXISTING BRIDGES

There are several existing bridges, bridge culverts, and box culverts along the existing roadways within the study area that may require widening or replacement for the construction of the Gulf Coast Parkway. Parallel adjacent bridges will be required at all of the bridge sites. Information in this section was determined from the FDOT SLD's, bridge inspection reports, and field survey.

4.11.1 CR 386 Bridges and Culverts

Bridges

- Bridge No. 510024 – Panther Swamp, approximately 400 feet north of CR 386A.

This existing bridge is a flat slab type construction and consists of four spans for a total length of 60 feet. The bridge contains 24 feet clear roadway with no shoulders. Guardrail is installed across the bridge in front of the post and beam traffic rail. The existing concrete piles are encased with round concrete pile jackets with square jackets extending to the mud line. This bridge was built in 1948 and has a sufficient rating of 51.2. The structure has an inventory load rating of 19 tons (HS 10.5) and is posted for 30 tons (SU) and 34 tons (C). This structure will require replacement if needed for the Gulf Coast Parkway alignment.

- Bridge No. 510026 – Cypress Creek, approximately 0.9 miles south of Basswood Road.

The existing bridge is a flat slab type construction and consisted of five slabs for a total length of 75 feet. The bridge contains 24 feet clear roadway with no shoulders. Guardrail is installed across the bridge in front of the post and beam traffic rail. The existing concrete piles are encased with round concrete pile jackets. The bridge was built in 1949 and has a sufficient rating of 47.1. The structure has an inventory load rating of 17 tons (HS 9.4) and is posted for 26 tons (SU) and 30 tons (C). This structure will also require replacement if needed for the Gulf Coast Parkway alignment.

- Bridge No. 510048 – ICWW at Overstreet.

This existing bridge has a three span continuous steel I-girder channel span unit with pre-stressed concrete beam approach spans. This is a high level crossing bridge, and it provides a 65-foot navigational clearance. The total bridge length is 2650 feet with 40-foot clear roadway and eight foot shoulders. The channel span length is 290 feet. The bridge was built in 1988 and has a sufficient rating of 99.2. The structure has an inventory load rating of 44 tons (HS 24.4). This structure can remain in place and can be

widened if needed for the Gulf Coast Parkway alignment. Vessels impact forces will need to be considered for the water piers.

- Bridge No. 510050 – Wetappo Creek, approximately 1,395 feet south of Spruce Avenue.

This existing bridge is a flat slab type construction and consisted of three spans for the total length of 90 feet. The bridge contains 40 feet clear roadway and eight feet shoulders. The bridge also has a one foot-three inches traffic rail that meets the crash test criteria. The bridge bents have 18 inches square concrete piles, and the bents are skewed with the creek. The exterior piles are battered outward. A three-inch GTE conduit is attached to the west of the bridge, and a 12-inch pipe is attached with stainless steel brackets to the east side. The bridge was built in 1987 and has a sufficient rating of 88.8. The structure has an inventory load rating of 28 tons (HS 15.5). This structure can remain in place if needed for the Gulf Coast Parkway alignment, but it will require further consideration for widening to the acceptable Load and Resistance Factor Rating (LRFR) design and rating criteria.

Bridge Culverts

The bridge culverts for CR 386 within the study area are summarized in **Table 4-6.**

Table 4-6: CR 386 Bridge Culverts

Bridge Culvert Number	Location	Type	Note
510025	Cypress Creek Relief, approximately 2,710 feet north of CR 386A	Three-barrel concrete bridge culvert	Sufficient rating of 95.7. Inventory load rating of 42 tons (HS 23). Can remain in place and can be widened if needed. This structure is scheduled to be replaced in the Section 2 phase of US 98 relocation project
N/A	Approximately 300 feet south of Shell Road	Double barrel concrete culvert with 7'X5' barrels	The west side headwall is at the shoulder line and installed guardrail. This structure will require widening or replacement
N/A	Approximately 1,765 feet south of Long Road	Double barrel concrete culvert with 7'X5' barrels	Guardrail is installed on both sides, and guardrail on the east side is damaged. This structure will require widening or replacement
510043	Approximately 200 feet north of Roberts Landing Road. Crossing Wetappo Creek	Double barrel concrete culvert with 10' wide barrels	Sufficient rating of 95.7. Inventory load rating of 39 tons (HS 22). This structure is suitable for widening but will require a hydraulic analysis to determine if it should be replaced with a bridge
N/A	Just south of Lee Goodwin Road	Single barrel concrete culvert with 10'X6'	None

4.11.2 SR 22 Bridges and Bridge Culverts

Bridges

- Bridge No. 460045 – Callaway Bayou, approximately 0.5 miles east of Star Avenue (CR 2315).

This existing bridge is a Type II pre-stressed concrete beam construction and consists of three spans for a total length of 132 feet. The bridge contains 24 feet clear roadway with 9.5 foot shoulders. The bridge bents have 18-inch square concrete piles with round concrete pile jackets. The bridge was built in 1970 and has a sufficient rating of 83.9. The structure has an inventory load rating of 43.98 tons (HS 24.4). This structure can remain in place and can be widened if needed for the Gulf Coast Parkway alignment.

- Bridge No. 460048 – Sandy Creek, approximately 1.62 miles west of Gulf/Bay County Line.

This existing bridge is a Type II pre-stressed concrete beam construction and consists of four spans for a total length of 198 feet. The bridge contains 44 feet clear roadway with ten foot shoulders. The bridge bents contain 18-inch square concrete piles with exterior piles battered outward. The bridge was built in 1970 and has a sufficient rating of 90.3. The structure has an inventory load rating of 35.05 tons (HS 19.7). This structure can remain in place, and it will require further consideration for widening to the acceptable LRFR design and rating criteria if needed for the Gulf Coast Parkway alignment.

Bridge Culverts

The bridge culverts for SR 22 within the study area are summarized in **Table 4-7**.

Table 4-7 SR 22 Bridge Culverts

SR 22 Bridge Culverts			
Bridge Culvert Number	**Location**	**Type**	**Note**
N/A	Just east of Martin Lake Drive	Single barrel concrete with approximately 9'X8' barrel	Crossing drainage ditch
N/A	Approximately 280 feet east of Seneca Avenue	Single barrel concrete with approximately 10'X2' barrel	Crossing drainage ditch
460062	Approximately 540 feet east of Gay Avenue	Double barrel concrete culvert with 10' wide barrels.	Crossing a branch. Sufficient rating of 84.6. Inventory rating of 34.94 tons (HS 19.4)
N/A	Approximately 150 feet west of Comet Avenue	Single barrel concrete culvert with 8'X2' barrel	Crossing drainage ditch
N/A	Approximately 100 feet east of Star Avenue (CR 2315)	Single barrel concrete culvert with 6'X3' barrel	Crossing drainage ditch
N/A	Approximately 290 feet east of Hugh Thomas Drive	Single barrel concrete culvert with 3'X2' barrel	Crossing drainage ditch
460056	Approximately 730 feet east of Axel Road	Double barrel concrete culvert with 12' wide barrels.	Crossing Boggy Creek. Guardrail is installed on both sides. Sufficient rating of 82.8. Inventory rating of 31.97 tons (HS 17.7). This structure can remain in place; however, it will require further analysis for widening
N/A	Approximately 0.7 miles east of Axel Road.	Single barrel concrete culvert with 5'X3' barrel	Crossing drainage ditch
N/A	Approximately 1.4 miles west of CR 2297	Single barrel concrete culvert with 6'X6' barrel	Crossing drainage ditch
N/A	Approximately 1.3 miles west of CR 2297	Single barrel concrete culvert with 4'X3' barrel	Crossing drainage ditch
N/A	Approximately 0.6 miles west of CR 2297	Single barrel concrete culvert with 8'X3' barrel	Crossing drainage ditch
460046	Approximately 0.3 miles west of CR 2297	Triple barrle concrete culvert with 10' wide barrels	Crossing Cushin Creek. Headwalls are only 12' from edge of pavement with no guardrails. Sufficient rating of 85.4. Inventory rating of 42 tons (HS 23)
N/A	Approximately 0.9 miles east of Allanton Road	Single barrel concrete culvert with 3'X2' barrel	Crossing drainage ditch
N/A	Approximately 800 feet east of Sandy Creek Road	Single barrel concrete culvert with 3'X2' barrel	Crossing drainage ditch
N/A	Approximately 1.5 miles west of the Gulf/Bay County Line	Single barrel concrete culvert with 5'X3' barrel	Crossing drainage ditch

4.11.3 Jarrott Daniels Road Bridge

- Bridge No. 514065 replacing Bridge No. 514004 at Wetappo Creek.

The existing bridge is a pre-stressed slab unit construction with and consists of five spans for a total length of 150 feet. The bridge bents have steel-pipe piles. The bridge was built in 2004, and this structure can remain in place and can be widened if needed for the Gulf Coast Parkway alignment.

4.12 GEOTECHNICAL DATA

Based on Natural Resources Conservation Service (NRCS) soil survey, soils in the upland areas are a mixture of Leefield, Albany, Stilson, and Chipley Sands. These soils are poorly to moderately well drained soils with the groundwater approximately one to 30 feet below existing ground.

In the flatwoods, soils are mostly Plummer and Pelham Sands with some Pottsburg, Leon, and Rutlege Sands. These areas are nearly level with poorly to very poorly drained soils. The groundwater is approximately 0 to 1.5 feet below existing ground. In these areas, there is also standing water up to two feet above ground.

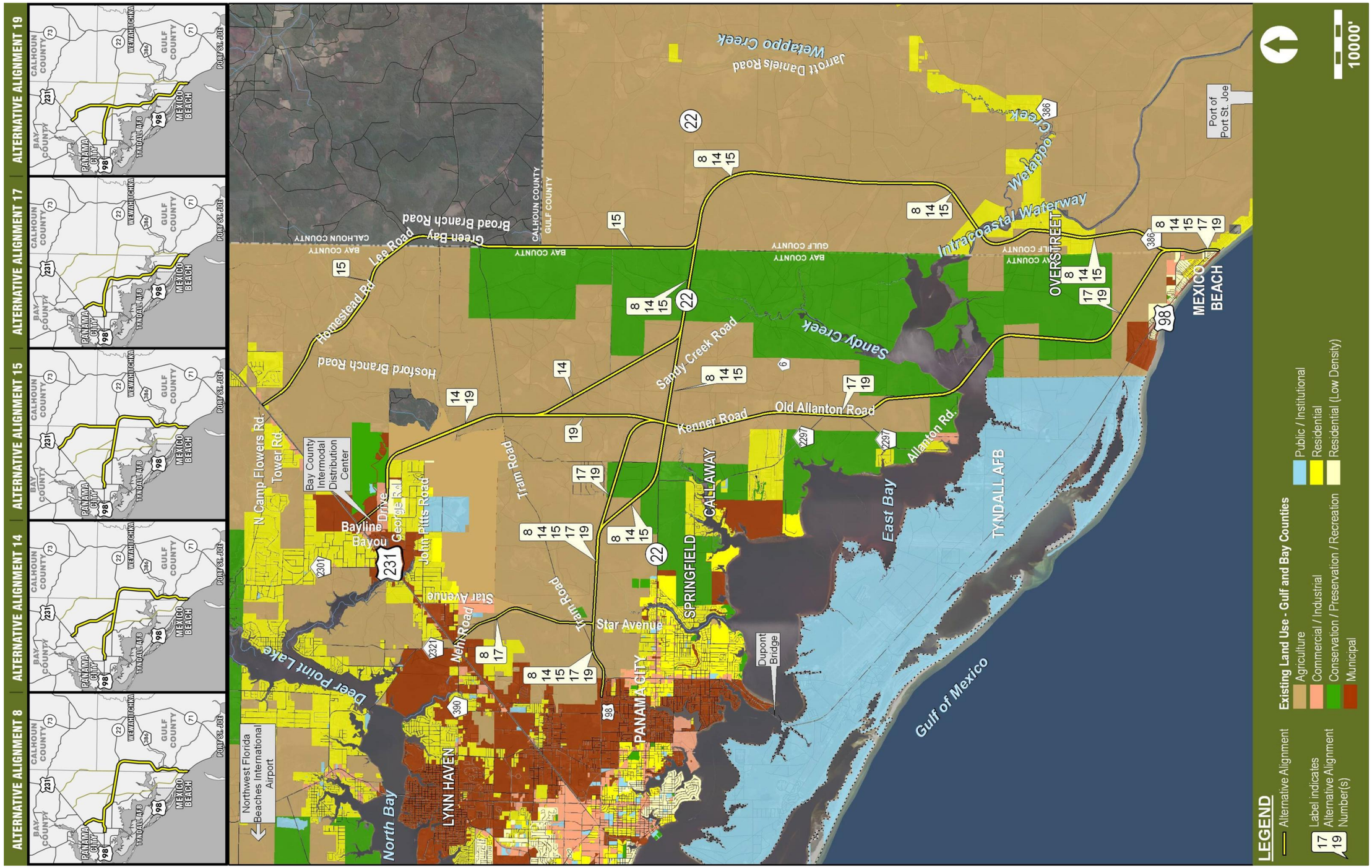
In the low lying areas, predominate soils are Pamlico-Dorovan complex, Rutlege, Allanton Sands, and Pickney Fine Sand. These areas are nearly level and poorly drained. In most of these areas, groundwater will be above existing ground as much as two feet.

4.13 LAND USE DATA

Existing Land Use

The Existing Land Use Maps for Gulf and Bay County is provided in **Figure 4-2**. Due to the large study area for the Gulf Coast Parkway, a variety of existing land uses is encountered. Beginning at the southern terminus of the project, the land uses are a mix of commercial and residential. These land uses predominate up through the Overstreet area. From CR 386 north to SR 22 and along SR 22 to the Star Avenue area, the land use is predominantly agricultural. From Star Avenue west, the land use is residential then transitions to commercial as SR 22 approaches US 98. Following Star Avenue north of SR 22, the land use begins as agricultural, transitions to residential and in the vicinity of US 231 becomes commercial. At the southernmost portion of US 231, there is a blend of commercial and residential land uses, along with a parcel of industrial land use. Continuing northward on US 231, the land use shifts to agricultural use up to Scotts Ferry Road, with small portions of residential and commercial land uses. From Scotts Ferry Road east, the land use is dominated by agricultural use which includes timberlands and several farms. The agricultural land use is consistent as it approaches SR 22 and through the Jarrott Daniels Road to the Overstreet area.

Figure 4-2: Gulf and Bay County Existing Land Use



Future Land Use

Future land uses for Gulf and Bay County are shown on **Figure 4-3**. Gulf County indicated that their existing and future land use maps were the same. In Bay County, an area along the northern half of Star Avenue extending as far west as Jetton Lane and as far north as Johnny Lane is designated City Incorporated (Panama City). Within this area, along John Pitts Road, the land use is residential except for a large area of recreation and public/institutional south of John Pitts Road at Old Majette Tower Road. A majority of the land use in Bay County will remained unchanged from their existing land use map.

Development Interest and Vested Rights

The Bay County Land Development Regulations have established a Transfer of Development Rights (TDR) program to preserve lands and resources identified in the Bay County Comprehensive Plan which are designated as TDR sending sites. Owners of TDR sending sites receive the benefits of their development rights on the TDR sending site through the transfer of those development rights to a TDR receiving site. This encourages development in a manner consistent with the comprehensive plan.

Included with this policy is the concept of "intensity rights" which means the quantity of intensity of development. Intensity rights may only be transferred to TDR receiving sites to increase the intensity of development and does not authorize increased residential densities. Residential density rights or "transferable density" increase the maximum residential density for dwelling units and not the intensity of development. A TDR receiving site may only receive the transfer of residential density rights or the transfer of intensity rights within a TDR sending site, but not both.

Proposed Developments

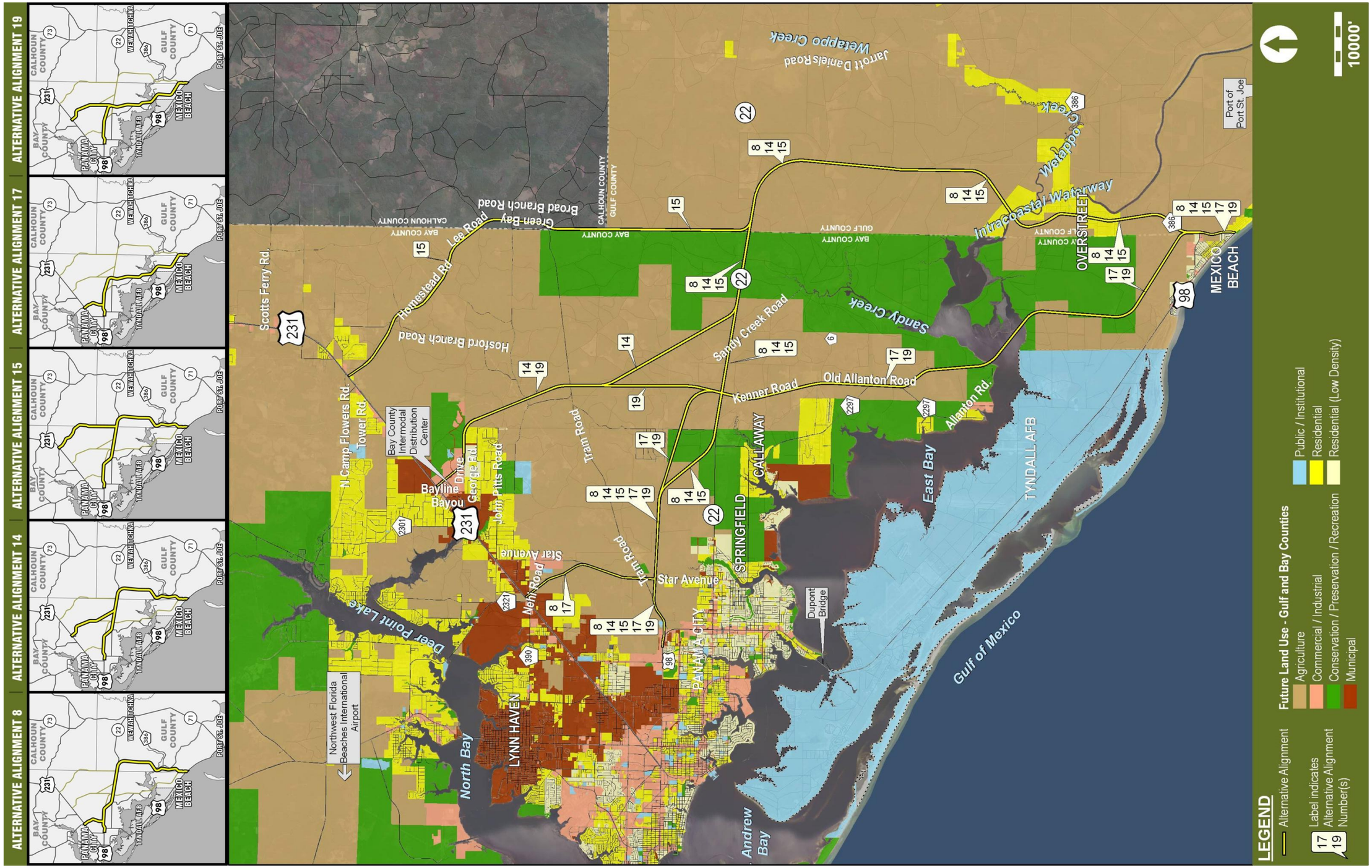
Town, resort, and subdivision development is being pursued across Northwest Florida. Proposed developments along US 98 include Village Center South and Fisherman's Village North, both within the WindMark development.

Waterford Village, a proposed development in the Overstreet area, is located on the south side of CR 386. Further along CR 386 are Wetappo Creek, Magnolia Reserve, Gulf Pines LLC, Cottages at Coastal Pines, Buckhorn Ranch, Woodbrooke Cove, and South Long Estate Phase II/Easy Waters.

Proposed developments along SR 22 include Kali Lakes, a 325-lot development at SR 22 and CR 2297; Wildwood Traces, a 126-unit development; Mills Harbor Subdivision, a 10-acre low-density development in Cedar Grove; Park Place, a 257 unit development in Callaway; and Sanctuary at Bayou Village, a 122-unit development in Callaway.

A development adjacent to or in the vicinity of US 231 includes Blinson Chase, a 20-acre low-density residential development in Cedar Grove.

Figure 4-3: Gulf and Bay County Future Land Use



Permitted Developments

In Gulf County, there are two large permitted developments, WindMark, a Development of Regional Impact (DRI) located on US 98 between CR 386 and Port St. Joe, and Wetappo located adjacent to and north of Wetappo Creek near Overstreet. In addition, a recent zoning change will allow a major mixed-use development on the old mill site in the City of Port St. Joe. Six hundred residential units and 350,000 square feet of retail space are planned on 160 acres of the 330-acre site. The commercial district will include a public waterfront on St. Joseph Bay that will also serve as a civic gathering place and entertainment district. An additional 150,000 square feet has been designated for office space.

Another coastal Gulf County development is Sunset Village – Phase III at the southern end of St. Joe Beach.

Developments occurring inland along CR 386 include the Landings at Wetappo Creek which features 16 lots on 114 acres; the 481-acre master planned community known simply as Wetappo which promotes its deep water access to inland waterways; Sunshine Subdivision; and South Long Estate Phase II/Easy Waters in Overstreet.

Bay County residential developments of greater than one hundred units located within the general vicinity of the proposed project include East Bay - Phase 1, Laird Point - Phase 1, Cedar Crossing, Cherokee Heights - Phase IV; Riverside - Phase II in Cedar Grove; Bridge Harbor, a 154-acre development in Callaway; and Sweetwater Village, a 108-acre residential development; and Kali Lakes, a 325-lot residential subdivision south of SR 22.

Smaller residential developments include Southern Pines, a 77-acre residential development in Callaway, Plantation Heights, a 19-lot subdivision in Bay County, and Phase III of the Sandy Creek Airpark, a 45-acre multi-family development in Springfield.

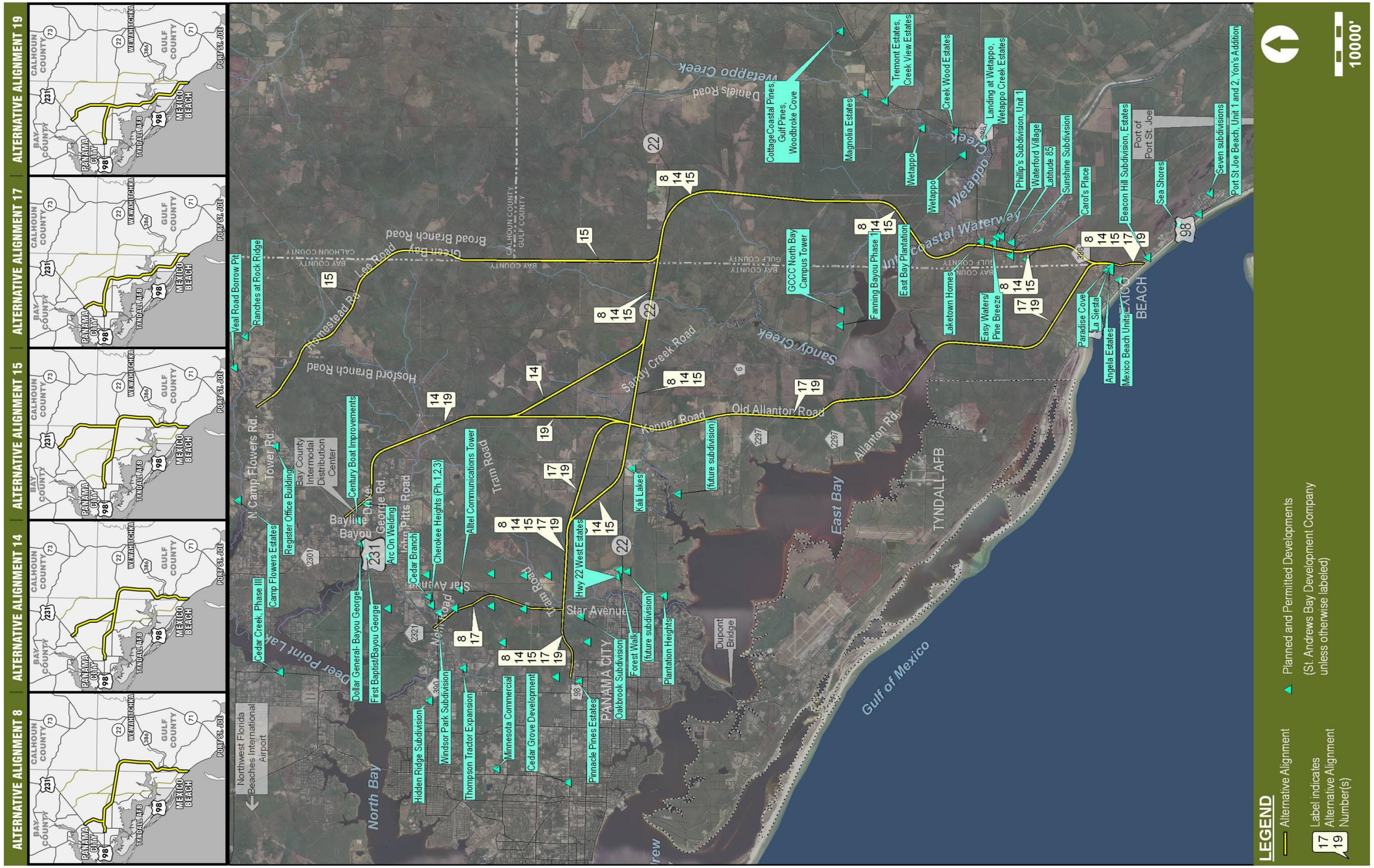
4.13.1.1 Commercial and/or Industrial Developments

Planned or permitted commercial and industrial developments within or adjacent to the study area include:

- Allanton Harbor Phase I, proposed infrastructure and dock at Eastern Ship Building Yard.
- The Douglas Dykes Business Center, a 5,000 sq. ft. building, located at the intersection of SR 22 and Berthe Avenue in Callaway;
- Cedar Grove Commerce Park, a 51-acre development in Cedar Grove;
- Premier Brush, Inc., a 6,000 sq. ft. building located on 3.7 acres near Industrial Drive;
- Gulf Power Highland City Substation, expansion of existing substation on 17 acres near US 231;
- Pinnacle Tower Relocation, relocate existing 321 foot cell tower on 23.3 acres near US 231;
- Boggy Creek Tower, proposed 180 ft. telecommunications tower on 625 acres near SR 22;
- Vulcan Materials, proposed storage of aggregate materials on 45.8 acres near Industrial Drive;
- Sandy Creek Hangar, proposed aircraft hangar with fuel tank on 1.8 acres near Airway street; and
- Marina Cove, a 41-lot development in Panama City.

The general locations of these and other planned developments or properties where development plans are being prepared are shown on **Figure 4-4**.

Figure 4-4: Planned and Permitted Developments in the Gulf Coast Parkway Study Area



4.14 DEMOGRAPHICS

Demographic characteristics were developed for this study based on the 2000 U.S. Census[1]. The demographic data for Gulf and Bay Counties indicate a wide range in income, education and other social characteristics.

Population

Table 4-8 provides population data for Bay, Calhoun, and Gulf counties and those communities within them that are near the project study area. Between 2000 and 2010, Bay County experienced a 13.9% increase in population, nearly twice the statewide rate. Much of this growth occurred in the southern part of the county along the coastline and outside of the Gulf Coast Parkway study area. Of the communities near the study area, it is Callaway, and Lynn Haven that are experiencing rapid population increases rather than Panama City, the county seat.

Table 3-1 shows that during the same period (2000 – 2010) the% change (12.4) in Calhoun County's population is comparable to that in Bay County; however as with Bay County this growth occurred outside the project study area. Gulf County also experienced an increase in population (18.98%), however not only was this growth outside of the project study area, but the incorporated communities of Wewahitchka and Port St. Joe closest to the project area both suffered population loss from 2000 to 2010.

Minority Populations

The percentage of non-white population varies considerably throughout the study area (**Table 4-9**). Both Gulf County (21.9%) and Bay County (17.8%) have a smaller percentage of non-whites than the state's non-white population (25.0%); however, there is considerable variation in the non-white population among the communities within these two counties. Excluding Mexico Beach due to its resort character, the percentage of non-white population ranges from a low of 8.7% in Highland View to a high of 34.0% in Springfield and 28.9% in Callaway.

Despite having a lower percentage of non-white population than the State of Florida, Gulf County (18.7%) has a larger percentage of the African American race than the state (16%). Those communities within the study area having a much higher percentage of African American populations than the state include: Port St. Joe (25.8%), Panama City (22.0%), and Springfield (23.8%).

The study area has a smaller Hispanic population (5.1%) than the State (22.5%), with the highest concentration occurring in Tyndall AFB (13.1%). The Asian population in Gulf County (0.4%) is one-sixth the state percentage (2.4%), which is fairly consistent with the Asian population percentage in Bay County (2.3%), the City of Parker (2.5%) and Tyndall AFB (2.4%). Callaway (4.1%) and Springfield (3.8%) have an Asian population one and half times the state's percentage. The Hawaiian or other Pacific Islander populations are consistent with the state population (0.2%) except in Mexico Beach (0.7%) which is higher.

Table 4-8: Population Data in the Study Area

	Florida	Bay County	Gulf County	Calhoun County	Port St. Joe	Wewahitchka	Panama City	Callaway	Lynn Haven	Mexico Beach	Parker	Springfield	Tyndall AFB
Est. 2035 population	24,970,700	220,100	18,300	17,200	-	-	-	-	-	-	-	-	-
% Change – Current to 2035	31%	30%	16%	17%	-	-	-	-	-	-	-	-	-
Est. Current Population	19,057,542	169,278	15,789	14,685	3,462	1,967	36,590	14,383	18,585	1,082	4,329	8,908	-
% Change – 2012 to present	1.36%	0.25%	-0.47%	0.41%	0.49%	-0.71%	0.29%	-0.15%	0.50%	0.93%	0.28%	0.06%	-
2010 Total Population	18,801,310	168,852	15,863	14,625	3,445	1,981	36,484	14,405	18,493	1,072	4,317	8,903	2,994
% Change – 2000 to 2010	17.64%	13.92%	18.98%	12.4%	-5.46%	15.04%	0.18%	1.21%	48.53%	5.41%	-6.62%	1.06%	8.60%
2000 Total Population	15,982,378	148,217	13,332	13,017	3,644	1,722	36,417	14,233	12,451	1,017	4,623	8,715	2,757
% Change – 1990 to 2000	23.5%	16.7%	15.9%	18.2%	-9.9%	-3.2%	5.9%	16.2%	33.9%	-	0.54%	1.1%	-36.2%
1990 Total Population	12,937,926	126,994	11,504	11,011	4,044	1,779	34,378	12,253	9,298	-	4,598	8,715	4,318
% Male	48.90%	49.50%	59.80%	54.4%	48.10%	48.60%	49.10%	49.70%	47.40%	48.51%	48.67%	49.40%	54.80%
% Female	51.10%	50.50%	40.20%	45.6%	51.90%	51.40%	50.90%	50.30%	52.60%	51.49%	51.33%	50.60%	45.20%
Under 5	5.70%	6.30%	4.10%	6.2%	5.10%	6.00%	6.20%	7.10%	6.70%	1.77%	5.70%	7.30%	14.80%
Under 18	21.30%	22.00%	16.20%	21.4%	20.30%	23.90%	20.70%	23.60%	25.20%	11.19%	21.2%	24.60%	36.20%
65 and Over	17.3%	14.5%	16.3%	15.4%	22.8%	17.3%	16.3%	12.9%	12.5%	31.2%	17.4%	13.0%	0.43%
Median Age	40.7	39.5	42.7	39.7	46.8	41.6	38.5	36.9	37.7	55.1	40.9	34.9	22.2

Source: *United States Census Bureau, 2010 Census*

Table 4-9: Racial Characteristics in the Study Area

		Florida	Bay County	Gulf County	Calhoun County	Port St. Joe	Wewahitchka	Panama City	Callaway	Lynn Haven	Mexico Beach	Parker	Springfield	Tyndall AFB
Total Population	Pop.	18,801,310	168,852	15,863	14,625	3,445	1,981	36,484	14,405	18,493	1,072	4,317	8,903	2,994
White	Pop.	14,109,162	138,731	12,384	11,818	2,462	1,736	26,138	10,239	15,379	998	3,389	5,872	2,206
	%	75.0	82.2	78.1	80.8	71.5	87.6	71.6	71.1	83.2	93.1	78.5	66.0	73.7
African American	Pop.	2,999,862	18,180	2,962	2,011	888	165	8,026	2,619	1,856	20	539	2,116	417
	%	16.0	10.8	18.7	13.8	25.8	8.3	22.0	18.2	10.0	1.9	12.5	23.8	13.9
Native American	Pop.	71,458	1,153	63	165	13	11	190	95	104	4	39	64	14
	%	0.4	0.7	0.4	1.1	0.38	0.6	0.5	0.7	0.6	0.4	0.9	0.7	0.5
Hispanic	Pop.	4,223,806	8,107	678	755	90	39	1,844	849	759	28	241	518	393
	%	22.5	4.8	4.3	5.2	2.61	2.0	5.1	5.9	4.1	2.6	5.6	5.8	13.1
Asian	Pop.	454,821	3,353	69	75	12	1	596	592	442	8	110	335	72
	%	2.4	2.0	0.4	0.5	0.35	0.1	1.6	4.1	2.4	0.7	2.5	3.8	2.4
Hawaiian or other Pacific Islander	Pop.	12,286	161	4	12	1	0	33	13	23	0	1	8	12
	%	0.1	0.1	0.01	0.1	0.03	0	0.1	0.1	0.1	0	0.01	0.1	0.4
Some other race	Pop.	681,144	2,039	119	198	21	13	454	199	149	9	52	173	75
	%	3.6	1.2	0.8	1.4	0.6	0.7	1.2	1.4	0.8	0.8	1.2	1.9	2.5
Two or More Races	Pop.	477,572	5,235	285	346	61	55	1,047	648	540	33	187	335	198
	%	2.5	3.1	1.8	2.4	1.8	2.8	2.9	4.5	2.9	3.1	4.3	3.8	6.6

Source: *United States Census Bureau, 2010 Census*

4.15 CULTURAL FEATURES AND COMMUNITY SERVICES

Community services provide a focal point for adjacent neighborhoods and communities, as well as serving the needs of the surrounding areas. For the purpose of this study, community facilities include medical facilities, fire departments, law enforcement, government offices, libraries, community centers, civic organizations, educational facilities, childcare facilities, recreation areas, churches, cemeteries, and pedestrian and bicycle facilities. These community services are discussed in the following sections.

Parks and Recreation Facilities

Table 4-10 provides a list of parks and recreational facilities within or adjacent to the study area. Some major recreation areas outside the study area have been included because the proposed project would improve travel times and/or access to these areas. **Figure 4-5** shows the location of the parks and recreation facilities.

Table 4-10: Parks and Recreation Areas in the Gulf Coast Parkway Study Area

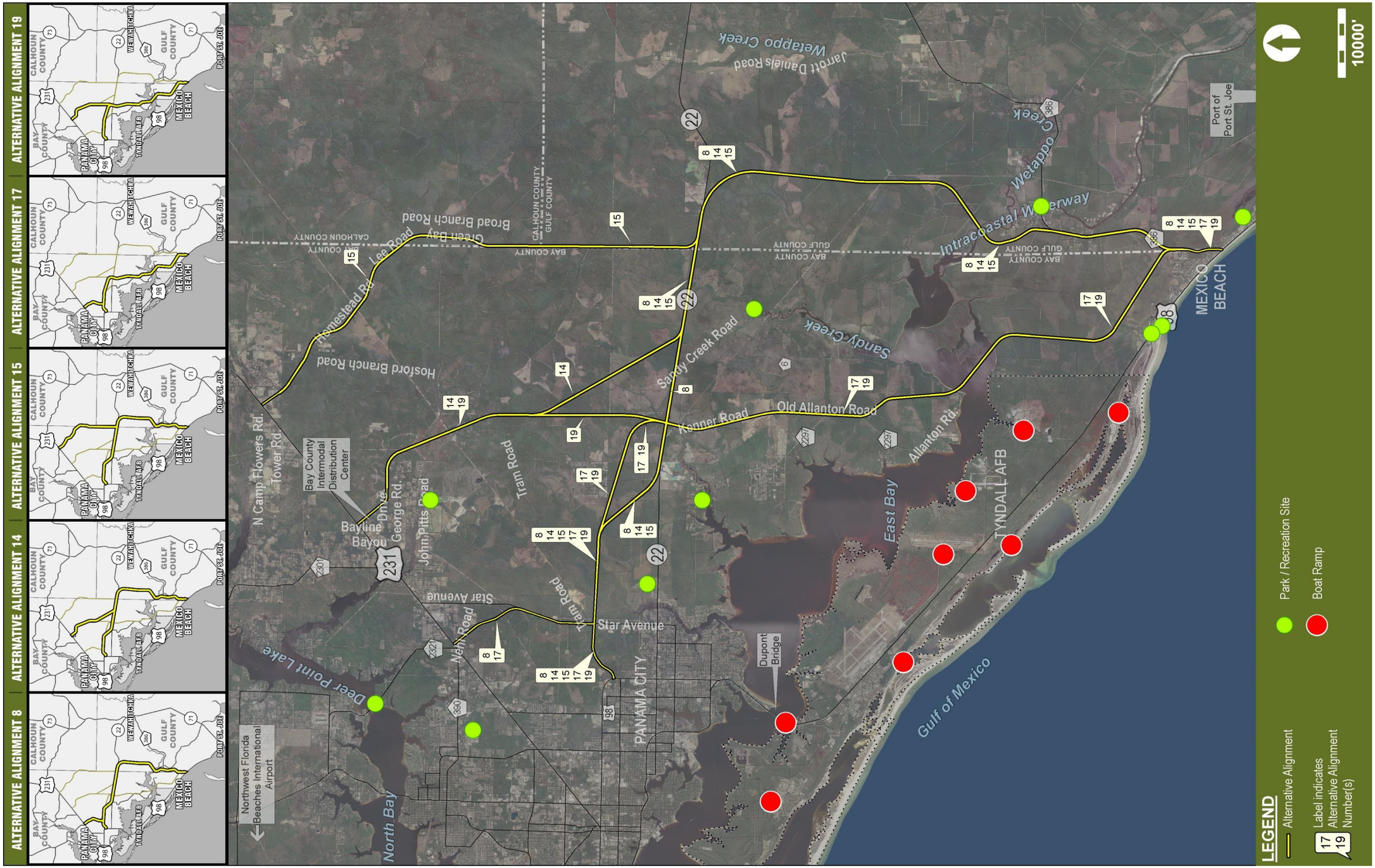
Category	Facility	Address	County	Map ID No.
Boat Ramps	Maude Holmes Boat Ramp	Sandy Creek Road Callaway, Florida	Bay	1
	Overstreet Boat Ramp	CR 386 Overstreet, Florida	Gulf	2
	Strange Bayou Boat Ramp	Farmdale Road East Bay, Florida	Bay	3
	Farmdale Bayou Boat Ramp	Farmdale Road East Bay, Florida	Bay	4
	Ira Hutchison Boat Ramp	CR 2321	Bay	5
Fishing Piers	37th Street Fishing Pier	US 98 Mexico Beach, Florida	Bay	6
	Mexico Beach Canal Park	Mexico Beach	Bay	7
Community Parks	East Bay Community Park	11743 Bay Vista Drive East Bay, Florida	Bay	8
	HG Harders Recreational Complex	7900 John Pitts Road Panama City, Florida	Bay	9
	Callaway Recreational Complex	SR 22 Callaway, Florida	Bay	10
	Lynn Haven Recreational Complex	2201 Recreation Drive Lynn Haven, Florida	Bay	11
	Beacon Hill Community Park/Veterans Memorial Park	Lighthouse Avenue Beacon Hill, Florida	Gulf	12
Trails	Florida Circumnavigation Saltwater Paddling Trail	Gulf of Mexico	Bay and Gulf	13

Source: Bay County Geographic Information System (GIS) Division
Gulf County GIS Division

East Bay Community Park is primarily a social center park that encompasses 0.5 acre and includes a community building.

The HG Harders Recreational Complex is a 79-acre recreational park that includes picnic tables, pavilion, playground, air strip, and a boating pond. Recreational activities at this park include baseball, football, volleyball, soccer, and tennis.

Figure 4-5: Park and Recreation Sites in the Gulf Coast Parkway Study Area



The Callaway Recreational Complex spans 44 acres and consists of a community building, picnic, fishing pier, baseball, football, soccer, walking trail, playground, and concession stand.

The Lynn Haven Recreational Complex encompasses 72 acres and includes a community building, picnic tables, and pavilion. This athletic-based park includes activities such as baseball, basketball, football, volleyball, soccer, tennis, and a walking trail.

The Beacon Hill Community Park/Veterans Memorial Park is a 15-acre scenic park that borders US 98 in Gulf County. It includes beach access, walking path, playground, picnic tables, grills, restrooms, pavilion, horseshoe pit, and the athletic area includes a baseball field and basketball court.

St. Joseph Peninsula State Park is a 1,761 acre park offering a combination of public recreation along with conservation efforts. This park is outside the study area.

The Constitution Convention State Park & Museum located in Port St. Joe is a 14 acre property where the first Constitutional Convention of the State of Florida was held in 1838. This park is outside the study area

Section 4(f) Properties

Section 4(f resources are *National Register of Historic Places* {*NRHP}*)-eligible historical sites and archaeological resources, and/or publicly owned parks, recreation areas, and wildlife or waterfowl refuges that are "used" by a transportation project. Known Section 4(f) resources within the study area that could potentially be affected by the proposed project include the Florida Circumnavigation Saltwater Paddling Trail and the Allanton Farmstead (8BY1348). The project area also includes the NRHP-eligible Old Overstreet Church/School (8GU193) and the Overstreet Firetower (8GU187).

Although the Environmental Screening Tool (EST) identified the ICWW Canoe Trail as a recreation resource that could potentially be eligible for Section 4(f) protection, the Florida Department of Environmental Protection (FDEP) has confirmed that, although canoes may utilize the ICWW, there is no established ICWW Canoe Trail that is owned or managed by any public agency.

Conservation/Preservation Areas

Table 4-11 is a list of conservation lands in the vicinity of the Gulf Coast Parkway study area (**Figure 4-6**). St. Andrews Bay State Park and St. Joseph Bay have been designated Aquatic Preserves and are managed by the FDEP. Aquatic Preserves are also included in the FDEP list of Outstanding Florida Waters (OFW), a designation requiring the highest degree of protection – no degradation of the water quality. To ensure the protection of Aquatic Preserves, the FDEP, has published management plans for individual Aquatic Preserves.

Table 4-11: Managed Conservation Areas in the Gulf Coast Parkway Study Area

Conservation Area	Location	Conservation Area	Location
Econfina Water Management Area	Bay	T. H. Stone Memorial St. Joseph Peninsula State Park	Gulf
Airport Conservation Easement	Bay	St. Joseph Bay Aquatic Preserve	Gulf
Breakfast Point Mitigation Bank	Bay	St. Joseph Bay State Buffer Preserve	Gulf
Naval Coastal Systems Center Managed Area	Bay	Apalachicola River Wildlife and Environmental Area	Gulf
St. Andrew Bay State Park	Bay	Apalachicola River Water Management Area	Gulf
St Andrews Bay Aquatic Preserve	Bay	Gaskin Wildlife Management Area	Gulf
Sweetwater Mitigation Area	Bay	Bear Creek Mitigation Bank	Calhoun, Bay
Tyndall AFB Management Area	**Bay**	Lathrop Bayou Management Area	Bay

Econfina Water Management Area consists of approximately 41,000 acres and lies north of Deer Point Lake. This area protects listed species and natural systems, along with protecting Bay County's potable water supply within Deer Point Lake Reservoir

Panama City Airport Conservation Easement is managed by FDEP but owned by a private landowner (The St. Joe Company). It encompasses approximately 9,500 acres and conserves unique natural systems.

Breakfast Point Mitigation Bank is part of a mitigation plan to compensate for the loss of wetland functions within the Breakfast Point basin. It is owned by a private landowner (The St. Joe Company) and has an area of 4,637 acres.

The Naval Coastal Systems Center Managed Area is owned by the United States Navy and encompasses approximately 647 acres. It is adjacent to St. Andrew Bay and contains sensitive estuarine tidal marsh.

St. Andrew Bay State Park is a 1,260 acre park with over 1.5 miles of beach on the Gulf of Mexico and Grand Lagoon. It is a former military property that provides two natural trails within the park to view coastal plant and animal species.

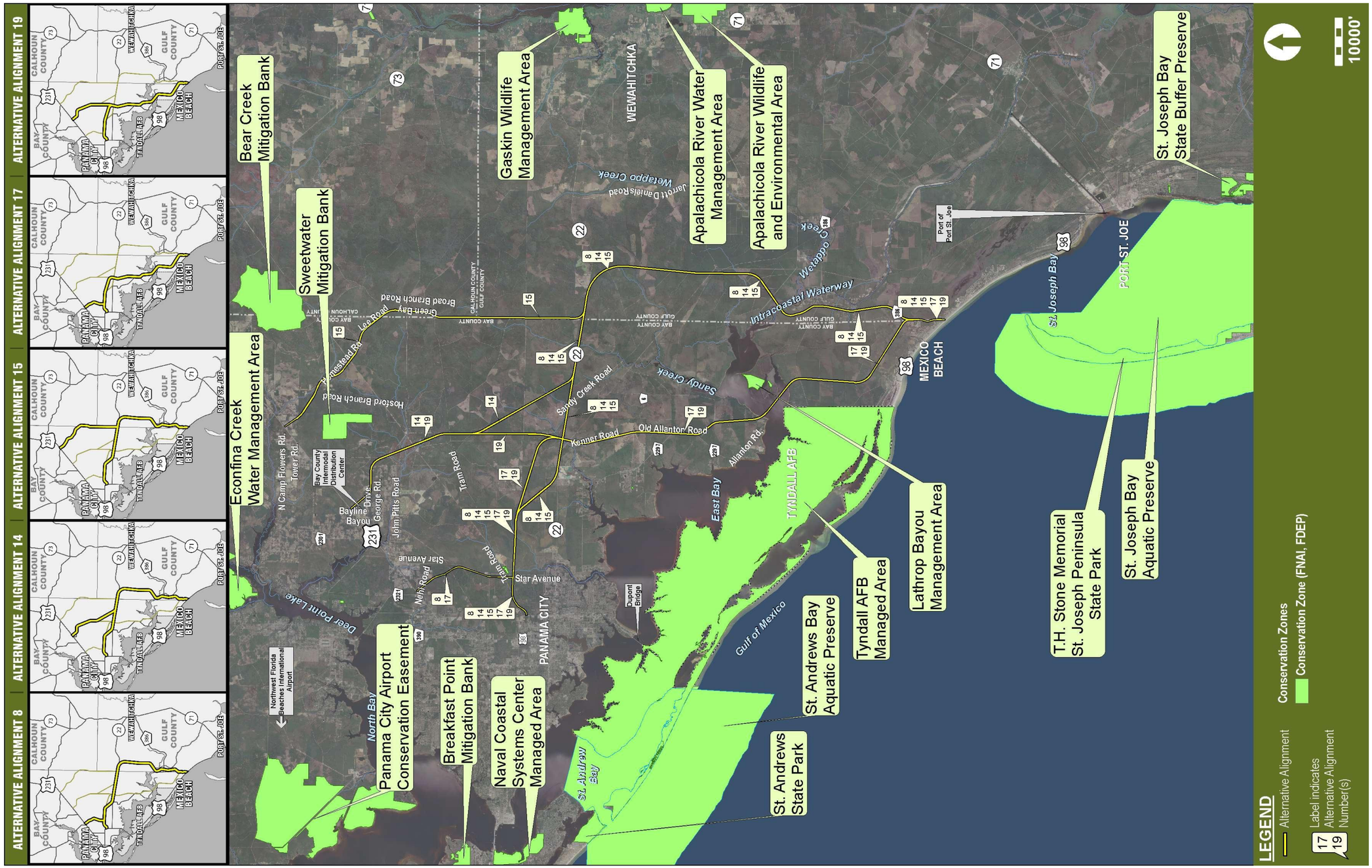
St. Andrews Bay Aquatic Preserve was designated an Aquatic Preserve in 1972 and lies adjacent to St. Andrews State Park and includes part of St. Andrews Bay and further out to 3 miles offshore[13]. St. Joseph Bay Aquatic Preserve encompasses 73,000 acres of submerged land and includes areas surrounding the St. Joseph peninsula[14].

Sweetwater Mitigation Bank is a mitigation bank, held by the FDEP, located within the headwaters of Bayou George Creek and Bear Creek watersheds.

Tyndall AFB Managed Area is approximately 18,000 acres of the base's 29,000 acres that remains in natural habitat. The native longleaf pine forest is being restored on these lands.

Lathrop Bayou Management Area is 182 acres adjacent to East Bay that is environmentally significant for supporting protected species such as the Red Cockaded Woodpecker.

Figure 4-6: Managed Conservation Areas in the vicinity of the Gulf Coast Parkway



T. H. Stone Memorial St. Joseph Bay State Park is one of the top rated beaches in the United States and protects some of the last remaining areas of costal pine scrub. It is located on approximately 2,800 acres on the St. Joseph peninsula.

St. Joseph Bay Aquatic Preserve is a 55,674 acre area of state–owned sovereign submerged lands located inside and adjacent to St. Joseph Bay. It is managed by FDEP and protected for its important and diverse natural systems.

The St. Joseph Bay State Buffer Preserve, established in October 1995, consists of 5,019 acres on CR 30 adjacent to St. Joseph Bay. The preserve provides significant habitat for many endangered and threatened species, is utilized by migratory bird species during spring and fall migrations, and is a water recharge area and buffer to St. Joseph Bay, helping to protect the bay's water quality. It is owned by the Florida Board of Trustees and managed by the FDEP and the Apalachicola National Estuarine Research Reserve. It is also designated as a United States Environmental Protection Agency (USEPA) Gulf of Mexico Ecological Management Site.

The Apalachicola River Wildlife and Environmental Management Area is comprised of 86,140 acres managed by the Florida Fish and Wildlife Conservation Commission (FFWCC) for wildlife conservation and recreation opportunities.

The Apalachicola River Water Management Area consists of 36,315 acres along approximately 19 miles of riverfront.

Gaskin Wildlife Management Area is a wildlife management area that includes 810 acres managed by the Northwest Florida Water Management District (NWFWMD).

Bear Creek Mitigation Bank is approximately 3,030 acres in size and encompasses a variety of habitats. The area is also an important hydrologic recharge area for the Floridan Aquifer.

Land Uses Identified as Conservation

Bay County has established, through their comprehensive planning process, a conservation land use category. These include areas designated for preservation, conservation, and conservation/recreation. This designation does not imply that these privately-owned lands are being managed for conservation, but that the County has identified these lands as having resources worthy of protection and by designating these lands as such, the County can apply more restrictive regulations on development activities on these lands.

These conservation land use areas include lands around Deer Point Lake, North Bay, and East Bay (shown previously **on Figures 4-2** and **4-3**, existing and future land use maps). Development in these areas is restricted according to Bay County's *Land Development Regulations*[13] which establish allowable uses for the different conservation categories. Conservation Preservation Zones (CSVP) are the most strict allowing only public utilities and infrastructure necessary to support conservation preservation uses and passive recreation. The clearing of land is prohibited, except as required by county-approved Preservation Management Plans. The Conservation Recreation Zone (CSVR) allows recreational uses. Residential and public/institutional uses may be allowed if they are accessory to uses and structures within the zone. Clearing of land is prohibited except as required in accordance with county-approved Recreation Management, Fire Protection, and Security Management Plans. The Conservation Habitation Zone (CSVH) permits agricultural and silvicultural activities, recreation uses, public/institutional uses, and residential uses. Clearing of land is prohibited except as required in accordance with agricultural and

silvicultural best management practices, and as required in accordance with county-approved Fire Protection Plans and construction permits.

Ecosystem Management Areas

In addition, there are areas with special designations that are singled out for additional protective measures. In the study area, these include ecosystem management areas (North Bay and East Bay), Deer Point Reservoir Area Protection Zone, and strategic habitat conservation areas. Ecosystem Management areas (**Figure 4-7**) are special treatment zones in which additional regulatory standards may be applied to protect natural resources. The same requirements and standards applicable to CSVH, CSVP, and CSVR zones also apply to ecosystem management areas. In addition, the appropriate sections of Chapter 19 of the Bay County *Land Development Regulations*[15], specifically Section 1905, may apply to these areas. The development restrictions, which are applicable, unless it is demonstrated that no locally significant natural resources exist on the property subject to development or the developer can design and construct the development such that locally significant natural resources are preserved, or impact minimized, include the following:

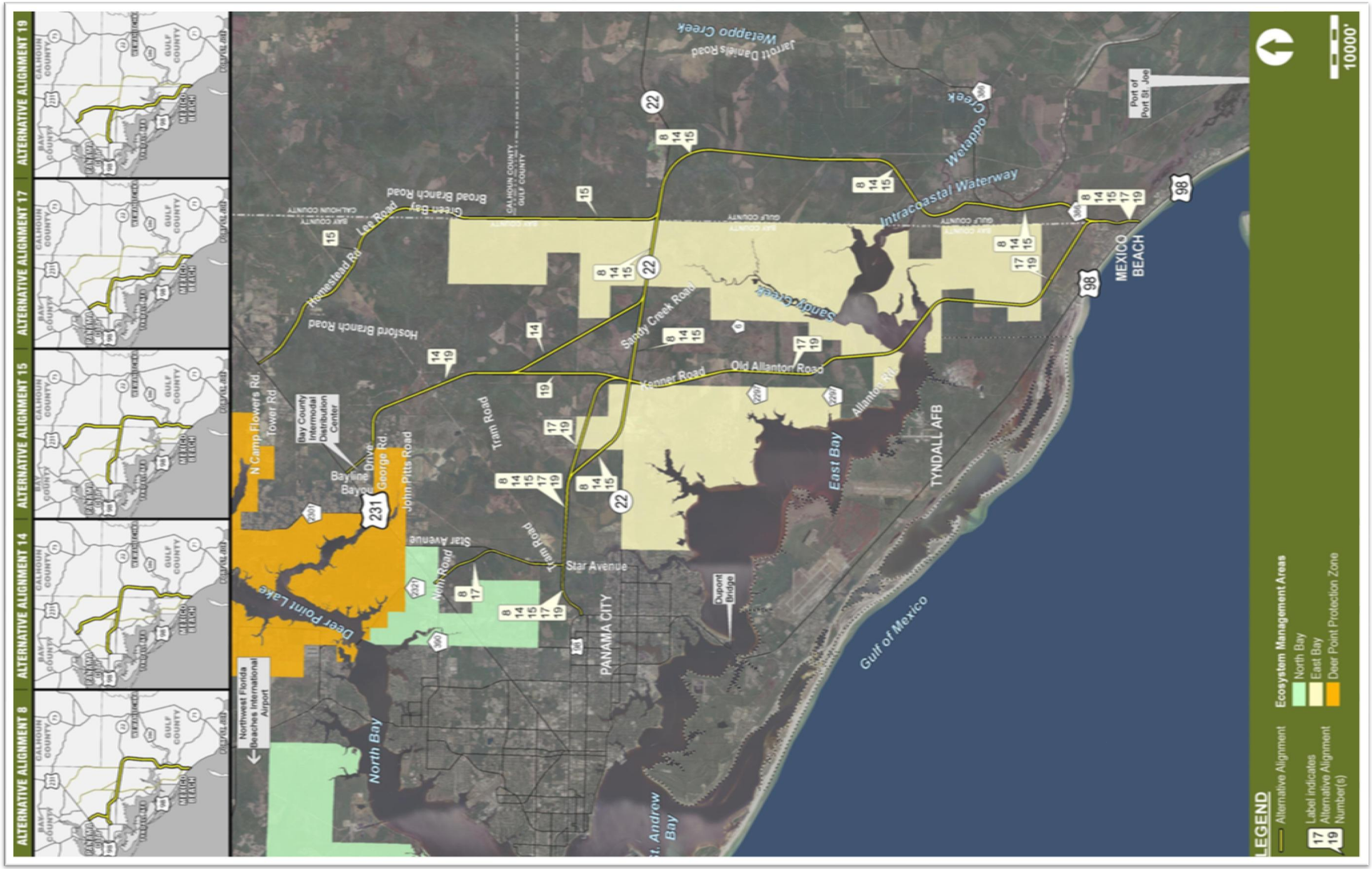
- All stormwater runoff will be treated to Outstanding Florida Water (OFW) treatment standards.
- Any new point source discharge of sewage effluent into surface waters is prohibited.
- All onsite disposal systems will be located at least 100 feet upland of the United States Army Corps of Engineers (USACE) or the FDEP wetland jurisdiction line, whichever is more restrictive.
- Development will be undertaken so as to avoid activities that would destroy wetlands or the natural functions of wetlands except for activities or permits issued by state and federal agencies.

No building or structure can be located closer than thirty feet of the mean high water (MHW) or ordinary high water (OHW) line or within thirty feet of any FDEP jurisdictional line, whichever is more restrictive, except for piers, docks, or other similar structures and an attendant ten foot wide cleared path through the wetland for purposes of providing access to such structure, or wetland crossings required to connect dry, upland parcels. All native vegetation, if any exists, will be preserved within the 30-foot setback area, with exception to the allowed attendant path.

- No development will be permitted that can reasonably be expected to cause short or long term violations of state or federal water quality standards.
- Development projects may be clustered to avoid or preserve significant natural resources.

Bay County has established the Deer Point Reservoir Protection Zone to protect the water quality of the Deer Point Reservoir at or above the ambient levels existing at the time the original Deer Point Protection Zone Ordinance was adopted. All commercial activities are prohibited except those associated with conservation or conservation-related activities. Development density restrictions apply within the protection zone as do setback requirements, impervious surface limitations, onsite sewage disposal systems and stormwater treatment standards.

Figure 4-7: Ecosystem Management Areas



Another conservation category in Bay County's Comprehensive Plan is Strategic Habitat Conservation Areas. These areas are based on the publication *Closing the Gaps in Florida's Habitat Conservation System*[16] (1994) published by the Florida Game and Freshwater Fish Commission (now FFWCC) which identified lands that must be conserved in order to sustain declining wildlife species and natural communities within the State. Developers of projects falling within a Strategic Habitat Conservation Areas must demonstrate through scientific evidence the presence or absence of rare, threatened, or endangered species. If present, the developer must provide a specific conservation plan to ensure survival of the species.

Based on a review of the above –referenced publication, a general Strategic Habitat Conservation Area in Bay County is the sandhills area in north Bay County; more precise locations include: coastal marshes along East Bay, and the Tyndall AFB/St. Andrews State Recreation Area. In Gulf County, Strategic Habitat Conservation Areas are located beyond the study area around the ` River and Lake Wimico. No federally-designated critical habitat is associated with the study area and alternative alignments.

4.16 CULTURAL AND HISTORIC RESOURCES

A search of the Florida Master Site File (FMSF) was conducted to determine the locations of known historical and archaeological sites and the presence of any significant resources within the study area. Archaeological data is limited within this very large study area as there have not been any professional, systematic surveys conducted in these locations

Historical

The following paragraphs address communities in the project area that arose in the 1800s to recent times.

Just to the southeast of Callaway on the north side of East Bay was the community of Baxter. The community was founded on the homestead of Lewis C. Davis, who ran a general store there and also erected a sawmill in 1885. Salt works operated by members of the Parker family were located at Baxter during the Civil War. A U.S. Homestead certificate was issued to Robert V. Deadrick on June 2, 1896 for a land parcel in what would eventually become the Allanton community. This parcel, in addition to a second parcel Deadrick purchased from W.B Lassitter on October 27, 1897 was purchased by Andrew Allan on April 4, 1901. (Century Pioneer Family Farm certificate application, 2007) Part of this sale included a saw mill and steam engine which had been constructed by Deadrick in 1888. The mill was renamed the Allan Lumber Company. John Beadnell opened a brick yard in Allanton in 1906.

The namesake of Allanton, Andrew Allan migrated with his family from Michigan to south Georgia, where they then built barges and "floated down the Chattahoochee and Apalachicola Rivers to East Point" with several other families. They then established the community of Allanton on east St. Andrews Bay. Andrew Allan had three sons who played a prominent role in East Bay history. The Allan homestead has been continuously owned within the Allan family for more than a century. During this time, the farmstead grew from 398 acres to 535 acres. (Century Pioneer Family Farm certificate application, 2007)

A post office was established at Allanton on December 30, 1902. A school was also established in the community in the early 1900's with 21 students enrolled at its peak year. The post office later closed on November 15, 1933 and was moved to Farmdale. (Bradbury and Hallock 1962:2) The school closed in 1942 and the remaining students were sent to nearby Callaway to attend classes. (Smith 2000:83) Of the 122 churches recorded in Bay County in 1939, the Bayview Missionary Baptist Church was the only one recorded in the community of Allanton.

Along the northwestern edge of the study area near US 231 are several older communities that have been in existence since the 1800s. Brannonville, located on US 231 near Star Avenue, received its name from the Brannon family who were early residents and dairy farmers. Jack Gay had a seafood restaurant and nightclub in the area in the 1930s.

The community of Bayou George is located at the head of Bayou George Creek on US 231. It once was a transportation route for goods being transported to the bay, and US 231 was the only road that connected St. Andrews Bay with Washington and Jackson Counties. In 1827, Bayou George Creek, then called East Creek, was crossable by a ferry operated by Henry Grant. The first bridge was built there in 1893, and a dock was built into the creek to handle traffic to Bay Head. In the early 1900's, there was a turpentine still in operation and a commissary for workers. In the 1920s, Roger Berg of New York planned a real estate development for Bayou George. He formed the St. Andrews Development Company and purchased land from T.B. Young which he had platted for home sites. However, the lots were slow in selling and he was forced into bankruptcy. A commune for a group of Norwegian immigrants was planned in 1926, but it too failed. The area now continues to grow slowly.

Another community along US 231 and the BAYL, at the northern limit of the study area, is Youngstown. Youngstown was first called Lawrence, after an early settler in the area. In the early 1900s, T. B. Young constructed a turpentine still and a commissary adjacent to the railroad called the Youngstown Naval Stores Company. A small village began to grow in the area. The Youngstown Naval Stores Company was sold to the McBride family in the 1920s and it closed in the 1930s. The land was purchased by C. B. Waller in 1940 and used as a grass sod farm. Several developments were begun in the Youngstown area during this time. However, none of them prospered.

Located on SR 386 in Gulf County between Wewahitchka and Mexico Beach, Overstreet is positioned on the ICWW. At the request of George Overstreet, the community's post office was established on August 28, 1913. This post office was operated in "Miss Lillie Scott's corncrib" and later across the canal at Patrick's Store. Ms. Scott and Mr. Thomas Patrick served as postmaster, respectively. The Overstreet post office was discontinued on August 15, 1928 when it was moved to Blountstown.

In Overstreet's early years, a ferry operated to allow passage across the canal. A barge was later constructed and called the Overstreet Floating Bridge. Completed in 1952 of scrap and salvage materials, it was intended to provide a temporary crossing at the ICWW. This swing barge remained in operation until the late 1980s when a permanent bridge was constructed.

The Overstreet School was built in the first decade of the 20th century and was the first of three schools in the area. The structure later became a community church in the 1950s with the Methodist Church providing pastors. The building was used as a church until the late 1970s.

Records indicate that the fire tower at Overstreet was moved from Farmdale around 1941 or 1942. In 1947, it was one of 122 fire towers in existence around the state. In Gulf County, other fire towers were located at Wettapo, White City and Odena. Forester Archie Marshall's wife, Verna Merell attended the Overstreet fire tower for decades.

According to local informants, a number of the residential structures were floated down the ICWW to Overstreet from other locations. Many citizens were involved in the local turpentine industry, including numerous African-American residents. Pioneer families include the Patricks, Guillfords, and Hardys.

Based on the historical documentary review summarized above, it is concluded that the study area may contain historical sites. Typical historical sites that could be expected include artifact scatters related to the naval stores and the timber industry, and historic homesteads. During both the Second Seminole War

and the Civil War, several events occurred within the region, but no known specific events have taken place within the study area.

Archaeological

Of the 25 recorded archaeological and historical sites, 16 sites date to the Weeden Island period, three of which are burial mounds. These sites are generally located on the bayous, creeks, and drainages feeding the bays, bayous, or the Gulf of Mexico. The artifacts, including ceremonial vessel types, exotic materials such as mica and copper, and effigy and anthropomorphic figurines, have been recovered from the mound sites. The other sites range from Late Archaic period artifact scatters to historic sites. The historic sites, excluding the National Register listed Schmidt-Godard Farm, may be remnants of historic house sites associated with the naval stores industry that was prominent in the region during the late 19th-early 20th century.

Based upon an examination of the information in the FMSF and other pertinent sources, there is a moderate to high probability that additional archaeological sites are present, particularly in the East Bay region of the study area. Areas where the soils were at least somewhat poorly to moderately well-drained along sand ridges and those areas along or near substantial fresh waterbodies are considered to be high/moderate probability. Areas that are frequently inundated or consist of wetland vegetation species, as well as areas that are not located within close vicinity to fresh water are considered to have a low potential for the presence of cultural material and therefore, have been determined to be low probability.

Table 4-12 lists the previously recorded archaeological sites within one mile of the study area. Refer to the *Cultural Resources Assessment Survey* (CRAS) for a more detailed discussion of the archaeological and historical resources evaluated during the cultural resources assessment for this project.

Table 4-13 lists previously recorded cultural resources assessments that have been performed within the vicinity of the project corridor.

Table 4-12: Previously Recorded Archaeological Sites in the Study Area

Site #	Site Name	Site Type	Cultural Affiliation	State Historic Preservation Officer (SHPO) NRHP Determination	Within Area of Potential Effect (APE)
8BY27	Laughton's Bayou Mound A	Prehistoric Burial Mound	Weeden Island I	Not Evaluated	N
8BY28	Laughton's Bayou Mound B	Prehistoric Burial Mound	Weeden Island	Not Evaluated	N
8BY32	Farmdale	Burial Mounds	Weeden Island	Not Evaluated	N
8BY110	Farmdale	Prehistoric Mound(s)	Swift Creek	Not Evaluated	N
8BY195	Tyndall AFB Aboriginal 8	Low Density Scatter	Fort Walton, Weeden Island	Not Evaluated	N
8BY794	Sandy Creek Mouth East Side	Low Density Scatter, Historic Refuse	American-20th Century, Ft. Walton, Swift Creek, Weeden Island	Not Evaluated	N
8BY814	Lonesome Pine	Terrestrial	Santa Rosa-Swift Creek	Not Evaluated	N
8BY815	Two Hollies	Terrestrial	Middle Archaic	Ineligible	N
8BY893	Lathrop Bayou	Building Remains, Extractive Site, Farmstead, Historic Refuse, Terrestrial	American 20th Century, Mid-20th Century	Ineligible	N
8BY938	44th Street	Low Density Scatter	Weeden Island	Ineligible	N
8BY958	Emil T. Schmidt Homestead	Building Complex	19th Century	Listed on NRHP	N
8BY1047	Walker Bayou	Extractive Site	Aboriginal	Ineligible	N
8BY1048	Tortoise Hill	Extractive Site	Aboriginal	Ineligible	N
8BY1087	Harmon's	Low Density Scatter	Weeden Island	Ineligible	N
8BY1088	Salt Creek	Low Density Scatter	Aboriginal	Ineligible	N
8BY1338	Goden Key Site	Terrestrial	Prehistoric-Unspecified	Ineligible	N
8GU30	Overstreet Bridge	Historic Bridge	Built 1952	Not Evaluated (destroyed)	N
8GU78	Overstreet Southeast	Low Density Scatter	Weeden Island	Not Evaluated	N
8GU84	Wetappo Creek	Campsite, Prehistoric lithics- non-quarry, Dense Artifact Scatter	Archaic-Unspecified, Late Archaic, Transitional (1000 B.C. to 700 B.C.)	Ineligible	N

Table 4-13: Previously Recorded Cultural Resources Assessments in the Vicinity of the Gulf Coast Parkway Study Area

Division of Historical Resources (DHR) #	Assessment Title	Author	Year
44	An Archaeological and Historical Survey of the Proposed Mexico Beach 201 Wastewater Treatment Facility (WWTF), Bay and Gulf Counties, FL.	Miller, James	1976
138	Partial Cultural Resource Inventory of Tyndall AFB, FL.	Knudsen, Gary; Stoutamire, James	1979
284	An Archaeological and Historical Assessment Survey of Bay County 201 WWTF.	Miller, James	1976
297	Cultural Resources Survey of Alabama Electric Cooperative, Inc., Overhead Transmission Line	Clute, Janet R.	1981
789	Trip Report on Cultural Resources Reconnaissance of Three Upland Disposal Sites on the Gulf Intercoastal Waterway, Bay County, FL.	Gibbens, Dorothy	1981
1134	Proposed Replacement of the Overstreet Bridge over the Intercoastal Waterway on SR 386 in Gulf County, FL.	Browning, William D.	1986
1387	Cultural Resources Investigation at Tyndall AFB, Bay County, FL.	Janice, Campbell; Thomas, Prentice	1985
2561	A Cultural Resources Assessment Report of the Gaskin to Wewahitchka 115 KV Transmission Line, Bay and Gulf Counties, Florida.	Brooms, MacDonald B.	1990
2717	Archaeological Survey of the Planned Gulf County Meter Station.	Athens, William	1991
3242	CRAS of SR-75 (US-231)	Irwin, C. L. and Carl McMurray	1992
3443	Archaeological Survey of the Planned Panama City North Meter Station and Lateral	Athens, William P.	1992
6433	An Archaeological Assessment of the Mexico Beach/St. Joe-Arvida Project, Bay County, FL.	Causey, Phillip	2001
6592	Supplemental Phase I Cultural Resources Survey and Archaeological Inventory of Proposed Additional Facilities and Corridor Alignments Associated with the Proposed Florida Gas Transmission Company Phase V Expansion Gulf Power Lateral in Bay and Washington Counties	Labadia, Catherine	2001
6657	Reconnaissance Survey, Sandy Creek Tract, Bay County, FL.	Myer, Joseph; Thomas, Prentice	2001
6808	Cultural Resources Assessment Addendum. An Archaeological Assessment of a 50-Acre Addition to the Mexico Beach/St. Joe-Arvida Project, Bay County, FL.	Causey, Phillip	2002
6989	An Intensive CRAS of the Mexico Beach River Camp, Bay County, FL.	Bland, Myles; Handley, Brent	2002
7444	A Cultural Resource Assessment of the Gulf to Bay Highway Project Development and Environment (PD&E) Study Area, Gulf and Bay Counties, FL.	Causey, Phillip	2002
8973	A Cultural Resources Assessment of the Bay Industrial Park Expansion, Bay County, Florida	Causey, Phillip	2003
10512	An Archaeological Assessment of the Mexico Beach/St. Joe-Arvida Annexation Parcel, Bay County, FL.	Causey, Phillip	2004
10893	A Cultural Resource Reconnaissance of the Proposed Bylsma Manor Subdivision in Bay County.	Earnest, Tray	2004
12219	A Cultural Resources Assessment of the Bonfire Beach Tract, Bay County, FL.	Stickler, Justin	2005
12243	Cultural Resources Investigations, Wetappo Creek Development Project, Gulf County, Florida	Campbell, L. Janice and Carrie Williams	2005
12779	A Cultural Resources Assessment of the Sagebrush Road Development Tract, Bay County, Florida	Cremer, David E.	2006

4.17 PRIME AND UNIQUE FARMLANDS

In accordance with the Farmland Protection Policy Act (FPPA) of 1984, coordination with the National Resource Conservation Service (NRCS) has been conducted for this project. The AD-1006 United States Department of Agriculture (USDA) Farmland Conversion Impact Rating form including the alternative alignments were sent to the NRCS on August 21, 2009. The NRCS Soil Scientist analyzed the AD-1006 form and returned it on August 31, 2009 (**Appendix C**).

Using the USDA-NRCS Soil Data Mart website, the NRCS determined that Prime Farmlands occur within the project area. Prime Farmland is defined as land that has the best combination of physical and chemical characteristics for producing agriculture, and is classified by soil types. In the Gulf Coast Parkway project area, MU 5 (Robertsdale fine sandy loam) and MU 17 (Florala loamy sand, 0 to 2% slopes) is identified as Prime Farmland. This area is shown in the Prime and Unique Farmland discussion in Section 4.

Unique Farmland is described as land other than Prime Farmland that is used for the production of specific high-value food and fiber crops. NRCS did not identify any Unique Farmlands occurring within the project area.

4.18 NATURAL AND BIOLOGICAL FEATURES

4.18.1 Water Resources

Water resources are abundant in the area and classified into three following categories: surface water, ground water, and wetlands.

Surface Water

The study area is located in St. Andrews Bay watershed, which is the only major basin in the Florida Panhandle that lies entirely in Florida (**Figure 4-8**). It includes Deer Point Lake Reservoir St. Joseph Bay, St. Andrews Bay, East Bay, West Bay and North Bay. No large river systems drain into the estuary comprised of the interconnected St. Andrews Bay, West Bay, North Bay, and East Bay, which contributes to its overall low turbidity, high water quality, high salinity, and clean sediment[7].

The Gulf of Mexico and East Bay are the predominate defining natural features adjacent to the study area. Other named waterbodies occurring within the project study area are listed in **Table 4-14.** The major freshwater creeks entering East Bay are those entering Callaway Bayou, Cooks Bayou, Laird Bayou, and Sandy Creek on the north side and the small creeks entering the bayous on Tyndall AFB.

Table 4-14: Surface Waterbodies within the Gulf Coast Parkway Study Area

Water Body			
Bayou George	Big Branch	Cypress Creek	Little Wetappo Creek
Bear Creek	Bird Road Slough	Eagle Nest Bayou	Mill Bayou Branch
Deer Point Lake	Blue Branch	Grape Swamp Branch	Minge Branch
East Bay	Boggy Creek	Hammock Branch	Mule Creek
North Bay	Brill Branch	Horseshoe Bayou	Olivers Creek
Baker Bayou	California Bayou	Intracoastal Waterway	Parker Branch
Farmdale Bayou	Callaway Bayou	Island Branch	Reedy Creek
Lathrop Bayou	Callaway Creek	Joe Lamb Branch	Richard Bayou
Walker Bayou	Clear Creek	Laird Bayou	Sandy Creek
St. Andrews Bay	Cooks Bayou	Lawton Branch	South Fork Bear Creek
St. Joseph Bay	Cushion Creek	Little Sandy Creek	Wetappo Creek
Beelwood Branch			

Figure 4-8: St. Andrew's Bay Watershed

Ground Water

This project does not lie within a Sole Source Aquifer or within the boundaries of a Sole Source Aquifer recharge and streamflow zone. The groundwater system underlying Bay and Gulf counties consists of three aquifers: 1) the Surficial, or water table, aquifer; 2) the upper Floridan, or Intermediate, aquifer; and 3) the lower Floridan aquifer. The water table aquifer lies just below the land surface and, except in low lying areas and extends throughout both counties. It is open to infiltration from rainfall in varying degrees, depending on the percolation characteristics of surface soils and the extent of impervious surfaces which have been created in the urban areas of each county. The water table aquifer and surface water systems are interconnected, with the aquifer contributing to base flow levels of the surface waters. The majority of water infiltrating the water table aquifer travels in a southwesterly direction from higher elevations to natural discharge areas such as lakes, streams or marshes.

The upper Floridan Aquifer has lower permeability than either the Surficial Aquifer or the lower Floridan Aquifer. However, in coastal areas of both counties, where the upper Floridan Aquifer reaches a thickness of 200 to 300 feet, it is a locally important aquifer. Underlying the upper Floridan Aquifer is the lower Floridan Aquifer. The aquifer thickness ranges from about 600 feet to more than 1,400 feet in both counties.

Drainage

There are three major basins within the study area: Callaway Creek, Sandy Creek, and Bayou George Creek. Callaway Creek and Sandy Creek drain to East Bay. Bayou George Creek drains to Deer Point Lake which eventually drains to St. Andrews Bay. All of the tributaries along the project area drain to either East Bay or St. Andrews Bay and are part of the St. Andrews Bay watershed.

Appropriate maintenance personnel were contacted to determine if there are hydraulic inadequacies with existing structures. Email correspondence with Harvey Brewton, FDOT Maintenance Engineer, Panama City, indicated that Sandy Creek Bridge on SR 22 has experienced flooding and may need more hydraulic capacity. Further details regarding drainage concerns for the project are discussed in the *Gulf Coast Parkway Location Hydraulics Report* and *Pond Requirements Report.*

Water Quality

All surface waters in Bay and Gulf counties have been classified by the FDEP. FDEP's Surface Water Classifications[27] are as follows: Class I waterbodies are potable water supplies used as drinking water supply, Class II waterbodies are for shellfish propagation and harvesting, and Class III waterbodies are used for recreation, propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Class I and Class II waters receive the highest protection. Those surface waters within the project study area that are Class I or Class II are listed in **Table 4-15**. All other surface waters are Class III waters. **Figure 4-9** shows the locations of the Class I, Class II, and Class III drainage basins in the study area.

Special surface water designations include Aquatic Preserves and OFW discussed in the following sections. Another special designation is Surface Water Improvement and Management (SWIM) priority waters. In the study area, the St. Andrew Bay watershed, including Deer Point Reservoir is included in the SWIM program. This program provides interagency cooperation to restore and manage at-risk surface waters.

Figure 4-9: Drainage Basins by Surface Water Classification

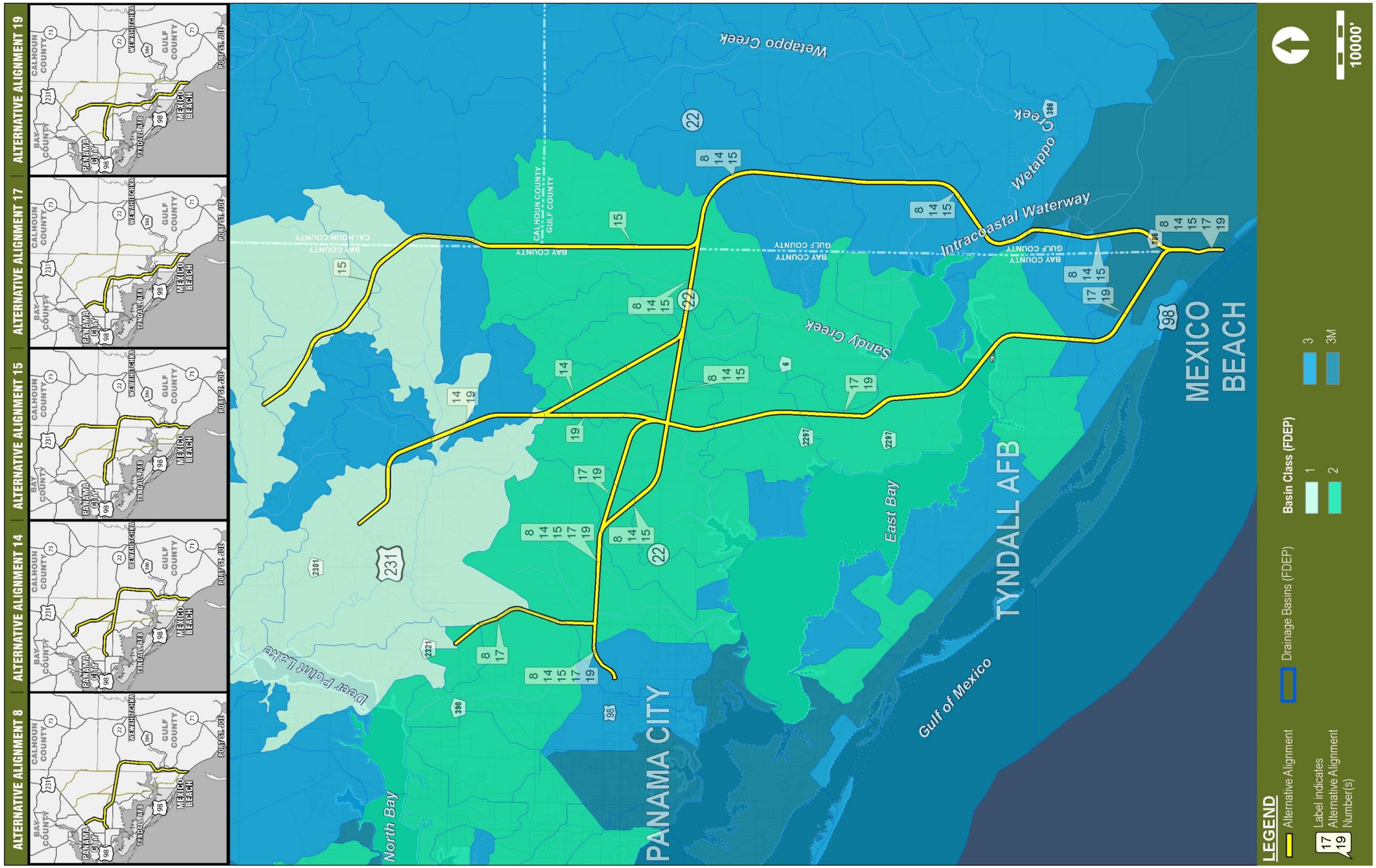


Table 4-15: Water Quality Classifications

Water Body	Class	Special Classification
Bayou George	Class I	
Bear Creek	Class I	SWIM
Deer Point Lake	Class I	SWIM
East Bay	Class II	
North Bay	Class II	
Baker Bayou	Class II (East Bay tributary)	
Farmdale Bayou	Class II (East Bay tributary)	
Lathrop Bayou	Class II (East Bay tributary)	
Walker Bayou	Class II (East Bay tributary)	
St. Andrews Bay	Class II	Aquatic Preserve
St. Joseph Bay	Class II	Aquatic Preserve

The Deer Point Reservoir is the source for almost all of the public drinking water in Bay County. Surface water in the reservoir is collected from the 442 square miles watershed surrounding the reservoir and 4 main tributaries comprising Econfina Creek, Bear Creek, Big Cedar Creek, and Bayou George Creek. The Deer Point Watershed spans the counties of Bay, Washington, Jackson, and Calhoun. On average, 600 million gallons of water per day enter the reservoir from its tributaries. Approximately 45 million gallons of water per day are withdrawn from the reservoir for industrial and potable water use. The remaining 550 million gallons of water per day overflows the dam and enters North Bay.

Potable water is pumped from the Deer Point Reservoir to the Bay County Water Treatment Plant. The water is disinfected, filtered and distributed to Panama City, Panama City Beach, Lynn Haven, Callaway, Cedar Grove, Gulf Coast Electric Cooperative, Mexico Beach, Parker, Springfield, and Tyndall AFB.

Potable water is obtained throughout many areas of Gulf County by NWFWMD permitted wells. The Fresh Water Canal in Gulf County is the primary alternative water supply source. The limitation of this source is permitted withdrawal levels from the Chipola River and water treatment plant capacities in coastal Gulf County. Action plans are underway for a permitted potable water supply system for coastal Gulf County nearly everywhere south of the ICWW. This, in turn, will support the goal of reducing aquifer withdrawals for the area.

Impaired Waters

The USEPA has requested that the states merge their reporting requirements under the Clean Water Act for Section 305 (b) surface water quality reports and the Section 303 (d) lists of impaired waters into an *Integrated Water Quality Monitoring and Assessment Report.* In response, the FDEP delineated waterbodies or waterbody segments in each of the state's river basins, assessed them for impairment based on individual parameters, and placed them into one of five major assessment categories and subcategories which provide information of the waterbody's status based on water quality, sufficiency of data, and the need for Total Maximum Daily Load (TMDL) development. A TMDL represents the maximum amount of a given pollutant that a waterbody can assimilate and meet the waterbody's designated beneficial uses. A waterbody that does not meet its designated beneficial uses is defined as impaired. The impairment may be for one or more parameter.

A second rotation of analysis by FDEP of the water quality in the basin resulted in revision to the list of verified impaired waterbody segments and delisting of some waterbody segments previously identified as impaired on January 15, 2010. Those previously identified verified impaired waterbody segments that are

to be delisted are: Waterbody Identification (WBID) 1172 (Pitts Bay), WBID 1061FB (Dupont Bridge), WBID 8015B (East County Line), WBID 8015C (Lookout Beach), WBID 8015D (Beacon Hill Beach), and WBID 8015E (St. Joe Beach). **Table 4-16** identifies those waterbody segments in the study area that appear on the most current verified impaired list. .

Table 4-16: Verified Impaired Waters in the Gulf Coast Parkway Study Area

WBID	Waterbody Segment Name	Type	Class	Parameter	Priority for TMDL Development
553A	Deerpoint Lake	Lake	3F	Mercury (in Fish Tissue)	High
1060	Direct Runoff to Bay	Stream	3F	Dissolved Oxygen (Nutrients, BOD)	Medium
				Nutrients (Chlorophyll-a)	Medium
1061D	East Bay (West Segment)	Estuary	3M	Mercury (in Fish Tissue)	High
1061F	East Bay (East Segment)	Estuary	2	Mercury (in Fish Tissue)	High
				Bacteria (in Shellfish)	Low
1061H	North Bay (North Segment 2)	Estuary	2	Mercury (in Fish Tissue)	High
1086	Mill Bayou	Estuary	2	Mercury (in Fish Tissue)	High
1088	Beatty Bayou	Estuary	2	Mercury (in Fish Tissue)	High
				Fecal Coliform	Low
1110	Calloway Bayou	Estuary	2	Mercury (in Fish Tissue)	High
1111	Sandy Creek	Stream	3F	Fecal Coliform	Low
				Bacteria (in Shellfish)	Low
1127	Laird Bayou	Estuary	2	Mercury (in Fish Tissue)	High
1141A	Parker Creek	Stream	3	Dissolved Oxygen (Nutrients, BOD)	Medium
1141B	Parker Bayou	Estuary	2	Fecal Coliform	Low
1142	Boggy Creek	Stream	2	Fecal Coliform	Low
1155	Little Sandy Creek	Stream	3F	Dissolved Oxygen (Nutrients, BOD)	Medium
1162	Mule Creek	Stream	2	Fecal Coliform	Low
1170	Direct Runoff to Bay	Estuary	3M	Mercury (in Fish Tissue)	High
1171	California Bayou	Estuary	2	Mercury (in Fish Tissue)	High
1172	Pitts Bay	Estuary	3M	Mercury (in Fish Tissue)	High
1184	Direct Runoff to Bay	Stream	3F	Dissolved Oxygen (Nutrients, BOD)	Medium
				Nutrients (Chlorophyll – a)	Medium
1196	Fred Bayou	Estuary	2	Mercury (in Fish Tissue)	High
1209	Eagle's Nest Bayou	Estuary	2	Mercury (in Fish Tissue)	High
				Fecal Coliform	Low
1211	Ammo Lake Bayou	Estuary	2	Mercury (in Fish Tissue)	High
1212	Direct Runoff to Bay	Estuary	3M	Mercury (in Fish Tissue)	High
1230	Walker Bayou	Estuary	2	Mercury (in Fish Tissue)	High
1235	Farmdale Bayou	Estuary	2	Mercury (in Fish Tissue)	High
1238	Panther Swamp	Estuary	3M	Mercury (in Fish Tissue)	High
1254	Brown's Bay	Estuary	3M	Mercury (in Fish Tissue)	High
8015	Gulf of Mexico	Coastal	3M	Mercury (in Fish Tissue)	High
8015A	Eighth Street	Beach	3M	Bacteria (in Shellfish)	Low

Notes:
BOD = Biological oxygen demand
F = Freshwater
M= Marine

Aquatic Preserves

In 1975, Florida enacted the Aquatic Preserve Act to protect unique and exceptional submerged coastal lands, including water quality. These preserves offer diverse wildlife and habitat, recreational opportunities, and protect Florida's cultural heritage. Two aquatic preserves are adjacent to the study area, the St. Joseph Bay Aquatic Preserve and the St. Andrew's Bay Aquatic Preserve. St. Joseph Bay is notable for being the only embayment in the eastern Gulf of Mexico without a major source of surface freshwater inflow.

Outstanding Florida Waters

OFW are surface waters receiving special protection due to their natural attributes (Section 403.061 F.S.). The intent of an OFW designation is to maintain the ambient water quality. Most OFWs are associated with managed areas in the state or federal park system. Other OFWs have been designated based on a finding that the waters are of exceptional recreational or ecological significance[9].

OFWs within or adjacent to the Gulf Coast Parkway study area include St. Andrew State Park Aquatic Preserve, St. Joseph Bay Aquatic Preserve, Dead Lakes State Recreation Area, and the Chipola River.

Coastal Barrier Resources

The Coastal Barrier Resources Act of 1982 (CBRA) designated undeveloped, private coastal barrier lands and associated aquatic habitat as part of the Coastal Barrier Resource System. This act prohibits federal expenditures that tend to encourage development or modification of coastal barriers. The Coastal Barrier Improvement Act of 1990 (CBIA) expanded the definition of coastal barriers and created a new category known as "Otherwise Protected Areas" (OPA). OPAs provide additional protection of coastal barrier lands designated for conservation purposes, such as national wildlife refuges and state parks, in order to discourage development of privately-owned inholdings. The only federal expenditure prohibited in OPAs is flood insurance. OPAs are identified by an upper-case "P" following the Unit number.

In Gulf and Bay Counties there are several Coastal Barrier Resource Units (**Table 4-17**).

Table 4-17 Coastal Barrier Resource Units in Bay and Gulf Counties

County	Unit Number	Unit Name
Bay County	P31	St. Andrew Complex
	P31, P31P	St. Andrew Complex
	93P	Phillips Inlet
Gulf County	P30, 30P	Cape San Blas
	FL-92	Indian Peninsula

Of the coastal barrier units listed in **Table 4-17**, the only units in the vicinity of the project study area are the Cape San Blas Unit (P30/P30P) and the St. Andrew Complex (P31/P31P). The Cap San Blas Unit includes most of St. Joseph Peninsula, St. Joseph Bay, and the mainland coastal areas from south of Cape San Blas Road north along the coastline to just south of St. Joe Beach. The St. Andrew Complex encompasses the St. Andrews State Recreation Area from Grand Lagoon eastward to the City of Mexico Beach. It also includes the Tyndall AFB shoreline from north of Davis Point eastward to the City of Mexico Beach.

4.18.2 Wetlands

Twenty (20) types of wetland communities were identified within the proposed project area (see **Table 4-18**). Approximately half of these systems are palustrine. Other wetland cover types within the project area include fresh, brackish, and salt marsh systems. Wetlands in the study area have been characterized using the *Florida Land Use Cover, and Forms Classification System*[34] (FLUCFCS).

Wetlands associated with the study area were largely grouped into two primary community types: hydric pine plantation (FLUCFCS Code 441W) and mixed forested wetland (630). The most abundant wetland community type encountered was hydric pine plantations, comprising approximately 60% of the wetlands encountered, which were characterized by slash pine Pinus elliottii) overstories and midstories of myrtle-leaved holly (*Ilex myrtifolia*), wax myrtle *(Myrica cerifera),* swamp titi *(Cyrilla racemiflora),* black titi *(Cliftonia monophylla),* and gallberry *(Ilex glabra).* The mixed forested wetland community comprised approximately 23% of the wetlands encountered and had a mixed overstory comprised of varying amounts of red maple *(Acer rubrum),* pond cypress, *(Taxodium ascendens)* sweetgum *(Liquidambar styraciflua),* slash pine, sweetbay (Magnolia virginiana), and blackgum *(Nyssa biflora),* and midstories typically consisting of sweet gallberry *(Ilex coriacea),* titi, gallberry, and wax myrtle. During the desktop analysis, many of the smaller streams were included within the mixed forested wetland (630) community type due to their size and riparian area composition and structure. FLUCFCS type 510 (Streams and Waterways) was generally used for named stream crossings or where open water was visible on the 2007 high resolution aerials.

Titi swamp (614) and cypress (621) wetlands were also encountered, 0.45% and 1.5% of wetlands respectively. Titi swamps were nearly completely dominated by swamp and black titi with sweet gallberry common in the midstory. Very few of the wetlands encountered were exclusively comprised of titi, but generally had a mixture of titi, slash pine, and various hardwoods associated with the system. Certain wetland systems may have had titi as a dominant understory species but were classified as mixed forested wetland (630) since there was generally an associated canopy comprised of mixed hardwood species. Cypress wetlands were characterized by pond cypress, myrtle-leaved holly and St. Johns wort (*Hypericum* spp.). Emergent tidal marsh is primarily associated with tidal streams and certain areas of East Bay and the connecting estuarine systems within the project area. Upland ecotones leading to these tidal systems are often affected by fire suppression and the overgrowth of shrub/scrub species. Depending on the specific waterbody and location, the emergent marsh systems are of relatively higher quality. More details in relation to potential emergent marsh impacts and observed quality are described in the Essential Fish Habitat (EFH) Assessment associated with this study.

The study area also contained areas of scrubby flatwoods and sandhill communities interspersed with wet flatwoods, titi drains, basin swamps, and cypress wetlands among other habitat types. Fire suppression in these areas is also common. These upland areas are often utilized by hunting clubs that plant and maintain small (typically < 1 acre) and widely distributed wildlife food plots. Further details regarding the wetlands and EFH environment in the study area are discussed in the *Gulf Coast Parkway Wetlands Evaluation Report* and the *Gulf Coast Parkway Essential Fish Habitat Report*.

Table 4-18: Wetland Systems (FLUCFCS) within the Study Area

FLUCFCS Designation	National Wetlands Inventory (NWI) Designation	Wetland Type	Community Description
210W	PEM2	Hydric Cropland and Pastureland	Cropland and Pastureland that may have been drained or converted wetlands.
441W	PFO	Hydric Pine Plantation	Planted pine plantation in wetlands.
443W	PFO	Forest Regeneration Areas	Areas in which it is clearly evident the harvested stands will be reforested through various silvicultural practices that do not involve direct planting of trees. The "w" designation denotes these forest regeneration areas are wetlands.
510	R2UB	Streams and Waterways	This category includes rivers, creeks, canals and other linear water bodies. The boundary between streams and lakes, reservoirs or the ocean is the straight line across the mouth of the stream unless the mouth is more than 1 mile wide.
510D	N/A or same as class it occurs within with "d" modifier	Ditch	Man-made ditches primarily for drainage purposes associated with roads.
524	POWH	Lakes	Lakes less than 10 acres which are dominant features
530	L1UB or L2UB	Reservoirs	Man-made water impoundment areas, excluding stormwater ponds.
541	E1/2	Embayments	Embayments are bays or estuaries that open directly to the Gulf of Mexico or the Atlantic Ocean.
614	PFO6	Titi Swamps	This community is almost exclusively made up of black titi, or swamp titi. Other species found include sweetbay, cypress, tupelos and a variety of wetland hardwoods.
620	PFO	Wetland Coniferous Forests	Wetland Coniferous Forests are wetlands which meet the crown closure requirements for coniferous forests and are the result of natural generation. These communities are commonly found in the interior wetlands in such as places as river flood plains, bogs, bayheads and sloughs.
621	PFO2	Cypress	This community is composed of pond cypress or bald cypress which is either pure or dominant. In the case of pond cypress, common associates are swamp tupelo, slash pine and black titi. In the case of bald cypress, common associates are water tupelo, red maple, American elm (*Ulmus americana*), overcup oak (*Quercus lyrata*) and water hickory (*Carya aquatica*). Bald cypress may be associated with laurel oak, sweetgum and sweetbay on less moist sites.
626	PFO4/PEM1	Hydric Pine Savannah	This community is an open forest with a sparse canopy of longleaf and/or slash pines with a ground cover of grasses, forbs, and wetland shrubs.
630	PFO	Wetland Forested Mixed	This category includes mixed wetlands forest communities in which neither hardwoods nor conifers achieve a 66 percent dominance of the crown canopy composition.
640	PEM1	Vegetated Non-forested Wetland	Include marshes and seasonably flooded basins and meadows. These communities are usually confined to relatively level, low-lying areas. This category does not include areas which have a tree cover which meets the crown closure threshold for the forested categories. Sawgrass and cattail (*Typha* spp.) are the predominant species in freshwater marshes while cordgrass and needlerush are the predominant species in the saltwater marsh communities.
641	PEM1	Freshwater Marsh	The communities included in this category are characterized by having one or more of the following species predominate: sawgrass, cattail, arrowhead (*Sagittaria* sp), maidencane, buttonbush, cordgrass, giant cutgrass (*Zizaniopsis miliacea*), switchgrass, bulrush (*Scirpus americanus*, *Scirpus validus*, *Scirpus robustus*), needlerush, common reed (*Phragmites communnis*, *Phragmites australis*), and arrowroot (*Thalia dealbata*, *Thalia geniuclata*).

FLUCFCS Designation	National Wetlands Inventory (NWI) Designation	Wetland Type	Community Description
642	EEM	Saltwater Marsh	This community is a coastal saltwater marsh that is characterized by having one or more of the following species predominate: saltwort (*Batis maritima*), glasswort (*Salicornia* spp.), fringe rush (*Fimbristylis spp.*), salt dropseed (*Sporobolus virginicus*), seaside daisy (*Borrichia frutescens*), black needle rush, and salt jointgrass (*Paspalum vaginatum*).
814W	PEM1	Hydric Road	Roadway/unimproved trail that is not paved and traversed through wetlands. Certain lengths of the roadway are considered jurisdictional wetlands.
817W	PEM1	Oil, Water, or Gas Long Distance Transmission Lines	Utility long distance transmission facilities through wetland systems that are typically maintained and commonly support heighten diversity of plant species due to overstory competition reduction.
832W	PEM1	Hydric Powerlines	Powerline facilities through wetland systems that are typically maintained and commonly support height diversity of plant species due to overstory competition reduction.

4.18.3 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (16 United States Code (USC) 1801 et seq. Public Law 104-208) reflects the Secretary of Commerce and Fishery Management Council's authority and responsibilities for the protection of essential fishery habitat. The Act specifies that each federal agency shall consult with the Secretary with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH identified under this Act. EFH is defined by the Act as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The National Marine Fisheries Service (NMFS) reviews potential impacts to EFH.

The Gulf Coast Parkway Project is within the Gulf of Mexico Fishery Management Council's (GMFMC) area of jurisdiction, which extends from the Texas/Mexico border to the Florida Keys and seaward to the limit of the Exclusive Economic Zone (200 nautical miles from the baseline of the territorial sea). The GMFMC separates EFH into estuarine and marine components. For the estuarine component, EFH is defined as all estuarine waters and substrates (mud, sand, shell, rock and associated biological communities), including the sub-tidal vegetation (seagrasses and algae) and adjacent inter-tidal vegetation (marshes and mangroves). In marine waters of the Gulf of Mexico, EFH is defined as all marine waters and substrates (mud, sand, shell, rock, hardbottom, and associated biological communities) from the shoreline to the seaward limit of the Exclusive Economic Zone (200 nautical miles from the baseline of the territorial sea), which extends from the Texas/Mexico border to the Florida Keys.

East Bay and Wetappo Creek within the study area contain EFH. The EFH that exists within the study area includes, but is not limited to: emergent vegetation, submerged aquatic vegetation, the water column, unconsolidated marine benthic sediments, shell, and woody debris substrates. The most commonly encountered EFH associated with the study area is primarily emergent vegetation.

4.18.3.1 Habitat Areas of Particular Concern

Habitat Areas of Particular Concern (HAPC) are defined as specific subsets of EFH that provide extremely important ecological functions or are especially vulnerable to degradation. Councils may designate a specific habitat area as an HAPC based on one or more of the following reasons: importance of the ecological function provided by the habitat, extent to which the habitat is sensitive to human-induced environmental degradation, whether, and to what extent, development activities are, or will be,

stressing the habitat type and rarity of the habitat type (NMFS, 2007). There are no HAPCs within or adjacent to the project site.

4.18.3.2 Managed Fisheries and Associated Species

The Magnuson-Stevens Act required that each Fishery Management Council amend their existing Fishery Management Plans (FMPs) to identify and describe EFH for each species under management. The GMFMC has identified and described EFH for 55 representative managed species and the coral complex. The project area has been reviewed to determine if EFH for the managed species are present. Although not managed by the GMFMC, certain highly migratory species also have NMFS-designated EFH requirements and occur within the Gulf of Mexico.

The project area has been reviewed to determine if EFH for these managed species are present. All possible EFH and the highly migratory species included in the GMFMC's jurisdiction are included in **Table 4-19**, along with an assessment of potential for each to occur within the project area.

Nineteen (19) of the representative managed species and 13 highly migratory species have a potential for occurrence in the project area (meaning they have a potential occurrence ranking of "low", "medium", or "high). The potential occurrence determination has been made because: 1) these species utilize the EFH found within the study area, i.e., estuarine waters, at some stage in their life cycles, and 2) corresponding EFH identified and described in species management plans is found within the study area. Species were not included in the analyses if required habitat conditions were absent within the study area.

Table 4-19: Managed Fish Species Potential to Occur within the Gulf Coast Parkway Study Area

Fish	Species	Potential Occurrence in Project Area[3]	Comments
Shrimp[1]	Brown shrimp (*Farfantepenaeus aztecus)*	**Medium**	Found in estuarine areas. EFH for the Shrimp FMP is found in project area.
	Pink shrimp (*F. duorarum*)	**Medium**	Found in estuarine areas. EFH for the Shrimp FMP is found in project area.
	Royal red shrimp (*Pleoticus robustus*)	None	An off-shore/deep-water species (180 – 730 meters).
	White shrimp (*Litopenaeus setiferus*)	**Medium**	Found in estuarine areas. EFH for the Shrimp FMP is found in project area.
Red Drum[1]	Red drum (*Sciaenops ocellatus*)	**Medium**	Found in estuarine areas. EFH for the Red Drum FMP is found in project area.
Reef Fish[1]	Almaco jack (*Seriola rivoliana*)	None	Found in near and off shore waters.
	Anchor tilefish (*Caulolatilus intermedius*)	None	Found in off shore waters.
	Banded rubberfish (*S. zonata*)	None	Found in near and off shore waters. Not common in the central part of the Gulf of Mexico.
	Blackfin snapper (*Lutjanus buccanella*)	None	Found in near and off shore waters.
	Blackfin tilefish (*C. cyanops*)	None	Found in off shore waters.
	Black grouper (*Mycteroperca bonaci*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Blueline tilefish (*C. microps*)	None	Found in off shore waters.
	Cubera snapper (*L. cyanopterus*)	**Low**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. Not common in Gulf of Mexico. EFH for the Reef Fish FMP is found in project area.
	Dog snapper (*L. jocu*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Dwarf sand perch (*Diplectrum bivittatum*)	None	Found in near and off shore waters.
	Gag grouper (*M. microlepis*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Goldface tilefish (*C. chrysops*)	None	Found in off shore waters.
	Goliath grouper (*Epinephelus itajara*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Gray snapper (*L. griseus*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Gray triggerfish (*Balistes capriscus*)	None	Found in near and off shore waters.
	Greater amberjack (*S. dumerili*)	None	Found in near and off shore waters.

Fish	Species	Potential Occurrence in Project Area[3]	Comments
Reef Fish[1] (CONTINUED)	Hogfish (*Lachnolaimus maximus*)	**Medium**	Found in near shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Lane snapper (*L. synagris*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Lesser amberjack (*S. fasciata*)	None	Found in off shore waters.
	Mahogany snapper (*L. mahogoni*)	None	Found in near shore waters.
	Marbled grouper (*E. inermis*)	None	Found in near and off shore waters.
	Misty grouper (*E. mystacinus*)	None	Found in off shore waters.
	Mutton snapper (*L. analis*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Nassau grouper (*E. striatus*)	None	Found in near and off shore waters in the Keys.
	Queen snapper (*Etelis oculatus*)	None	Found in off shore waters.
	Red hind (*Epinephelus guttatus*)	None	Found in near and off shore waters.
	Red grouper (*E. morio*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Red snapper (*L. campechanus*)	None	Found in near and off shore waters.
	Rock hind (*E. adscensionis*)	None	Found in near and off shore waters.
	Sand perch (*Diplectrum formosum*)	None	Found in near shore waters.
	Scamp grouper (*M. phenax*)	None	Found in near and off shore waters.
	Schoolmaster (*L.apodus*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Silk snapper (*L. vivanus*)	None	Found in off shore waters.
	Snowy grouper (*E. niveatus*)	None	Found in near and off shore waters.
	Speckled hind (*E. drummondhayi*)	None	Found in off shore waters.
	Tilefish (*Lopholatilus chamaeleonticeps*)	None	Found in off shore waters.
	Vermillion snapper (*Rhomboplites aurorubens*)	None	Found in near and off shore waters.
	Warsaw grouper (*E. nigritus*)	None	Found in near and off shore waters.
	Wenchman (*Pristipomoides aquilonaris*)	None	Found in off shore waters.
	Yellowedge grouper (*E. flavolimbatus*)	None	Found in off shore waters.

Fish	Species	Potential Occurrence in Project Area[3]	Comments
Reef Fish[1] (CONTINUED)	Yellowfin grouper (*M. venenosa*)	**Low**	Found in near and off shore waters in the southern Gulf of Mexico; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Yellowmouth grouper (*M. interstitialis*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Reef Fish FMP is found in project area.
	Yellowtail snapper (*Ocyurus chrysurus*)	**Medium**	Found in near and off shore waters; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent.EFH for the Reef Fish FMP is found in project area.
Stone Crab[1]	Florida stone crab (*Menippe mercenaria*)	None	Found in South Florida waters.
	Gulf stone crab (*M. adina*)	**Medium**	Found in estuarine and near shore waters. EFH for the Stone Crab FMP is found in project area.
Spiny Lobster[1]	Spiny lobster (*Panulirus argus*)	None	Found in South Florida waters. No habitat or EFH within project area.
	Slipper lobster (*Scyllarides nodife*)	None	Found in South Florida waters. No habitat or EFH within project area.
Coral and Coral Reef[1]	Varied coral species and coral reef communities comprised of several hundred species	None	No habitat or EFH within project area.
Coastal Migratory Pelagic [1]	Cobia (*Rachycentron canadum*)	None	A near and off-shore species.
	King mackerel (*Scomberomorus cavalla*)	None	A near and off-shore species.
	Spanish mackerel (*S. maculatus*)	**Medium**	A near shore species; juveniles and adults may inhabit estuarine areas but are not estuarine-dependent. EFH for the Coastal Migratory Pelagics FMP is found in project area.
Highly Migratory Species - Tuna[2]	Albacore *(Thunnus alalunga)*	None	Found in off shore waters.
	Atlantic bigeye *(T. Obesus)*	None	Found in off shore waters. Rare in Gulf of Mexico.
	Atlantic bluefin *(T. thynnus)*	None	Found in off shore waters.
	Atlantic yellowfin *(T. albacares)*	None	Found in off shore waters.
	Skipjack *(Katsuwonus pelamis)*	None	Found in off shore waters.
Highly Migratory Species - Swordfish[2]	Swordfish *(Xiphias gladius)*	None	Found in off shore waters.
Highly Migratory Species - Billfish[2]	Blue marlin *(Makaira nigricans)*	None	Found in off shore waters.
	Sailfish *(Istiophorus platypterus)*	None	Found in off shore waters.
	White marlin *(T. albidus)*	None	Found in off shore waters.
	Longbill spearfish *(Tetrapturus pfluegeri)*	None	Found in off shore waters.
Highly Migratory Species - Large Coastal Sharks[2]	Basking shark *(Cetorhinus maximus)*	None	Found in off shore waters. Primarily found in the Atlantic.
	Great hammerhead shark *(Sphyrna mokarran)*	**Low**	Found in shallow coastal waters and estuaries. EFH identified for adults is just east of the project.

Fish	Species	Potential Occurrence in Project Area[3]	Comments
Highly Migratory Species - Large Coastal Sharks[2], cont.	Scalloped hammerhead shark *(S. lewini)*	**Medium**	Found in shallow coastal waters.EFH for neonates includes shallow coastal bays and estuaries less than 5 m deep from Apalachee Bay to St. Andrews Bay. Designated EFH includes West Bay.
	Smooth hammerhead shark *(S. zygaena)*	None	Found in off shore waters. Primarily found in the Atlantic.
	White shark *(Carcharodon carcharias)*	None	Found in off shore waters. Primarily found in the Atlantic.
	Nurse shark *(Ginglymostoma cirratum)*	None	Found in shallow coastal waters.
	Bignose shark *(Carcharhinus altimus)*	None	Found in off shore waters. Primarily found in the Atlantic.
	Blacktip shark *(C. limbatus)*	None	Found in shallow coastal waters. EFH for neonates and juveniles identified in vicinity of project.
	Bull shark *(C. leucas)*	**Medium**	Found in shallow coastal waters and estuaries, and often enters fresh water. EFH for juveniles identified in the project area.
	Caribbean reef shark *(C. perezi)*	None	Found in coastal water of South Florida and the Caribbean.
	Dusky shark *(C. obscurus)*	None	Found in near and off shore waters, primarily in the Atlantic.
	Galapagos shark *(C. galapagensis)*	None	Found in off shore waters.
	Lemon shark *(Negaprion brevirostris)*	None	Found in shallow coastal waters and estuaries. Primarily found in Peninsular Florida and the Keys.
	Narrowtooth shark *(C. brachyurus)*	None	Found in off shore waters.
	Night shark *(C. signatus)*	None	Found in off shore waters. Primarily found in the Atlantic.
Highly Migratory Species - Small Coastal Sharks[2]	Sandbar shark *(C. plumbeus)*	**Low**	Found in shallow coastal waters. EFH identified for neonates, juveniles, and adults is just east of the project.
	Silky shark *(C. falciformis)*	None	Found in off shore waters.
	Spinner shark *(C. brevipinna)*	**Low**	Found in shallow coastal waters. EFH for neonates includes shallow coastal bays and estuaries less than 5 m deep from Apalachee Bay to St. Andrews Bay.
	Tiger shark *(Galeocerdo cuvieri)*	**Low**	Found in shallow coastal and off shore waters. EFH identified in vicinity of project.
	Bigeye sand tiger shark *(Odontaspis noronhai)*	None	Found in off shore waters.
	Sand tiger shark *(O. taurus)*	None	Found in shallow coastal waters. Primarily found in the Atlantic.
	Whale shark *(Rhinocodon typus)*	None	Found in off shore waters.
	Atlantic angel shark *(Squatina dumerili)*	None	Found in shallow coastal waters.
	Bonnethead shark *(Sphyrna tiburo)*	**Low**	Found in shallow coastal waters, inlets, and estuaries of peninsular Florida and Texas.
	Atlantic sharpnose shark *(Rhizoprionodon terraenovae)*	**Low**	Found in shallow coastal waters including bays and estuaries. EFH for neonates includes shallow coastal bays and estuaries less than 5 m deep from Apalachee Bay to St. Andrews Bay.

Fish	Species	Potential Occurrence in Project Area[3]	Comments
Highly Migratory Species - Small Coastal Sharks[2]. cont.	Blacknose shark *(C. acronotus)*	**Low**	Found in shallow coastal waters. EFH for juveniles includes shallow coastal bays and estuaries less than 5 m deep with expanses of seagrasses from Apalachee Bay to St. Andrews Bay.
	Caribbean sharpnose shark *(R. porosus)*	**Low**	Found in off shore waters. Primarily found in the Atlantic.
	Finetooth shark *(C. isodon)*	**Low**	Found in shallow coastal waters. EFH for neonates, juveniles, and adults include waters less than 5 m deep on the seaward side of coastal islands from Apalachee Bay to St. Andrews Bay.
	Smalltail shark *(C. porosus)*	**Low**	Found in shallow coastal waters and estuaries.
Highly Migratory Species - Pelagic Sharks[2]	Bigeye sixgill shark *(Hexanchus vitulus)*	None	Found in off shore waters.
	Sevengill shark *(Heptranchias perlo)*	None	Found in off shore waters.
	Sixgill shark *(H. griseus)*	None	Found in off shore waters.
	Longfin mako shark *(Isurus paucus)*	None	Found in off shore waters.
	Porbeagle shark *(Lamna nasus)*	None	Found in off shore waters. Primarily found in the Atlantic.
	Shortfin mako shark *(I. oxyrinchus)*	None	Found in off shore waters. Primarily found in the Atlantic.
	Blue shark *(Prionace glauca)*	None	Found in off shore waters. Primarily found in the Atlantic.
	Oceanic whitetip shark *(C. longimanu)*	None	Found in off shore waters. Primarily found in the Atlantic.
	Bigeye thresher shark *(Alopias superciliosus)*	None	Found in off shore waters. Primarily found in the Atlantic.
	Common thresher shark *(A. vulpinus)*	None	Found in off shore waters. Primarily found in the Atlantic.

Notes:

1. Fishery Management Plans and Managed Species for the Gulf of Mexico. Appendix 2, Essential Fish Habitat: A Marine Fish Habitat Conservation Mandate for Federal Agencies. Gulf of Mexico Region. National Marine Fisheries Service, Habitat Conservation Division, Southeast Regional Office. Revised 08/2008/
2. Species Managed in the Gulf of Mexico under Federally Implemented Fishery Management Plans. Appendix 3, Essential Fish Habitat: A Marine Fish Habitat Conservation Mandate for Federal Agencies. Gulf of Mexico Region. National Marine Fisheries Service, Habitat Conservation Division, Southeast Regional Office. Revised 08/2008/
3. Ratings are low, medium, and high. Ratings based on presence of suitable habitat as follows:
   Low – suitable habitat present in Project Area.
   Medium – suitable habitat present in Project Area and EFH for managed species is present near Project Area.
   High – suitable habitat present in Project Area and EFH for managed species is present within Project Area.

Sources:

NMFS. 2006. Final Consolidated Atlantic Highly Migratory Species Fishery Management Plan. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document. pp. 1600.

GMFMC. 2004. Final Environmental Impact Statement for the Generic Essential Fish Habitat Amendment to the Fishery Management Plans of the Gulf of Mexico (GOM): Shrimp Fishery of the Gulf of Mexico, Red Drum Fishery of the Gulf of Mexico, Reef Fish Fishery of the Gulf of Mexico, Stone Crab Fishery of the Gulf of Mexico, Coral and Coral Reef Fishery of the Gulf of Mexico, Spiny Lobster Fishery of the Gulf of Mexico and South Atlantic, Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic. GMFMC, Tampa, FL.

4.18.4 Wildlife and Habitat

The determination of wildlife occurrence and potential utilization of the project area was initially desktop-based, and then supported by field survey analysis, applying information obtained from the FFWCC and Florida Natural Areas Inventory (FNAI)[34] as described in the *Endangered Species Biological Assessment Report(ESBAR)* [36] prepared for this project.

Project alternative alignments were evaluated for the potential occurrence of federal and state listed (threatened and endangered) species. Literature reviews were conducted and data collected from the United States Fish and Wildlife Service (USFWS), the NMFS, the FFWCC, the Florida Marine Research Institute (FMRI), and the FNAI.

Information sources and databases utilized include the following:

- USFWS Species List for Bay, Gulf, and Calhoun Counties
- FNAI Element Occurrence Data (publically available)
- FNAI element occurrence report was requested on September 24, 2007 and received on October 2, 2007 and October 15, 2007 (can be made available upon request).
- FNAI-The Nature Conservancy (TNC) 2001 (FNAI- TNC Report 2001). Rare Plant Conservation through Private Action: Final Report to USFWS (agreement 1448-40181-98-J-016).
- FFWCC Eagle Locator
- FFWCC Water Bird Colony Data
- USDA, NRCS, Soil Survey Geographic (SSURGO) database for Bay County, Florida, 2006 http://SoilDataMart.nrcs.usda.gov/
- USDA, NRCS, SSURGO database for Gulf County, Florida, 2006 http://SoilDataMart.nrcs.usda.gov/
- USDA, NRCS, SSURGO database for Calhoun County, Florida, 2006 http://SoilDataMart.nrcs.usda.gov/
- USFWS NWI Database
- USFWS Classification of Wetlands and Deepwater Habitats of the United States (1979)
- NWFWMD, FLUCFCS data (1995)
- Aerial photographs of the project area from 1953, 2004, and 2007
- United States Geological Survey (USGS) Topographic Quadrangle maps, 7.5 minute series
- Florid Department of Transportation (FDOT), FLUCFCS, Level III, third ed., 1999.

Wildlife occurrence and potential utilization analysis of the project area was primarily desktop-based, applying information obtained from the FFWCC and FNAI. The following data sets were obtained from the FFWCC and reviewed:

- *Florida Vegetation and land cover March 2004*
- *Integrated Wildlife Habitat Ranking System 2007*

- *Selected wildlife conservation GIS data layers June 2007*
- *Wildlife conservation projects – GIS data layers July 2007*
- *Wildlife Habitat Conservation Needs in Florida: Updated Recommendations for Strategic Habitat Conservation Areas August 2007*.

The USFWS documents 122 listed species (57 animals and 65 plants) potentially occurring in Bay, Gulf, and Calhoun Counties (**Table 4-20**). This species list is expansive and represents a "first approximation" of species that could be potentially involved with the Build Alignments. For example, the USFWS maintains a county list of species that are classified as threatened, endangered, and/or "other species of concern". Species in this final category are typically designated as "consideration encouraged". Based on discussions with USFWS and FFWCC, it was determined that species designated as "consideration encouraged" should be reviewed during initial project planning. In addition, it should be noted that several species listed for Calhoun County may not have direct involvement with Alternative Alignments, since only a relatively short section of Alternative Alignment 15 crosses into Calhoun County. Therefore, species such as listed mussels may be located in watersheds that are not directly or indirectly affected by Alternatives. Brief descriptions of the species can be found in the *ESBAR*.

An initial desktop habitat evaluation of the study area was conducted based on interpretation of both historical and recent aerial photographs provided by FDEP Land Boundary Information System (Labins) 2004 Digital Ortho Quarter Quads (DOQQ) Aerial Photography (2004 Color State Plane). Proposed project corridors and alternative alignments were overlaid on aerial photos to identify potential involvement with listed species identified in **Table 4-20**. This general desktop analysis, project staff knowledge of the area, and results of preliminary field reconnaissance, formed the rationale and basis for subsequent field surveys conducted within and in the vicinity of the alternatives. When appropriate, specific survey protocols were utilized. Field survey results are discussed in Section 4 of this report.

As described above, a potential pool of 122 listed species are identified (**Table 4-20**). Of the 57 wildlife species, 21 are federally-listed (endangered or threatened), one is a federal candidate species (red knot), one is protected by other federal acts (bald eagle), 23 are state listed (endangered, threatened, or species of special concern {SSC}), and 11 have a "consideration encouraged" designation. Of the 65 plant species included in **Table 4-20**, eight are federally-listed, 52 are state listed, and five are identified as "consideration encouraged".

Table 4-20: Protected Species Potentially Occurring in the Study Area

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	COUNTY OCCURRENCE
FISH				
Acipenser oxyrinchus desotoi	Gulf sturgeon	T CH	SSC	Bay, Gulf, Calhoun
Cyprinella callitaenia	Bluestripe shiner		CE	Bay, Gulf
Micropterus sp.	Shoal bass		SSC	Bay
Pteronotropis welaka	Bluenose shiner		SSC	Bay, Gulf
AMPHIBIANS and REPTILES				
Alligator mississippiensis	American alligator	T SA	SSC	Bay, Gulf, Calhoun
Ambystoma bishopi	Reticulated flatwoods salamander	T	SSC	Bay, Gulf, Calhoun
Caretta caretta	Loggerhead	T	T	Bay, Gulf
Chelonia mydas	Green sea turtle	E	E	Bay, Gulf
Dermochelys coriacea	Leatherback sea turtle	E	E	Bay, Gulf
Drymarchon corais couperi	Eastern indigo snake	T	T	Bay, Gulf, Calhoun
Eretmochelys imbricata	Hawksbill sea turtle	E	E	Bay, Gulf
Eumeces anthracinus	Coal skink		CE	Gulf, Calhoun
Gopherus polyphemus	Gopher tortoise	CE	SSC	Bay, Gulf, Calhoun
Graptemys barbouri	Barbour's map turtle	CE	SSC	Gulf, Calhoun
Lepidochelys kempii	Kemp's ridley sea turtle	E	E	Bay, Gulf
Macroclemys temminckii	Alligator snapping turtle	CE	SSC	Bay, Gulf, Calhoun
Nerodia clarkii clarkii	Gulf saltmarsh snake		CE	Bay, Gulf
Pituophis melanoleucus mugitus	Florida pine snake	CE	SSC	Bay, Gulf, Calhoun
Pseudemys concinna suwanniensis	Suwannee cooter		SSC	Gulf, Calhoun
Rana capito	Gopher frog	CE	SSC	Bay, Gulf, Calhoun
BIRDS				
Aimophila aestivalis	Bachman's sparrow		CE	Bay, Gulf
Aramus guarana	Limpkin		SSC	Gulf, Calhoun
Calidris canutus	Red knot	C		Bay, Gulf
Charadrius alexandrinus tenuirostris	Southeastern snowy plover	CE	T	Bay, Gulf
Charadrius melodus	Piping plover	T, CH	T	Bay, Gulf
Cistothorus palustris marianae	Marian's marsh wren		SSC	Bay
Dendroica dominica stoddardi	Stoddard's yellow-throated warbler	CE		Bay
Egretta caerulea	Little blue heron		SSC	Bay, Gulf, Calhoun
Egretta thula	Snowy egret		SSC	Gulf
Egretta tricolor	Tricolored heron		SSC	Bay, Gulf, Calhoun
Falco peregrinus tundrus	Artic peregrine falcon	CE	E	Bay, Gulf, Calhoun
Falco sparverius paulus	Southeastern American kestrel	CE	T	Bay, Gulf, Calhoun
Grus canadensis pratensis	Florida sandhill crane		T	Gulf
Haematopus palliatus	American oystercatcher		SSC	Gulf
Haliaeetus leucocephalus	Bald eagle	BGEPA, MBTA		Bay, Gulf, Calhoun
Mycteria americana	Wood stork	E	E	Bay, Gulf, Calhoun
Pelecanus occidentalis	Brown pelican		SSC	Bay, Gulf
Picoides borealis	Red-cockaded woodpecker	E	SSC	Bay, Gulf, Calhoun
Rynchops niger	Black skimmer		SSC	Bay, Gulf, Calhoun
Sterna antillarum	Least tern		T	Bay, Gulf

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	COUNTY OCCURRENCE
MAMMALS				
Peromyscus polionotus allophrys	Choctawhatchee beach mouse	E, CH	E	Bay
Peromyscus polionotuspeninsularis	St. Andrew beach mouse	E, CH	E	Bay, Gulf
Plecotus rafinesquii	Southeastern big-eared bat		CE	Gulf, Calhoun
Trichechus manatus latirostris	West Indian manatee	E	E	Bay, Gulf
Ursus americanus floridanus	Florida black bear	CE	T	Bay, Gulf, Calhoun
INVERTEBRATES				
Alasmidonta triangulata	Southern elktoe (mussel)	CE		Calhoun
Amblema neislerii	Fat threeridge	E	CE	Bay, Calhoun
Anodonta heardi	Apalachicola floater	CE		Calhoun
Anodontoides radiates	Rayed creekshell	CE		Gulf, Calhoun
Elliptio chipolaensis	Chipola slabshell	T, CH		Gulf, Calhoun
Elliptiodeus sloatianus	Purple bankclimber	T, CH		Gulf, Calhoun
Hamiota subangulata	Shinyrayed pocketbook	E, CH		Gulf, Calhoun
Medionidus penicillatus	Gulf moccasinshell	E, CH		Bay, Gulf, Calhoun
Pleurobema pyriforme	Oval pigtoe	E, CH		Bay, Gulf, Calhoun
Procambarus econfinae	Panama City crayfish	CE	**SSC**	Bay
Quadrula infucata	Scupltured pigtoe	CE		Gulf, Calhoun
Villosa villosa	Downy rainbow	CE		Bay, Gulf, Calhoun
PLANTS				
Arnoglossum album	White Indian plantain	CE	E	Bay, Gulf
Asclepias viridula	Southern milkweed	CE	T	Bay, Gulf
Baptisia megacarpa	Apalachicola wild indigo		E	Bay, Calhoun
Boltonia apalachicolensis	Apalachicola dolls daisy	CE		Gulf
Bumelia thornei	Buckthorn	CE	E	Gulf
Bumelia lycioides	Buckthorn	CE	E	Calhoun
Calamovilfa curtissii	Curtiss' sandgrass	CE	T	Bay
Calycanthus floridus	Sweet-shrub		E	Bay
Carex baltzellii	Baltzell's sedge	CE	T	Bay, Calhoun
Chrysopsis gossypina ssp. Cruiseana	Cruise's goldenaster	CE	E	Bay
Cleistes divaricata	Rosebud orchid or spreading pagonia		T	Bay
Cornus alterniflora	Alternate-leaf or pagoda dogwood		E	Bay, Calhoun
Cuphea aspera	Tropical waxweed	CE		Gulf, Calhoun
Drosera filiformis	Dew-thread		E	Bay
Drosera intermedia	Spoon-leaved sundew		T	Bay, Gulf, Calhoun
Eriocaulon nigrobracteatum	Dark-headed hatpin	CE		Bay, Gulf, Calhoun
Euphorbia telephioides	Telephus spurge	T	E	Bay, Gulf
Eurybia spinulosus	Pine-woods aster	CE	E	Bay, Gulf, Calhoun
Gentiana pennelliana	Wiregrass gentian	CE	E	Bay, Gulf, Calhoun
Harperocallis flava	Harper's beauty	E	E	Bay, Gulf, Calhoun
Hymenocallis henryae	Henry's spiderlily	CE	E	Bay, Gulf
Hypericum lissophloeus	Smooth-barked St. John's wort	CE	E	Bay
Justicia crassifolia	Thick-leaved water willow	CE	E	Bay, Gulf
Kalmia latifolia	Mountain laurel		T	Bay, Calhoun
Lilium catesbaei	Southern red lily		T	Bay, Gulf, Calhoun

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	COUNTY OCCURRENCE
Linum sulcatum var harperi	Harper's grooved yellow flax	CE	E	Gulf
Linum westii	West's flax	CE	E	Gulf, Calhoun
Lupinus westianus	Gulf coast lupine	CE	T	Bay, Gulf
Lythrum curtissii	Curtiss' loosestrife	CE	E	Bay, Calhoun
Macbridea alba	White birds-in-a-nest	T	E	Bay, Gulf
Macranthera flammea	Hummingbird flower		E	Bay, Calhoun
Magnolia ashei	Ashe's magnolia		E	Bay
Magnolia pyramidata	Pyramid magnolia		E	Bay, Calhoun
Oxypolis filiformis greenmanii	Giant water-dropwort		E	Bay, Gulf, Calhoun
Paronychia chartacea ssp. minima	Crystal lake nailwort	T	E	Bay
Physocarpus opulifolius	Eastern ninebark		E	Calhoun
Pinckneya bracteata	Hairy fever tree		T	Bay
Pinguicula ionantha	Godfrey's butterwort	T	E	Bay, Gulf, Calhoun
Pinguicula lutea	Yellow butterwort		T	Bay, Gulf
Pinguicula planifolia	Chapman's butterwort	CE	T	Bay, Gulf, Calhoun
Pinguicula primulifolia	Primrose-flower butterwort		E	Bay
Pityopsis flexuosa	Bent golden aster	CE	E	Bay, Gulf
Platanthera ciliaris	Yellow fringed orchid		T	Bay, Gulf, Calhoun
Platanthera integra	Yellow fringeless orchid	CE	E	Bay, Gulf, Calhoun
Platanthera nivea	Snowy orchid		T	Bay, Gulf, Calhoun
Polygonella macrophylla	Large-leaved jointweed	CE	T	Bay
Rhexia parviflora	Small-flowered meadowbeauty	CE	E	Bay, Gulf, Calhoun
Rhododendron austrinum	Orange azalea		E	Calhoun
Rhododendron chapmanii	Chapman's rhododendron	E	E	Gulf
Rudbeckia nitida	St. John's black-eyed susan	CE	E	Bay
Sarracenia leucophylla	White-top pitcher plant	CE	E	Bay, Gulf, Calhoun
Sarracenia minor	Hooded pitcher plant		T	Gulf
Sarracenia psittacina	Parrot pitcher plant		T	Bay, Gulf, Calhoun
Sarracenia purpurea	Decumbant pitcher plant		T	Bay, Gulf, Calhoun
Scutellaria floridana	Florida skullcap	T	E	Bay, Gulf
Sideroxylon thornei	Thorne's buckthorn		E	Gulf, Calhoun
Spigelia gentianoides	Gentian pinkroot	E	E	Calhoun
Spiranthes laciniata	Lace-lip		T	Bay
Stachydeoma graveolens	Mock pennyroyal		E	Bay
Stewartia malacodendron	Silky camellia		E	Bay, Calhoun
Verbesina chapmanii	Chapman's crownbeard	CE	T	Bay, Gulf, Calhoun
Xyris drummondii	Drummond's yellow-eyed grass	CE		Bay, Gulf
Xyris isoetifolia	Quillwort yellow-eyed grass	CE		Bay, Gulf
Xyris longisepala	Karst (Kral's) pond xyris		E	Bay
Xyris scabrifolia	Harper's yellow-eyed grass	CE	T	Bay, Gulf, Calhoun

Abbreviations used in the table: E=endangered, T=threatened, P=proposed, C=candidate, SA=similar appearance, SSC=species of special concern, CE=consideration encouraged, CH=Critical Habitat, BGEPA=Bald and Golden eagle protection Act, MBTA =Migratory Bird Treaty Act

4.19 PHYSICAL FEATURES

4.19.1 Air Quality

Two air quality technical memoranda, one for Bay County and one for Gulf County, have been prepared to document the existing air quality conditions and the project's consistency with of the National Ambient Air Quality Standards (NAAQS). The analyses were conducted in accordance with the FDOT PD&E Manual, Part 2 Chapter 16 (9/13/06).

The Clean Air Act and its amendments led to the establishment of NAAQS, by the USEPA, for six air pollutants: carbon monoxide (CO), sulfur oxide, ozone (O_3), suspended particulate matter (PM_{10}), nitrogen dioxide, and lead. In 1997, USEPA added NAAQS for eight-hour O_3 and for very fine particulate matter ($PM_{2.5}$). The one-hour O_3 standard was revoked in 2005.

In accordance with the Clean Air Act, all areas within the United States are designated with respect to the NAAQS as being "attainment", "non-attainment", "maintenance", or "unclassifiable". Areas designated as attainment have air quality conditions better than the NAAQS standards. Accordingly, areas designated non-attainment have air quality conditions worse than the NAAQS standards. Maintenance areas are non-attainment areas that have been re-designated to attainment status. Areas that are unclassifiable have insufficient data to form a basis for attainment status.

The project is in an area that is currently designated as attainment for all the NAAQS. Therefore, the Transportation Conformity Regulations (40 Code of Federal Regulations {CFR} Part 93) do not apply.

4.19.2 Noise

A noise study report has been prepared to document the analysis of potential traffic noise effects of the project alternatives which are discussed in Section 4 of this report. This analysis was conducted in accordance with FDOT's *PD&E Manual,* Part 2, Chapter 17 and Title 23 CFR Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (July 13, 2010) as required by the Noise Control Act of 1972.

A noise sensitive area is any property (owner occupied, rented, or leased) where frequent exterior human use occurs and a lowered noise level would benefit the use of the site. Noise sensitive areas are typically associated with land uses such as residential, recreational areas, motels/hotels, churches, schools, libraries, and hospitals.

The sensitive receptors for the Gulf Coast Parkway were concentrated in seven areas along the Build Alternatives: in Mexico Beach, the Overstreet community, Star Avenue at Tram Road, the Nehi/Cherokee Heights area, the Tyndall Parkway area, Lee Road area, and the US 231 vicinity of Camp Flowers Road. Noise sensitive locations are shown in the discussion of noise impacts in Section 8 of this report.

4.19.3 Potential Contamination Sites

A database search has been conducted to determine potentially contaminated sites in the study area. The contamination investigation of the study area resulted in the identification of twenty-seven potentially contaminated sites, as listed in **Table 4-21** and shown in **Figure 4-10**. Further details regarding contamination in the study area are discussed in the *Gulf Coast Parkway Contamination Screening Evaluation Report.*

Table 4-21: Potential Contamination Sites in the Gulf Coast Parkway Study Area

Map ID	Site Name and Address	Facility ID No.	Contamination Concern	Underground Storage Tank (UST) Count	Above Ground Storage Tank (AST) Count	Facility Type	Facility Status	Storage Tanks	Database	Risk
1	Express Lane #37 5500 N Star Avenue	9102358	Gas/Diesel	1	0	Retail Station	Open	Yes	Oculus	Med
2	Triangle Construction Road Building 5437 N Star Avenue	8626479	Gas	0	3	Fuel user/ Non-retail	Open	Yes	Oculus	Low
3	Majette Tower Sanitary (Bay Dunes Golf Course) 5304 Majette Tower Road	9400711, FLD980494835	Gas	0	2	Landfill	Open	Yes	Oculus	Low
4	Thompson Pump 5814 Merritt Brown Road	NA	Unknown	0	0	Retail	Open	Yes	Oculus	Low
5	Tom Thumb #133 4729 Hwy 231 (Orphan Map #3)	9803950 003798647	Gas/Diesel	1	0	Retail Station	Open	Yes	Oculus	Low
6	Hancocks Cutoff 4808 CR 390 (Orphan Map #3)	9501676	Gas/Diesel	1	0	Retail Station	Open	Yes	Oculus	Low
7	Bay Cnty-Cnty Jail Annex 5600 Nehi Road	8733769	Diesel	0	1	County Government	Open	Yes	Oculus	Low
8	Dana Suttles Truck Leasing 1827 Transmitter Road	8500413	Diesel	0	1	Fuel user/ Non-retail	Open	Yes	Oculus	Low
9	Texaco-Sheffields 3435 E 15th Street	8626471	Gas/Diesel	1	0	Retail Station	Closed	Yes	Oculus	Low
10	Citgo Food Store #4021	8520484	Gas	3	0	Retail Station	Open	Yes	Oculus	Low
11	Jerry Pybus Electric Inc. 1327 N Tyndall Pkwy	9803736	Gas	0	1	Fuel user/ Non-retail	Open	Yes	Oculus	Low
12	Ace Hardware 3911 15th Street	NA	Chlorine	0	1	Retail	Open	Yes	NA	Low
13	EZ Serve #4376 (Mexico Beach)	8500577	Gas	2	0	Retail Station	Closed	Yes	Oculus	Low
14	Express Lane #78 Mexico Beach Marina	8944332	Gas	4	0	Retail Station	Open	Yes	Oculus	Low

Map ID	Site Name and Address	Facility ID No.	Contamination Concern	Underground Storage Tank (UST) Count	Above Ground Storage Tank (AST) Count	Facility Type	Facility Status	Storage Tanks	Database	Risk
15	Break Away Hauling 191 Guilford Drive #05	9807127 / 100276406	Diesel	0	2	Fuel user/ Non-retail	Open	Yes	NA	Low
16	Church of Christ 551 S. Long Street	107800526	National Pollutant Discharge Elimination System (NPDES) (Stormwater)	0	0	Construction Stormwater	Open	No	NA	Low
17	Panama City Properties Old Allanton Road and Apaloosa Way	9700073	Unknown	1	1	Fuel user/ Non-retail	NA	Yes	Oculus	Low
18	Northwest Florida Holdings 6100 Halter Marine Dr.	FLR000041921 100179760	Wastewater Gas Waste Oil Diesel	0	6	Fuel user/ Non-retail	Open	Yes	Oculus	Med
19	Northwest Florida Holdings 13300 Allanton Road	50071 (9202141)	Petroleum Products	0	4	Transportation Equipment Retail	Open	Yes	Oculus	Low
21	Hunt's Country Store	8508570	Gas/Diesel	0	0	Retail	Closed		Oculus	Low
22	Patrick's Store Hwy 386	9101234	Gas/Diesel	0	0	Retail	Closed	Yes	Oculus	Low
23	Division of Forestry – Overstreet Hey 386 (Rt 1 Box 350)	8521311	Gas/Diesel	0	0	Fuel user/ Non-retail	Closed	Yes	Oculus	Low
24	Harmon's Heavy Equipment Hwy 386 N	9400720	Diesel	0	0	Fuel user/ Non-retail	Closed	No	Oculus	No
25	Baxter Wastewater Treatment Plant (WWTP) – El Governor Motel CR 386	FLA0100011	Improper WWTF Operation	0	0	Private WWTF	Inactive	No	NA	No
26	Sumpin Else #2	850047	Gas	0	0	Retail	Open	Yes	Oculus	Low
27	Pitts Sand Company Inc.	9202662	Gas/Diesel	0	3	Fuel user/ Non-retail	Open	Yes	Oculus	Low
20	Allanton Facility 13300 Allanton Road	50071	Unknown	0	0	Transportation Equipment Retail	Open	No	Oculus	In Comp

Figure 4-10: Potentially Contaminated Sites Location Map

4.20 REFERENCES

1. Florida Department of Transportation, Historical Crash Data, accessed 11/4/10.
2. West Bay Regional Planning Council, *Bicycle and Pedestrian Plan Technical Memorandum 2: Existing Conditions Report,* for the Bay County Transportation Planning Organization, October 2005.
3. Florida Department of Environmental Protection, *St. Andrews State Park Aquatic Preserve Management Plan*, 1991
4. Florida Department of Environmental Protection, *St. Joseph Bay Aquatic Preserve Management Plan*, September 2008 – August 2018
5. Bay County, *Land Development Regulations*, September 4, 2007.
6. Florida Game and Freshwater Fish Commission (now Florida Fish and Wildlife Conservation Commission), *Closing the Gaps in Florida's Habitat Conservation System* (1994).
7. Florida Department of Environmental Protection, Division of Water Resource Management, *Choctawhatchee – St. Andrew Water Quality Assessment Report,* June 2006.
8. Fact Sheet about Outstanding Florida Waters, Florida Department of Environmental Protection, http://www.dep.state.fl.us/water/wqssp/ofwfs.htm
9. FDEP Surface Water Classifications, Florida Department of Environmental Protection, http://www.dep.state.fl.us/water/wqssp/classes.htm
10. *Florida Land Use, Cover and Forms Classification System,* FDOT, Level III, third ed., 1999.
11. FNAI Element Occurrence Data (publically available). FNAI element occurrence report was requested on September 24, 2007 and received on October 2, 2007 and October 15, 2007.

SECTION 5 DESIGN CONTROLS AND STANDARDS

The Gulf Coast Parkway is subject to a number of design controls and standards due to its classification as a major rural arterial, planned development through the study area, and its connectivity between US 98, State Road (SR) 22, US 231 as well as other principal arterials. While the Gulf Coast Parkway has not yet been identified as a Strategic Intermodal System (SIS) facility it has been determined that the road is to be designed to meet SIS standards should a future determination be made to include the Gulf Coast Parkway as a part of this system. City and county authorities, as well as other stakeholders, also have input in the direction and progress of improvements to the Gulf Coast Parkway.

5.1 DESIGN CONTROLS

Design controls are characteristics and conditions that influence or regulate the selection of the criteria and project standards. Those controls include width of roadway, side slopes, horizontal and vertical alignment, drainage considerations and intersecting roads. Selection of the appropriate criteria and standards is influenced by traffic volume and composition, desired levels of service, functional classification, terrain features, roadside developments, environmental considerations and other individual characteristics.

Traffic Volumes: Roadway geometric design shall be based on the project traffic for the design year. The design year for the project is 2032, which is 20 years after the assumed opening year of 2012. The Design Hour Volume (DHV) is the 30th highest hour. Project traffic has been developed in accordance with Florida Department of Transportation (FDOT) *Project Traffic Forecasting Procedure*[1] (Topic No. 525-030-120-g). For the purposes of developing project design standards, the Average Annual Daily Traffic (AADT) is considered in the normal range.

Level of Service (LOS): The SIS criteria set the minimum design and operation LOS. For the purposes of this study, existing conditions and projected future conditions are evaluated against these standards; and design alternatives are developed and evaluated for consistency with FDOT's Statewide Minimum LOS Standards to the State Highway System, established by Administrative Rule in 1992, (Rule Chapter No. 14-95). These standards for the SIS are LOS "B" in "Rural Areas" and LOS "C" in "Urban Areas". The Gulf Coast Parkway study area includes both urban and rural areas.

Design Speed: The design speed is an important design control that determines the selection of many of the project design standards. A design speed is generally 5 to 10 mph higher than the expected posted speed and is selected to obtain the highest degree of safety, mobility, and efficiency on the roadway. Specific design speed controls have been established for highways on the SIS in accordance with FDOT's procedure for the development of high speed rural and urban arterials roadways and those design standards and are applicable to this project. For controlled access arterial alternatives such as Gulf Coast Parkway, the minimum design speed is 65 mph on the rural roadway segments and 50 mph on the urban roadway segments.

Functional Classification: The Gulf Coast Parkway is not currently identified as part of the SIS, but will provide a major connection between other SIS roadways and is therefore being designed to meet SIS standards should it be decided in the future to include this road into the SIS network. The SIS is a statewide network of high priority transportation facilities, including the State's largest and most significant commercial service airports, spaceport, deepwater seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways and highways.

Access Classification: The SIS access management standards for controlled access segments of the SIS are those contained in Access Class 3 as defined in FDOT *Access Management Guidelines* and the *Plans Preparation Manual*. The road should have a restrictive median with minimum traffic signal, median opening, and connection spacing as indicated in **Table 5-1**. Less stringent access standards are allowed under certain limited applications, but the higher standards will be used for design unless specific justification is provided. Deviation from median opening standards shall follow the FDOT *Median Opening Decision Process* (Topic No. 625-010-020).

Pedestrian and Bicycle Requirements: For SIS controlled access facilities, the safe movement of bicycles and pedestrians must be carefully considered and accommodated in such as way as to have no adverse impact to safety, capacity, or speed. Bicycle facilities shall be consistent with the requirements of the *Florida Bicycle Facilities Planning and Design Handbook*[2] and the FDOT *Plans Preparation Manual*[16] (Topic Nos. 625-000-005 and 625-000-101). On limited access alternatives, bicycle and pedestrian facilities will not be provided.

5.2 DESIGN STANDARDS

The Gulf Coast Parkway Project Development and Environment (PD&E) Study incorporates project elements with various design requirements. Design and construction criteria for the proposed improvements to Gulf Coast Parkway must adhere to Florida Intrastate Highway System (FIHS) and FDOT standards for the design of such roadway and also must comply with recommended standard practices as set forth in the following documents:

- A Policy on Geometric Design of Highway and Streets (American Association of State Highway and Transportation Officials {AASHTO}, 2004)
- Development of the FIHS (FDOT, 2002)
- Roadway Plans Preparation Manual, Volume I and II (FDOT, 2009)
- Roadway and Traffic Design Standards (FDOT, 2009)
- Drainage Manual (FDOT, 2009)
- Manual on Uniform Traffic Control Devices (Federal Highway Administration, 2003 as amended)
- Highway Capacity Manual (Transportation Research Board, 200 as amended)
- Quality/LOS Handbook (FDOT, updated 2003)

Within the urbanized area in Mexico Beach and in north of Panama City, Gulf Coast Parkway will be designed to controlled access high-speed urban arterial FIHS criteria. Alignments located outside of the urbanized area will be designed to controlled access rural arterial criteria. *Per SIS criteria, controlled access SIS facilities should maximize the use of limited access facility standards when constructing new arterial highways.* Design and construction criteria established by FDOT are met. A Design Variation is not needed in this project.

Some criteria vary as a function of traffic volume, and FDOT has established ranges for low, medium, and high volumes. The Year 2035 project volumes indicate that the design criteria should be based on a

high volume roadway. All criteria are subject to change and only current criteria will be used during the final design phase.

Table 5-1 and Table 5-2 present the roadway design criteria established for each design element. **Table 5-3** presents the bridge design criteria.

Table 5-1 Design Criteria – Controlled Access Rural Arterial Facilities

Design Element	Design Standards	References (Comments)
Design Speed	65 mph	PPM Table 1.9.2
Access Management Class	Class 2 or 3	PPM Table 1.8.2
Horizontal Alignment		
Max Superelevation	0.10	PPM Table 2.9.1
Max Curvature (e_{max} = 0.10)	4°15'00"	PPM Table 2.8.3
Slope Rate	1:250	PPM Table 2.9.3
Max Curvature (e = 0.02)	0°15'00"	PPM Table 2.8.4
Max Deflection Without Horizontal Curve	0°45'00"	PPM Table 2.8.1a
Length of Horizontal Curve	975' Desired, But Not Less Than 400'	PPM Table 2.8.2a
Min Curve Length of Full Superelevation	200'	PPM Table 2.8.2a
Superelevation Transition (% tangent / % curve)	80/20	PPM Sec. 2.9
Horizontal Clearance	Varies	PPM Table 2.11.1 – Table 2.11.10
Clear Zone (CZ)	36'	PPM Table 2.11.11
Vertical Alignment		
Max Grade (Flat Terrain)	3.0%	PPM Table 2.6.1
Min K for Crest Curve	313	PPM Table 2.8.5
Min Length of Crest Curve	450'	PPM Table 2.8.5
Min K for Sag Curve	157	PPM Table 2.8.6
Min Length of Sag Curve	350'	PPM Table 2.8.6
Min Vertical Clearance (Rdwy Over Rdwy)	16'-6"	PPM Table 2.10.1
Min Vertical Clearance (Rdwy Over Railroad)	23'-6"	PPM Table 2.10.1
Max Change in Grade without Vertical Curve	0.30%	PPM Table 2.6.2
Roadway Base Clearance Above Design High Water	3'	PPM table 2.6.3
Min Stopping Sight Distance (@ ≤2.0% Grade)	645'	PPM Table 2.7.1
Min Stopping Sight Distance (@3.0% Grade)	682' Downgrade 612' Upgrade	PPM Table 2.7.1
Cross Section		
Lane Width	12'	PPM Table 2.1.1
Median Width	64'	PPM Table 2.2.1
Full Width Shoulder (Median)	8'	PPM Table 2.3.2
Full Width Shoulder (Outside)	12'	PPM Table 2.3.2
Paved Width Shoulder (Median)	2'	PPM Table 2.3.2
Paved Width Shoulder (Outside)	5'	PPM Table 2.3.2
Bridge Shoulder Width (Inside)	6'	PPM Figure 2.0.1
Bridge Shoulder Width (Outside)	10'	PPM Figure 2.0.1
Pavement Cross Slope	0.02	PPM Figure 2.1.1
Maximum Change in Cross Slope	0.04	PPM Figure 2.1.1
Shoulder Cross Slope (Median)	0.05	PPM Table 2.3.2
Shoulder Cross Slope (Outside)	0.06	PPM Table 2.3.2
Front Slope	Fill Height Feet / Rate 0 – 5 / 1:6 5 – 10 / 1:6 to Edge of CZ & 1:4 10 – 20 / 1:6 to Edge of CZ & 1:3 >20 / 1:2 (With Guardrail)	PPM Table 2.4.1
Back Slope	1:4 or 1:3 (With a Standard Width Trapezoidal Ditch)	PPM Table 2.4.1
Transverse Slope	1:4	PPM Table 2.4.1
Border Width (Measured from the Shoulder Point to the right-of-way (ROW)	40'	PPM Table 2.5.1
Shared Use Path Width	12' (Two-Way)	PPM Sec. 8.6.2

REFERENCES:

1) The Florida Department of Transportation Plans Preparation Manual (PPM), 2009, Revised 2010
2) The Florida Department of Transportation Design Standards (FDOT Standard Index), 2008
3) Development of the Florida Intrastate Highway System (FIHS), 2002

Table 5-2 Design Criteria Controlled Access High-Speed Urban Arterial Facilities

Design Element	Design Standards	References (Comments)
Design Speed	50 mph	PPM Sec. 2.16.1/PPM Table 1.9.2
Access Management Class	Class 2 or 3	PPM Table 1.8.2
Horizontal Alignment		
Max Superelevation	0.05	PPM Sec. 2.16.10
Max Curvature (e = 0.05) (Based on e_{max} = 0.10)	2°30'00"	PPM Sec. 2.16.10/ PPM Table 2.9.1
Slope Rate	1:200 (4 Lane Section) 1:160 (6 Lane Section)	PPM Sec. 2.16.10/ PPM Table 2.9.3
Max Curvature (e = 0.02)	0°30'00"	PPM Table 2.8.4
Max Deflection Without Horizontal Curve	1°00'00"	PPM Table 2.8.1a
Length of Horizontal Curve	750' Desired, But Not Less Than 400'	PPM Table 2.8.2a
Min Curve Length of Full Superelevation	200'	PPM Table 2.8.2a
Superelevation Transition (% Tangent / % Curve)	80/20	PPM Sec. 2.9
Horizontal Clearance	Varies	PPM Table 2.11.1 – Table 2.11.10
CZ	24'	PPM Table 2.11.11
Vertical Alignment		
Max Grade (Flat Terrain)	6.0%	PPM Sec. 2.16.8
Min Grade	0.30%	PPM Table 2.6.4
Min Distance Between (Vertical Point of Intersections {VPI})	250'	PPM Table 2.6.4
Min K for Crest Curve	136	PPM Table 2.8.5
Min Length of Crest Curve	300'	PPM Table 2.8.5
Min K for Sag Curve	96	PPM Table 2.8.6
Min Length of Sag Curve	200'	PPM Table 2.8.6
Min Vertical Clearance (Rdwy Over Rdwy)	16'-6"	PPM Table 2.10.1
Min Vertical Clearance (Rdwy Over Railroad)	23'-6"	PPM Table 2.10.1
Max Change in Grade Without Vertical Curve	0.60%	PPM Table 2.6.2
Roadway Base Clearance Above Design High Water	1'	PPM Table 2.6.3
Min Stopping Sight Distance (@ ≤2.0% Grade)	425'	PPM Table 2.7.1
Min Stopping Sight Distance (@6.0% Grade)	474' Downgrade 388' Upgrade	PPM Table 2.7.1
Design Element	**Design Standards**	**References (Comments)**
Cross Section		
Lane Width	12'	PPM Table 2.1.1
Median Width (Includes Future Six-Lane Widening)	54'	PPM Sec. 2.16.4
Pavement Cross Slope	0.02/0.03	PPM Figure 2.1.1
Maximum Change in Cross Slope	0.04	PPM Figure 2.1.1
Shoulder Width (Outside) (Measured to the Lip of the Gutter)	6.5'	PPM Sec. 2.16.5
Shoulder Width (Median) (Measured to the Lip of the Gutter)	4'	PPM Sec. 2.16.5
Shoulder Cross Slope (Outside)	0.03	PPM Exhibit Typ-16 (Ch. 6 – Vol. 2)
Shoulder Cross Slope (Median)	0.02	PPM Exhibit Typ-16 (Ch. 6 – Vol. 2)
Front Slope	1:2 or to Suit Property Owner, Not Flatter Than 1:6	PPM Table 2.4.1
Back Slope	1:2 or to Suit Property Owner, Not Flatter Than 1:6	PPM Table 2.4.1
Transverse Slope	1:4	PPM Table 2.4.1
Border Width (Measured From the Edge of Travel Way to the ROW)	29'	PPM Sec. 2.16.7

REFERENCES:

1) The Florida Department of Transportation Plans Preparation Manual (PPM), 2009, Revised 2010
2) The Florida Department of Transportation Design Standards (FDOT Standard Index), 2008
3) Development of the Florida Intrastate Highway System (FIHS), 2002

Table 5-3: Bridge Design Criteria

Geometric Provisions		
Design Speed		50-65 mph
Span Length		To Be Determined
Structure Width		To Be Determined
Minimum Clearances	Highways and Streets	16.5 feet vertical
	Railroads	23.5 feet vertical
		25 feet horizontal
Structures Design Manual Requirements & AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications		
Dead Load (DL)	Steel	490 pcf
	Reinforced Concrete	150 pcf
	Sacrificial Concrete	½ inch (Bridge Decks)
	Soil	115 pcf
	Soil at Mechanically Stabilized Earth (MSE) Walls	105 pcf
	Stay-in-Place Forms	20 pcf
Superimposed Dead Load (SDL)	Weight of Traffic Barriers	By Structural Design Guidelines (SDG) Table 2.1
	Future Wearing Surface	N/A
	Bridge Supported Utilities	None
Live Load	AASHTO HL-93	Truck + Lane
	Design Tandem	Two 25 kip axles, 4' apart + Lane Loading
	Permit Vehicles	FL-120Strength II limit State
Longitudinal Forces	In accordance with	AASHTO Article 3.6.4
Centrifugal Forces	In accordance with	AASHTO 3.6.3
Thermal Forces	In accordance with	SDG 2.7.1
	Design Mean Temperature	70° F
	Range of thermal effects due to temperature rise and fall	Rise 35° F
		Fall 35° F
	Coefficient of thermal expansion	6.0×10^{-6} per °F Concrete
		6.5×10^{-6} per °F Steel
	Bridge bearings and expansion joints	Sized and set for all movements due to temperature changes.
	Temperature Gradient	In accordance with SDG 2.7.2
Wind Loads	In accordance with	SDG 2.7.2
Seismic Forces	Exempt	AASHTO 4.7.4.3.1 (Seismic Zone 1)
	Design Forces for Seismic Zone 1	AASHTO 3.10.9
	Bearing Support Dimensions	LRFD 4.7.4.4
Earth Forces	Abutments and Retaining Walls	AASHTO Section 11
Load Combinations		AASHTO Article 3.4, Table 3.4.1-1
Materials	Concrete	Location f_c'(Ksi)
		Parapets, Terminal Walls, Barriers to be determined
		Superstructure & Diaph. To be determined
		Columns, Caps, Footings and Abutments to be determined
		Prestressed Members to be determined
	Environmental Classification and Corrosion Control	Superstructure & Substructure to be determined
		Minimum Concrete Cover: SDG Table 1.2
	Steel	Prestressing Steel – Low relaxation prestressing strands ½", American Society of Testing Materials (ASTM) A-416, Grade 270 strands, with an area of 0.167 square in.
		Reinforcing Steel – ASTM A615, Grade 60
		Structural Steel – ASTM A709 Grade 50 or 36
Superstructure Design		
General	Distribution of Rail Loads	Per SDG 2.8
	Minimum Deck Slab Thickness	81/2 inches (including ½ inch Sacrificial Thickness)
	Deck Slab Design	Per SDG
	Deck Overhangs	Provide Steel per SDG 4.2.4 or 4.2.5
	Continuous Deck Slabs	Supplemental top slab reinforcement per SDG 4.2.6
	Casting Sequence	Minimum of 72 hours between adjacent ours. Construction joints provided at no more than 80 feet

Table 5-3: Bridge Design Criteria, cont.

General	Skewed Bridges	Slabs skewed less than 15° will have reinforcement placed parallel to skew
		Slabs skewed more than 15° will have reinforcing placed perpendicular to centerline
	Stay-in-Place Forms	Metal Stay-in-Place Forms allowed
	Bridge Floor Grooving	Bridge Decks to be Grooved
	Bearings	Use laminated elastomeric bearings
	Expansion Joints	Poured Silicone Preferred
Concrete Design	Design Method	Prestressed girders shall be designed by the AASHTO LRFD method and he requirements of SDG 4.3.1
	Bearing Plates	Embedded bearing plates shall be provided in Florida Bulb T's or other skewed concrete girder bridges less than 45°.
	Design Groups	Beam designs will be grouped to maximize casting bed usage.
	Camber	Camber will be based on 120-day old concrete and account for proposed casting sequence.
Steel Design	Minimum Web thickness	7/16 inch
	Minimum Flange width	12"
	Minimum Flange thickness	¾ inch
	Bolted structural connections	A325 type I bolts designed as slip critical
	Girder System	Multi-girder to provide redundancy and avoid fracture critical designations
Substructure Design		
Loading		AASHTO HL-93 or Design Tandem. Truck Loading + Lane Loading.
	Abutments and Piers	LRFD Method
	Pier Caps and Columns	Impact shall be included
	Footing	Impact shall be omitted
	Fixed Piers	Longitudinal forces in proportion to the stiffness
	At Bearings	Apply friction force, longitudinal force from vertical loads, and wind longitudinal force
	Piers	2 inch eccentricity longitudinally off the theoretical centerline of bearings to account for possible field adjustment.
Columns		Utilizing Effective length and slenderness effects or a P-Delta analysis in accordance with AASHTO
	Columns on pile caps with multiple shafts	Assume to be fully fixed to the footing and designed as rigid frames above footing.
	Columns on single shafts	Design taking into account soil parameters (i.e. determine point of fixity assuming springs)
	Reinforcing	As specified in SDG 3.11
	Column height	Greatest column height used when piers using same reinforcing are designed.
Abutments	Horizontal Design Forces	Equivalent fluid weight shall be as per soils report.
	Abutment piles or shafts with MSE wall volume	Disregard 400 kip vehicular impact force
Foundations	Redundant Foundations	Single Column Pier – minimum 4 drilled shafts
		Two Column Pier – minimum 3 drilled shafts under each column (total minimum 6 shafts)
		Three or more Column Pier and Widenings – minimum of one drilled shaft under each column.
	Foundation Type & Capacity	As stated in Geotechnical Report
	Foundation Axial Design Capacity	Based on factored loads
	Foundation Lateral Resistance	In accordance with Geotechnical Report
Geometric Design		
Typical Section	Interim Bridge Typical Section	Figure 2.0.1, PPM 2.0
	Cross Slope	Bridges with one-way traffic shall have one, uniform cross slope, PPM 2.1.5
	Median Width	PPM 2.2.3

Table 5-3: Bridge Design Criteria, cont.

	Shoulder Widths	Generally, shoulder width should be same width as the approach roadway shoulder up to a maximum of 10 feet. Figure 2.0.1 and Figure 2.0.2, PPM 2.0
	Bridge railings and separators	PPM 2.12
Vertical Clearance over Water	Drainage: minimum vertical clearance between the design flood stage and the low member elevation of bridges shall be a minimum of 2.0 feet.	PPM 2.10.1
	Navigation: minimum vertical clearance for navigation purposes shall be: • 6 feet. above mean high water (MHW) for tidewater bays and streams • 6 feet . above normal high water (NHW) for freshwater rivers, streams, non-regulated/controlled canals, and lakes • 6 feet above control elevation for regulated/controlled lakes and canals Minimum vertical at the navigable channel clearance is measured from the low point of the structural member of bridge. For coastal bridges vertical clearance of the superstructure shall be a minimum of 1 feet above the 100-year design wave crest elevation including the storm surge elevation and wind setup. Greater minimum vertical clearances may be required by the United States Coast Guard (USCG) for waterways such as the Intracoastal Waterway (ICWW) where 65 feet is usually required.	PPM 2.10.1
Horizontal Waterway Clearance	Minimum horizontal clearances: For crossings subject to boat traffic a minimum horizontal clearance of 10 feet shall be provided. Where no boat traffic is anticipated, horizontal clearance shall be consistent with debris conveyance needs and structure economy. Greater minimum horizontal clearances may be required by the USCG for waterways such as the ICWW where 150 feet is usually required.	PPM 2.10.2
Pedestrian and Bicycle Facilities	Shared use path structure minimum clear width is 12 feet Sidewalks shall be a minimum of 5 feet Separate bicycle paths shall be a minimum of 4 feet	PPM 8.7.1
Miscellaneous		
Drainage		Designed to remove all water from bridge and emptied into drainage areas off of the bridge
Utilities		No utilities to be attached to bridge
Lighting		Lighting not proposed
Signage		No signs to be attached to bridge.

5.3 REFERENCES

1. Florida Department of Transportation, *Project Traffic Forecasting Handbook*, 2002.
2. Florida Department of Transportation, *Florida Bicycle Facilities Planning and Design Handbook*, 1999.

SECTION 6 TRAFFIC

6.1 DESIGN TRAFFIC

6.1.1 Overview

The study team performed a traffic analysis to evaluate the operation of existing roads within the study area; to develop future traffic demand for the study period; and to determine what effects the project alternatives (including the No-Build Alternative) would have on roads in the study area. The traffic analysis also contributed to the determination of the typical sections for the proposed Build alternatives.

The adopted year for existing conditions was 2011. Florida Department of Transportation (FDOT) guidelines (*Project Traffic Forecasting Handbook*[6], *FDOT - 2009*) require a 20-year period for the design year forecast after the opening year. Therefore, with an opening year of 2015, the design year is then 2035, and an interim year of 2025 was identified as the mid-point between opening and design years. In addition to projecting future traffic demand, detailed operational analyses were performed on existing intersections within the study area for 2012, the existing year, and the proposed intersections for the design year. The following presents a summary of the findings from the *Traffic Report – Gulf Coast Parkway*[7], plus some final discussion on the Gulf Coast Parkway traffic impacts on adjacent roadway segments within the study area. Refer to the Traffic Report for a detailed discussion of the traffic analysis methodology.

6.1.2 Design Characteristics

Per Standard FDOT procedures, the peak hour ('K"), directional ("D"), and truck ("T_{24}") factors are used to convert the average annual daily traffic (AADT) to peak hour directional volumes.

The K-factor is the ratio of the hourly two-way traffic to the two-way AADT. The K_{30} is the relationship between the 30th highest hourly volume of the year and the AADT for the design year. The K_{30} is used to determine the design hour volume (DHV).

The directional distribution factor (D-factor) is the percentage of the total, two-way peak hour traffic traveling in the peak direction. D_{30} is the proportion of the traffic in the 30th highest hour of the design year traveling in the peak direction. The directional distribution is an essential parameter used to determine the directional design hour volume (DDHV). The DDHV is the basis of geometric design.

The truck factor (T_{24} or simply T) is critical for an accurate roadway pavement design. T is the percentage of trucks using a roadway for 24-hour period.

The peak hour factor (PHF) is the hourly volume during the maximum hour of the day divided by the peak 15-minute rate of flow within the peak hour. It is used in operational analysis level of service (LOS).

The actual composition of trucks is needed for operational analysis and noise studies. In addition to the T factors already defined, the following definitions are also needed:

Design Hour Truck (DHT): The percent of trucks expected to use a highway segment during the 30th highest hour of the design year. The adjusted, annual design hour percentage of trucks and buses (24T+B or T24) divided by two.

DH2: The adjusted, annual design hour medium truck percentage. It is the sum of the annual percentages of Categories 4 and 5 (Figure 2.2 of the FDOT's Project Traffic Handbook), adjusted to 24 hours, and divided by two.

DH3: The adjusted, annual design hour heavy truck percentage. It is DHT minus DH2, or the sum of the adjusted annual percentages of Categories 6 through 13 (Figure 2.2 in the FDOT's Project Traffic Handbook), divided by two. Other references for Table 6-1 include the FDOT 2012 Traffic Information DVD[1].

Table 6-1 provides the recommended design characteristics for the project.

Table 6-1: Recommended Traffic Factors

Road Type/Area	K_{30}	D_{30}	T_{24}	DHT*	DH2	DH3
Urban Arterial (FDOT)	10.20%	57.90%				
Rural Arterial (FDOT)	11.00%	58.10%				
Suburban Arterial (Highway Capacity Manual (HCM) National Value)	10% - 15%	52% - 57%				
Average from FDOT Stations	10.72%	57.83%	6.71%	3.40%	1.62%	1.78%
Average form 2005 Counts	9.02%	56.78%				
Average for Bay County	10.83%	58.09%				
Average for Gulf County	12.82%	60.10%				
Adopted Values	**11.00%**	**58.00%**	**6.71%**	**3.40%**	**1.62%**	**1.78%**

References:

FDOT Project Traffic Forecasting Handbook
FDOT 2012 Traffic Information DVD
PBS&J Calculations

*Design Hour Traffic

6.2 EXISTING TRAFFIC CONDITIONS

Using the average annual traffic growth rate (2.98%) from FDOT historical counts, year 2011 traffic volumes were factored up to reflect year 2012 conditions.

6.2.1 Existing and Future Projected Traffic

Traffic patterns from the past 10 years were utilized to forecast future traffic volumes, which include traffic growth from existing developments and through traffic. Natural population growth and land use development are already captured by the growth rate calculations. Large scale developments or Development of Regional Impact (DRIs) were considered separately because they have a significant impact on the region's transportation system.

Therefore, existing year traffic volumes and projections for the future (using growth rates derived from regression analysis) were considered to be the "background" traffic. This background traffic was checked against known minor land use development to make sure traffic growth was reasonable, based on information provided by Bay and Gulf Counties, and other local governments within the study area.

DRIs that could create significant impact on the transportation network and were considered in the projection of future traffic included: WindMark, located on US 98 west of Port St. Joe; the West Bay

Detailed Specific Area Plan (DSAP) north of West Bay; and the relocation of the Panama City airport to a site north of County Road (CR) 388.

Phase I of WindMark was scheduled for completion in 2009 and Phase II for completion in 2014. Therefore, trips associated with Phase I were applied to the Gulf Coast Parkway's opening year (2015) and the full traffic from this Development of Regional Impact (DRI) was applied to the interim and design years. As of the date of this report, the WindMark development had not reached build out status.

The West Bay DSAP is a conceptual plan addressing future mixed-use developments and the new Northwest Florida Beaches International Airport (NWFBIA). Per the West Bay DSAP report, about 8% of the expected traffic to be generated will be affecting the transportation system by the Gulf Coast Parkway's opening year of 2015, 71% would occur by the interim year (2025), and the full amount in Gulf Coast Parkway's design year of 2035.

Table 6-2a through 6-2e show the projected AADT traffic volumes for the existing and future years, including the background and DRI traffic, for all alternatives.

Table 6-2a: Future Traffic (Including Development of Regional Impact {DRI} Traffic): Alternative 8

Roadway	Segment	Year 2011 AADT	Background + DRI Traffic		
			Year 2012 AADT	Year 2025 AADT	Year 2035 AADT
	Segment 1				
US 98	East of CR 386	10,000	12,980	15,852	19,165
US 98	West of CR 386	9,200	5,000	6,100	7,500
CR 386	North of US 98	5,200	13,214	16,222	19,635
CR 386	US 98 - 15th Street	1,700	9,214	11,322	13,635
CR 386	15th Street - Gulf Coast Parkway (GCP) Segment 3	1,900	9,414	11,622	13,935
CR 386	GCP Segment 3 - State Road (SR) 71	1,500	1,700	2,100	2,600
GCP, Seg. 3	North of Overstreet (CR 386, Gulf Co.)	0	7,214	8,922	10,735
CR 386	West of GCP, Segment 3 (Gulf Co.)	1,900	9,414	11,622	13,935
CR 386	East of GCP, Segment 3 (Gulf Co.)	1,500	1,700	2,100	2,600
	Segments 3, 8, 10, 14, 15				
GCP, Seg 3,8,10	CR 386 - SR 22	0	7,314	8,922	10,735
GCP, Seg 3,8,10	South of SR 22	0	7,314	8,922	10,735
SR 22	East of GCP, Segment 10	2,800	3,814	4,664	5,751
SR 22	West of GCP, Segment 10	3,400	11,828	14,486	17,486
SR 22	GCP, Segment 10 - CR 2297 (Allanton Rd.)	4,300	12,828	15,686	18,986
SR 22	CR 2297 – GCP, Segment 14,15	10,500	20,028	24,386	29,586
SR 22	East of GCP, Segment 15	10,500	20,028	24,386	29,586
SR 22	West of GCP, Segment 15	10,500	11,242	13,672	16,659
GCP, Seg. 15,17,21	North of SR 22	0	9,728	11,886	14,386
	Segments 17,21				
GCP, Seg. 17,21	SR 22 - Tram Road	0	9,728	11,886	14,386
GCP, Seg. 17,21	East of Star Ave	0	9,728	11,886	14,386
Star Ave	South of GCP (South of Tram Rd.)	7,400	6,788	8,309	10,036
GCP, Seg. 25 (Tram Rd)	West of Star Ave	0	8,414	10,243	12,443
Star Ave	North of Tram Rd.	8,300	10,814	13,243	16,143
	Segment 25				
Tram Road	US 98 - Star Ave	0	8,414	10,243	12,443
Tram Road	East of US 98	0	8,414	10,243	12,443
US 98	South of Tram Rd	35,850	29,800	29,500	28,800
US 98	North of Tram Rd.	31,600	30,500	31,100	31,700
14th Street	West of Tyndall Pkwy (US 98)	700	800	1,000	1,200
	Segments 26,27				
GCP, Seg. 26	Tram Rd - Nehi Rd.	8,300	10,814	13,243	16,143
GCP, Seg 26	South of Nehi-Star Ave intersection	8,300	10,814	13,243	16,143
Star Ave	North of GCP, Segment 26,27	0	4,088	4,909	6,036
GCP, Seg 27	Northwest of Nehi-Star Ave intersection	0	6,814	8,443	10,243
GCP, Seg 27	Star Ave - US 231	0	6,814	8,443	10,243
US 231	West, South west of GCP, Seg. 27	25,800	30,300	36,971	45,085
US 231	East, Northeast of GCP, Seg. 27	30,400	36,262	44,296	54,011
GCP, Seg. 27	South of US 231	0	6,814	8,443	10,243

Sources: Traffic from FDOT 2011 Florida Traffic Information DVD

Notes:

Shadowed cells are main intersection traffic volumes

Traffic growth rate on US 98 within Panama City is reduced to the annual trend rate projected for this specific facility since it is already very congested

Table 6-2b: Future Traffic (Including DRI traffic): Alternative 14

Roadway	Segment	Year 2011 AADT	Background + DRI Traffic		
			Year 2012 AADT	Year 2025 AADT	Year 2035 AADT
	Segment 1				
US 98	East of CR 386	10,000	12,980	15,852	19,165
US 98	West of CR 386	9,200	5,000	6,100	7,500
CR 386	North of US 98	5,200	13,214	16,222	19,635
CR 386	US 98 - 15th Street	1,700	9,214	11,322	13,635
CR 386	15th Street - Gulf Coast Parkway (GCP) Segment 3	1,900	9,414	11,622	13,935
CR 386	GCP Segment 3 - SR 71	1,500	1,700	2,100	2,600
GCP, Seg. 2	North of Overstreet (CR 386, Gulf Co.)	0	7,314	8,922	10,735
CR 386	West of GCP, Segment 2 (Gulf Co.)	1,900	9,514	11,622	13,935
CR 386	East of GCP, Segment 2 (Gulf Co.)	1,500	1,700	2,100	2,600
	Segments 3, 8, 10, 14, 15, 30				
GCP, Seg 3,8,10	CR 386 - SR 22	0	7,314	8,922	10,735
GCP, Seg 3,8,10	South of SR 22	0	7,314	8,922	10,735
SR 22	East of GCP, Segment 10	2,800	3,814	4,664	5,751
SR 22 - GCP Seg. 14	West of GCP, Segment 10	3,400	11,828	14,486	17,486
SR 22 - GCP Seg. 14	East of GCP, Segment 30	3,400	11,828	14,486	17,486
	Segment 30				
GCP, Seg. 30	SR 22 - US 231	7,500	1,010	1,358	1,489
GCP, Seg 30.	South of US 231	7,500	1,010	1,358	1,489
US 231	Star Ave to the east	19,200	23,404	27,852	3,369
US 231	US 231 (1,480' South of CR 388 at Youngstown)	16,300	20,654	24,254	29,473

Sources: Traffic from FDOT 2011 Florida Traffic Information DVD

Notes:

Shadowed cells are main intersection traffic volumes

Traffic growth rate on US 98 within Panama City is reduced to the annual trend rate projected for this specific facility since it is already very congested

Table 6-2c: Future Traffic (Including DRI Traffic): Alternative 15

Roadway	Segment	Year 2011 AADT	Background + DRI Traffic		
			Year 2012 AADT	Year 2025 AADT	Year 2035 AADT
	Segment 1				
US 98	East of CR 386	10,000	12,980	15,852	19,165
US 98	West of CR 386	9,200	5,000	6,100	7,500
CR 386	North of US 98	5,200	13,214	16,222	19,635
CR 386	US 98 - 15th Street	1,700	9,214	11,322	13,635
CR 386	15th Street – Gulf Coast Parkway (GCP) Segment 3	1,900	9,414	11,622	13,935
CR 386	GCP Segment 3 - SR 71	1,500	1,700	2,100	2,600
GCP, Seg. 3	North of Overstreet (CR 386, Gulf Co.)	0	7,214	8,922	10,735
CR 386	West of GCP, Segment 3 (Gulf Co.)	1,900	9,414	11,622	13,935
CR 386	East of GCP, Segment 3 (Gulf Co.)	1,500	1,700	2,100	2,600
	Segments 3, 8, 10, 14, 15, 12, 40				
GCP, Seg 3,8,10	CR 386 - SR 22	0	7,314	8,922	10,735
GCP, Seg 3,8,10	South of SR 22	0	7,314	8,922	10,735
SR 22	East of GCP, Segment 10	2,800	3,814	4,664	5,751
SR 22	West of GCP, Segment 10	3,400	11,828	14,486	17,486
SR 22	West of GCP, Segment 15	10,500	11,242	13,672	16,659
GCP, Seg. 15,17,21	North of SR 22	0	1,010	1,358	1,489
	Segment,13.40.41.42				
GCP, Seg. 13,40,41,42	SR 22 - US 231	7,500	1,010	1,358	1,489
GCP, Seg 41,42	South of US 231	7,500	1,010	1,358	1,489
US 231	Star Ave to the east	16,300	20,654	24,254	29,473
US 231	US 231 (1,480' South of CR 388 at Youngstown)	16,300	20,654	24,254	29,473

Sources: Traffic from FDOT 2011 Florida Traffic Information DVD

Notes:

Shadowed cells are main intersection traffic volumes

Traffic growth rate on US 98 within Panama City is reduced to the annual trend rate projected for this specific facility since it is already very congested

Table 6-2d: Future Traffic (Including DRI Traffic): Alternative 17

Roadway	Segment	Year 2011 AADT	Background + DRI Traffic		
			Year 2012 AADT	Year 2025 AADT	Year 2035 AADT
	Segment 2				
US 98	East of CR 386	10,000	12,980	15,852	19,165
US 98	West of CR 386	9,200	5,000	6,100	7,500
CR 386	North of US 98	5,200	13,214	16,222	19,635
CR 386	US 98 - 15th Street	1,700	9,214	11,322	13,635
CR 386	15th Street - Gulf Coast Parkway (GCP) Segment 2	1,900	9,414	11,622	13,935
CR 386	GCP Segment 2 - SR 71	1,500	1,700	2,100	2,600
GCP, Seg. 2	West of CR 386	0	7,214	8,922	10,735
CR 386	South of GCP, Segment 2	1,900	9,414	11,622	13,935
CR 386	North of GCP, Segment 2	1,500	1,700	2,100	2,600
	Segment 16, 18, 21				
GCP, Seg. 2	CR 386 - SR 22	0	7,314	8,922	10,735
GCP, Seg. 2	South of SR 22	0	7,314	8,922	10,735
SR 22	CR 2297 - to the east	10,500	13,928	16,986	20,586
SR 22	East of GCP, Segment 2	10,500	13,928	16,986	20,586
SR 22	West of GCP, Segment 2	10,500	11,242	13,672	16,659
GCP, Seg. 16	North of SR 22	0	9,728	11,886	14,386
GCP, Seg. 16, 18, 21	SR 22 - Star Ave	0	9,728	11,886	14,386
GCP, Seg. 21	East of Star Ave	0	9,728	11,886	14,386
Star Ave	South of GCP (South of Tram Rd.)	7,400	6,788	8,309	10,036
GCP, Seg. 25 (Tram Rd)	West of Star Ave	0	8,414	10,243	12,443
Star Ave	North of Tram Rd.	8,300	9,414	11,543	14,043
	Segment 25				
Tram Road	US 98 - Star Ave	0	8,414	10,243	12,443
Tram Road	East of US 98	0	8,414	10,243	12,443
US 98	South of Tram Rd	35,850	29,800	29,500	28,800
US 98	North of Tram Rd.	31,600	30,500	31,100	31,700
14th Street	West of Tyndall Pkwy (US 98)	700	800	1,000	1,200
	Segment 26, 27				
Star Ave, S. of Seg. 27	Tram Rd - Seg 27	8,300	9,414	11,543	14,043
Star Ave	North of GCP, Segment 27	0	4,088	4,909	6,036
GCP, Seg 27	West of Star Ave	0	6,814	8,443	10,243
GCP, Seg 27	Star Ave - US 231	0	6,814	8,443	10,243
US 231	West, South west of GCP, Seg. 27	25,800	30,300	36,971	45,085
US 231	East, Northeast of GCP, Seg. 27	30,400	36,262	44,296	54,011
GCP, Seg. 27	South of US 231	0	6,814	8,443	10,243

Sources: Traffic from FDOT 2011 Florida Traffic Information DVD

Notes:

Shadowed cells are main intersection traffic volumes

Traffic growth rate on US 98 within Panama City is reduced to the annual trend rate projected for this specific facility since it is already very congested

Table 6-2e: Future Traffic (Including DRI Traffic): Alternative 19

Roadway	Segment	Year 2011 AADT	Background + DRI Traffic		
			Year 2012 AADT	Year 2025 AADT	Year 2035 AADT
	Segment 2				
US 98	East of CR 386	10,000	12,980	15,852	19,165
US 98	West of CR 386	9,200	5,000	6,100	7,500
CR 386	North of US 98	5,200	13,214	16,222	19,635
CR 386	US 98 - 15th Street	1,700	9,214	11,322	13,635
CR 386	15th Street - Gulf Coast Parkway (GCP) Segment 2	1,900	9,414	11,622	13,935
CR 386	GCP Segment 2 - SR 71	1,500	1,700	2,100	2,600
GCP, Seg. 2	West of CR 386	0	7,214	8,922	10,735
CR 386	South of GCP, Segment 2	1,900	9,414	11,622	13,935
CR 386	North of GCP, Segment 2	1,500	1,700	2,100	2,600
	Segment 16, 18, 21, 29				
GCP, Seg. 2	CR 386 - SR 22	0	7,314	8,922	10,735
GCP, Seg. 2	South of SR 22	0	7,314	8,922	10,735
SR 22	CR 2297 - to the east	10,500	13,928	16,986	20,586
SR 22	East of GCP, Segment 2	10,500	13,928	16,986	20,586
SR 22	West of GCP, Segment 2	10,500	11,242	13,672	16,659
GCP, Seg. 16, 29	North of SR 22	0	9,728	11,886	14,386
GCP, Seg. 16, 29	South of GCP Seg. 16	0	9,728	11,886	14,386
GCP, Seg. 16, 18	West of GCP Seg. 29	0	9,728	11,886	14,386
GCP, Seg. 18, 21	GCP Seg 29 - Star Ave	0	9,728	11,886	14,386
GCP, Seg. 21	East of Star Ave	0			
Star Ave	South of GCP (South of Tram Rd.)	7,400	6,788	8,309	10,036
GCP, Seg. 25 (Tram Rd)	West of Star Ave	0	8,414	10,243	12,443
Star Ave	North of Tram Rd.	8,300	9,414	11,543	14,043
	Segment 25				
Tram Road	US 98 - Star Ave	0	8,414	10,243	12,443
Tram Road	East of US 98	0	8,414	10,243	12,443
US 98	South of Tram Rd	35,850	29,800	29,500	28,800
US 98	North of Tram Rd.	31,600	30,500	31,100	31,700
14th Street	West of Tyndall Pkwy (US 98)	700	800	1,000	1,200

Sources: Traffic from FDOT 2011 Florida Traffic Information DVD

Notes:

Shadowed cells are main intersection traffic volumes

Traffic growth rate on US 98 within Panama City is reduced to the annual trend rate projected for this specific facility since it is already very congested

6.2.2 Level of Service Analysis

LOS is a qualitative measure that describes operational conditions and provides an index to the quality of traffic flow. LOS are defined in letter designations from A to F with LOS A representing the best operating conditions, while LOS F is the worst condition.

6.2.3 Roadway Segment Daily Level of Service

Existing arterials' AADT volumes and LOS within the study area are shown in **Table 6-3**. The Generalized Tables from the FDOT's *2009 Quality / Level of Service Handbook*[2] were used to make the LOS determination.

The design year LOS is presented for all five alternative alignments in **Table 6-4a through 6-4e**. The determination of LOS was based on the Generalized Tables in FDOT's *2009 Quality/Level of Service Handbook* and the final typical section for the project, a four-lane divided facility. The intersection operational analysis that follows showed the need to improve the capacity on selected existing roads intersecting the Gulf Coast Parkway to avoid failure, as noted in the corresponding tables.

6.2.4 Intersection Level of Service Analysis

An operational analysis of the project's major intersections was performed for the opening, interim and design year, respectively. Most of these intersections are new with the exceptions of the US 98 and CR 386 intersection in Mexico Beach, the SR 22 and Star Avenue intersection in Callaway, the Star Avenue and US 231 intersection, and the US 98 (Tyndall Parkway) and Tram Road intersection in Callaway. Therefore, only these four intersections were analyzed for the existing year 2012.

The configuration of the intersection of Tram Road (Gulf Coast Parkway Segment 25) at US 98, as well as the intersection of Nehi Road (Gulf Coast Parkway Segment 26) at US 231, were handled as special cases because their conceptual geometric design, based on traffic demand, called for a redesigned layout. For Tram Road and US 98 this required a new intersection configuration with improvement to US 98. For the Nehi Road and US 231 intersection a new grade separated intersection was required.

DDHV were developed for both the AM and PM peak periods at the major intersections of the new proposed road and for existing intersections within the study area. **Figures 6-1a** to **6-1c** present the DDHV for existing year (if intersection is existing) and all future years, per intersection type, except for the two north terminal points noted above, which are presented in **Figures 6-2** and **6-3**.

Table 6-3: Existing Year 2011 Roadway Segment LOS

Roadway	Segment	Adopted LOS Standard	LOS Maximum Volume	Functional Classification	Facility Type	Area Type	No. Of Lanes	2011 AADT	2011 LOS
CR 386	US 98 – 15th St.	C	11,000	Minor Arterial	Undivided	Rural Developed	2	1,700	B
CR 386	15th St. – N. Long St.	C	8,600	Minor Arterial	Undivided	Rural Undeveloped	2	1,900	A
CR 386	N. Long St. – SR 71	C	8,600	Minor Arterial	Undivided	Rural Undeveloped	2	1,500	A
SR 71	CR 386 – SR 22	C	11,000	Minor Arterial	Undivided	Rural developed	2	5,600	C
SR 22	West of SR 71 – Bay Co. Line	C	8,600	Minor Arterial	Undivided	Rural Undeveloped	2	2,800	B
SR 22	Bay Co. Line – Sandy Creek Rd.	C	13,100	Minor Arterial	Undivided	Transitioning to Urban	2	3,400	B
SR 22	Sandy Creek Rd. – CR 2297 (Allanton Rd.)	D	16,400	Minor Arterial	Undivided	Urban	2	4,300	B
SR 22	CR 2297 – Star Ave.	D	16,400	Minor Arterial	Undivided	Urban	2	10,500	C
SR 22	Star Ave. – US 98	D	16,400	Minor Arterial	Undivided	Urban	2	18,500	**F**
SR 22	West of US 98	D	16,400	Minor Arterial	Undivided	Urban	2	11,300	C
US 98	Gulf Co., east of CR 386	C	12,700	Principal Arterial	Undivided	Rural Developed	2	10,000	C
US 98	CR 386 – Tyndall Air Force Base (AFB)	C	12,700	Principal Arterial	Undivided	Rural Developed	2	9,200	C
US 98	Tyndall AFB – SR 22	D	35,700	Principal Arterial	Divided	Urban	4	34,600	D
US 98	SR 22- Tram Rd.	D	35,700	Principal Arterial	Divided	Urban	4	35,850	**F**
US 98	Tram Rd. – Transmitter Rd.	D	35,700	Principal Arterial	Divided	Urban	4	31,600	C
US 231	Transmitter Rd. – CR 390	C	35,700	Principal Arterial	Divided	Urban	4	25,800	B
US 231	CR 390 – Star Ave.	C	35,700	Principal Arterial	Divided	Urban	4	30,400	B
US 231	Star Ave. to the East	C	35,700	Principal Arterial	Divided	Urban	4	29,300	B
Star Ave.	SR 22 – Tram Rd.	D	16,400	Major Collector	Undivided	Urban	2	7,900	C
Star Ave.	Tram Rd. – US 231	D	16,400	Urban Collector	Undivided	Urban	2	8,300	C
Tram Road	US 98 – Star Ave.	D	19,600	Minor Collector	Undivided	Urban	2	900	A
Transmitter Rd	US 98 – US 231	D	16,400	Minor Arterial	Undivided	Urban	2	11,000	C
CR 390	North – Northwest of US 231	D	19,600	Urban Collector	Undivided	Urban	2	7,100	C
CR 2321	North – Northwest of US 231	D	19,600	Minor Arterial	Undivided	Urban	2	4,400	B
John Pitts Rd/	CR 2293 (John Pitts Rd.) 300 ft. east of Star Ave.	D	19,600	Minor Arterial	Undivided	Urban	2	3,600	B

Sources;
Traffic from 2011 FDOT Traffic Information DVD
LOS data from FDOT Project Traffic Forecasting Handbook (2012), and
1. Year 2007 Gulf Co. LOS Report provided by Apalachee Regional Planning Council planning staff in September 2009
2. Year 2009 Bay Co. Congestion Management System Plan Report, Bay County Transportation Planning Organization (TPO), from www.wfrpc.org/bay documents accessed in September 2009
Note: Letters in BOLD reflect a LOS below recommended value
The congestion management databases from Gulf and Bay Counties were used to determine adopted LOS and road class only. Actual LOS volumes were obtained from the 2009 FDOT's QLOS Handbook.

Table 6-4a: Design Year Road Segment LOS: Alternative 8

Roadway	Segment	Year 2011 AADT	Adopted LOS Standard	LOS Maximum Volume	Functional Classification	Facility Type	Area Type	No. Of Lanes	2035 AADT	2035 LOS
	Segment 1									
US 98	East of CR 386	10000	C	14,200	Principal Arterial	Undivided	Rural Developed	2	19165	D
US 98	West of CR 386	9200	C	14,200	Principal Arterial	Undivided	Rural Developed	2	7500	B
CR 386	US 98 – 15th St.	1700	B	23,800	Principal Arterial	Divided	Rural Developed	4	13635	B
CR 386	15th St. – Gulf Coast Parkway Segment 3	1900	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	13935	B
CR 386	Gulf Coast Parkway Segment 3 – SR 71	1500	C	8,100	Minor Arterial	Undivided	Rural Undeveloped	2	2600	B
	Segments 3, 8, 10, 14, 15									
Gulf Coast Parkway, Seg. 3, 8, 10	CR 386 – SR 22	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	10735	B
SR 22	East of Gulf Coast Parkway, Segment 10	2800	C	8,100	Minor Arterial	Undivided	Rural Undeveloped	2	5751	C
SR 22	Gulf Coast Parkway, Segment 10 – CR 2297 (Allanton Rd.)	4300	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	18986	B
SR 22	East of Gulf Coast Parkway, Segment 15	10500	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	29586	C
SR 22	West of Gulf Coast Parkway, Segment 15	10500	C	15,100	Minor Arterial	Undivided	Transitioning to Urban	2	16659	D
Gulf Coast Parkway, Seg. 15, 17,21	North of SR 22	0	B	31,400	Principal Arterial	Divided	Transitioning to Urban	4	14386	B
	Segments 17, 21									
Gulf Coast Parkway 17, 21	SR 22 – Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	14386	B
Star Avenue	South of Gulf Coast Parkway (South of Tram Rd.)	7400	D	14,850	Urban Collector	Undivided	Urban	2	10036	C
Gulf Coast Parkway Seg. 25 (Tram Rd.)	West of Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	B
Star Avenue	North of Tram Road	8300	D	36,700	Principal Arterial	Divided	Urban	4	16143	B
	Segment 25									
Tram Road	US 98 – Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	B
US 98	South of Tram Road	35850	D	55,300	Principal Arterial	Divided	Urban	6	51000	C
US 98	North of Tram Road	31600	D	55,300	Principal Arterial	Divided	Urban	6	51200	C
14th Street	West of Tyndall Parkway (US 98)	700	D	14,850	Minor Collector	Undivided	Urban	2	1200	B
	Segment 26, 27									
Gulf Coast Parkway, Seg. 26	Tram Road – Nehi Road	8300	D	36,700	Principal Arterial	Divided	Urban	4	16143	B
Star Avenue (Seg. 28)	North of Gulf Coast Parkway, Segment 26, 27	0	D	14,850	Urban Collector	Undivided	Urban	2	6036	B
Gulf Coast Parkway, Seg. 27	Star Avenue – US 231	0	D	36,700	Principal Arterial	Divided	Urban	4	10243	B
US 231	West, Southwest of Gulf Coast Parkway, Seg. 27	25800	D	55,300	Principal Arterial	Divided	Urban	6	45085	C
US 231	East, Northeast of Gulf Coast Parkway, Seg. 27	30400	D	55,300	Principal Arterial	Divided	Urban	6	54011	D

Sources;

Traffic from 2011 FDOT Florida Traffic Information DVD
LOS data from FDOT Project Traffic Forecasting Handbook (2009), and
Year 2007 Gulf Co. LOS Report provided by Apalachee Regional Planning Council planning staff in September 2009
Year 2009 Bay Co. Congestion Management System Plan Report, Bay County TPO, from www.wfrpc.org/bay documents accessed in September 2009
Note: Letters in BOLD reflect a LOS below recommended value
SR 22 is assumed to have capacity (4-lane) improvements upstream/downstream of its intersection with Gulf Coast Parkway.
The congestion management databases from Gulf and Bay Counties were used to determine adopted LOS and road class only. Actual LOS volumes were obtained from the 2009 FDOT's QLOS Handbook.

Table 6-4b: Design Year Road Segment LOS: Alternative 14

Roadway	Segment	Year 2011 AADT	Adopted LOS Standard	LOS Maximum Volume	Functional Classification	Facility Type	Area Type	No. Of Lanes	2035 AADT	2035 LOS
	Segment 1, 3									
US 98	East of CR 386	10000	C	14,200	Principal Arterial	Undivided	Rural Developed	2	19165	**D**
US 98	West of CR 386	9200	C	14,200	Principal Arterial	Undivided	Rural Developed	2	7500	B
CR 386	US 98 – 15th Street	1700	B	23,800	Principal Arterial	Divided	Rural Developed	4	13635	B
CR 386	15th Street – Gulf Coast Parkway Segment 3	1900	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	13935	B
CR 386	Gulf Coast Parkway Segment 3 – SR 71	1500	C	8,100	Minor Arterial	Undivided	Rural Undeveloped	2	2600	B
	Segments 3, 8, 10, 15									
Gulf Coast Parkway, Seg. 3, 8, 10	CR 386 – SR 22	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	10735	B
SR 22	East of Gulf Coast Parkway, Segment 10	2800	C	8,100	Minor Arterial	Undivided	Rural Undeveloped	2	5751	C
SR 22 Gulf Coast Parkway Seg. 14	West of Gulf Coast Parkway, Segment 10	3400	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	17486	B
SR 22 Gulf Coast Parkway Seg. 15	West of Gulf Coast Parkway, Segment 30	10500	C	45,400	Principal Arterial	Divided	Transitioning to Urban	4	29586	B
SR 22	West of Gulf Coast Parkway, Segment 15	10500	D	21.100	Minor Arterial	Undivided	Transitioning to Urban	2	17250	D
Gulf Coast Parkway, Seg 15, 17, 21	North of SR 22	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	1489	B
	Segments 17, 21									
Gulf Coast Parkway Seg. 17, 21	SR 22 – Tram Road	0	D	36,700	Principal Arterial	Divided	Urban	4	14386	B
Star Avenue	South of Gulf Coast Parkway (South of Tram Rd.)	7400	D	14,850	Urban Collector	Undivided	Urban	2	10036	C
Gulf Coast Parkway Seg. 25 (Tram Rd.)	West of Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	B
Star Avenue	North of Tram Road	8300	D	36,700	Principal Arterial	Divided	Urban	4	16143	B
	Segment 25									
Tram Road	US 98 – Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	B
US 98	South of Tram Road	35850	D	55,300	Principal Arterial	Divided	Urban	6	51000	C
US 98	North of Tram Road	31600	D	55,300	Principal Arterial	Divided	Urban	6	51200	C
14th Street	West of Tyndall Parkway (US 98)	700	D	14,850	Minor Collector	Undivided	Urban	2	1200	B
	Segment 30, 31, 36-38									
Gulf Coast Parkway, Seg. 30, 31, 36-38	SR 22 – US 231	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	1489	B
US 231	Star Avenue to East	100	C	45,400	Principal Arterial	Divided	Transitioning to Urban	4	44296	C
US 231	US 231 (1,480 feet south of CR 388)	0	C	45,400	Principal Arterial	Divided	Transitioning to Urban	4	30523	C

Sources;

Traffic from 2011 FDOT Florida Traffic Information DVD

LOS data from FDOT Project Traffic Forecasting Handbook (2009), and

Year 2007 Gulf Co. LOS Report provided by Apalachee Regional Planning Council planning staff in September 2009

Year 2009 Bay Co. Congestion Management System Plan Report, Bay County TPO, from www.wfrpc.org/bay documents accessed in September 2009

Note: Letters in **BOLD** reflect a LOS below recommended value

SR 22 is assumed to have capacity (4-lane) improvements upstream/downstream of its intersection with Gulf Coast Parkway.

The congestion management databases from Gulf and Bay Counties were used to determine adopted LOS and road class only. Actual LOS volumes were obtained from the 2009 FDOT's QLOS Handbook.

Table 6-4c: Design Year Road Segment LOS: Alternative 15

Roadway	Segment	Year 2011 AADT	Adopted LOS Standard	LOS Maximum Volume	Functional Classification	Facility Type	Area Type	No. Of Lanes	2035 AADT	2035 LOS
	Segment 1									
US 98	East of CR 386	10000	C	14,200	Principal Arterial	Undivided	Rural Developed	2	19165	D
US 98	West of CR 386	9200	C	14,200	Principal Arterial	Undivided	Rural Developed	2	7500	B
CR 386	US 98 – 15th Street	1700	B	23,800	Principal Arterial	Divided	Rural Developed	4	13635	B
CR 386	15th Street – Gulf Coast Parkway Segment 3	1900	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	13935	B
CR 386	Gulf Coast Parkway Segment 3 – SR 71	1500	C	8,100	Minor Arterial	Undivided	Rural Undeveloped	2	2600	B
	Segments 3, 8, 10, 14, 15, 12, 40									
Gulf Coast Parkway, Seg. 3, 8, 10	CR 386 – SR 22	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	10735	B
SR 22	East of Gulf Coast Parkway, Segment 10	2800	C	8,100	Minor Arterial	Undivided	Rural Undeveloped	2	5751	C
SR 22- Gulf Coast Parkway Seg. 14	West of Gulf Coast Parkway, Segment 10	3400	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	17486	B
SR 22 – Gulf Coast Parkway Seg. 15	West of Gulf Coast Parkway, Segment 14	3400	C	41,100	Principal Arterial	Divided	Rural Undeveloped	4	17486	B
SR 22	West of Gulf Coast Parkway, Segment 15	10500	D	21,100	Minor Arterial	Undivided	Transitioning to Urban	2	16659	D
Gulf Coast Parkway, Seg. 12, 40	North of SR 22	100	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	1489	B
	Segments 17, 21									
Gulf Coast Parkway Seg. 17, 21	SR 22 – Tram Road	0	D	36,700	Principal Arterial	Divided	Urban	4	14386	B
Star Avenue	South of Gulf Coast Parkway (South of Tram Rd.)	7400	D	14,850	Urban Collector	Undivided	Urban	2	10036	C
Gulf Coast Parkway Seg. 25 (Tram Rd.)	West of Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	B
Star Avenue	North of Tram Road	8300	D	36,700	Principal Arterial	Divided	Urban	4	16143	B
	Segment 25									
Tram Road	US 98 – Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	**B**
US 98	South of Tram Road	35850	D	55,300	Principal Arterial	Divided	Urban	6	51000	C
US 98	North of Tram Road	31600	D	55,300	Principal Arterial	Divided	Urban	6	51200	C
14th Street	West of Tyndall Parkway (US 98)	700	D	14,850	Minor Collector	Undivided	Urban	2	1200	B
	Segment 12, 40, 41									
Gulf Coast Parkway, Seg. 40, 41	SR 22 – US 231	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	1513	B
US 231	Star Avenue to East	21000	C	45,400	Principal Arterial	Divided	Transitioning to Urban	4	29243	B
US 231	US 231 (1,480 feet south of CR 388)	20000	C	45,400	Principal Arterial	Divided	Transitioning to Urban	4	29243	B

Sources;
Traffic from 2011 FDOT Florida Traffic Information DVD
LOS data from FDOT Project Traffic Forecasting Handbook (2009), and
Year 2007 Gulf Co. LOS Report provided by Apalachee Regional Planning Council planning staff in September 2009
Year 2009 Bay Co. Congestion Management System Plan Report, Bay County TPO, from www.wfrpc.org/bay documents accessed in September 2009
Note: Letters in BOLD reflect a LOS below recommended value
SR 22 is assumed to have capacity (4-lane) improvements upstream/downstream of its intersection with Gulf Coast Parkway.
The congestion management databases from Gulf and Bay Counties were used to determine adopted LOS and road class only. Actual LOS volumes were obtained from the 2009 FDOT's Quality LOS (QLOS) Handbook.

Table 6-4d: Design Year Road Segment LOS: Alternative 17

Roadway	Segment	Year 2011 AADT	Adopted LOS Standard	LOS Maximum Volume	Functional Classification	Facility Type	Area Type	No. Of Lanes	2035 AADT	2035 LOS
	Segment 2									
US 98	East of CR 386	10000	C	14,200	Principal Arterial	Undivided	Rural Developed	2	19165	D
US 98	West of CR 386	9200	C	14,200	Principal Arterial	Undivided	Rural Developed	2	7500	B
CR 386	US 98 – 15th Street	1700	B	23,800	Principal Arterial	Divided	Rural Developed	4	13635	B
CR 386	15th Street – Gulf Coast Parkway Segment 2	1900	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	13935	B
CR 386	Gulf Coast Parkway Segment 2 – SR 71	1500	C	8,100	Minor Arterial	Undivided	Rural Undeveloped	2	2600	B
Gulf Coast Parkway, Seg. 2	West of CR 386	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	10735	B
	Segments 16, 18, 21									
Gulf Coast Parkway, Seg. 2	CR 386 – SR 22	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	10735	B
SR 22	East of Gulf Coast Parkway, Segment 2	10500	D	22,200	Minor Arterial	Undivided	Urban	2	20586	D
SR 22	West of Gulf Coast Parkway, Segment 2	10500	D	22,200	Minor Arterial	Undivided	Urban	2	16659	D
Gulf Coast Parkway Seg 16, 18,21	SR 22 – Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	14386	B
Star Avenue	South of Gulf Coast Parkway (South of Tram Rd.)	7400	D	14,850	Urban Collector	Undivided	Urban	2	10036	C
Gulf Coast Parkway Seg. 25 (Tram Road)	West of Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	B
Star Avenue (Gulf Coast Parkway Seg 26)	North of Tram Road	8300	D	36,700	Principal Arterial	Divided	Urban	4	14043	B
	Segment 25									
Tram Road	US 98 – Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	B
US 98	South of Tram Road	35850	D	55,300	Principal Arterial	Divided	Urban	6	51000	C
US 98	North of Tram Road	31600	D	55,300	Principal Arterial	Divided	Urban	6	51200	C
14th Street	West of Tyndall Parkway (US 98)	700	D	14,850	Minor Collector	Undivided	Urban	2	1200	B
	Segment 26, 27									
Star Ave. South of Seg. 27	Tram Road – Segment 27	8300	D	36,700	Principal Arterial	Divided	Urban	4	14043	B
Star Avenue	North of Gulf Coast Parkway, Segment 27	0	D	14,850	Urban Collector	Undivided	Urban	2	6036	B
Gulf Coast Parkway, Segment 27	West of Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	10243	B
US 231	West, Southwest of Gulf Coast Parkway Seg 27	25800	D	55,300	Principal Arterial	Divided	Urban	6	45085	C
US 231	East, Northeast of Gulf Coast Parkway Seg. 27	30400	D	55,300	Principal Arterial	Divided	Urban	6	54011	D

Sources;

Traffic from 2011 FDOT Florida Traffic Information DVD

LOS data from FDOT Project Traffic Forecasting Handbook (2009), and

Year 2007 Gulf Co. LOS Report provided by Apalachee Regional Planning Council planning staff in September 2009

Year 2009 Bay Co. Congestion Management System Plan Report, Bay County TPO, from www.wfrpc.org/bay documents accessed in September 2009

Note: Letters in **BOLD** reflect a LOS below recommended value

SR 22 is assumed to have capacity (4-lane) improvements upstream/downstream of its intersection with Gulf Coast Parkway.

The congestion management databases from Gulf and Bay Counties were used to determine adopted LOS and road class only. Actual LOS volumes were obtained from the 2009 FDOT's QLOS Handbook.

Table 6-4e: Design Year Road Segment LOS: Alternative 19

Roadway	Segment	Year 2011 AADT	Adopted LOS Standard	LOS Maximum Volume	Functional Classification	Facility Type	Area Type	No. Of Lanes	2035 AADT	2035 LOS
	Segment 2									
US 98	East of CR 386	10000	C	14,200	Principal Arterial	Undivided	Rural Developed	2	19165	D
US 98	West of CR 386	9200	C	14,200	Principal Arterial	Undivided	Rural Developed	2	7500	B
CR 386	US 98 – 15th Street	1700	B	23,800	Principal Arterial	Divided	Rural Developed	4	13635	B
CR 386	15th Street – Gulf Coast Parkway Segment 2	1900	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	13935	B
CR 386	Gulf Coast Parkway Segment 2 – SR 71	1500	C	8,100	Minor Arterial	Undivided	Rural Undeveloped	2	2600	B
Gulf Coast Parkway, Seg. 2	West of CR 386	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	10735	B
	Segments 16, 18, 21									
Gulf Coast Parkway, Seg. 2	CR 386 – SR 22	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	10735	B
SR 22	East of Gulf Coast Parkway, Segment 2	10500	D	22,200	Minor Arterial	Undivided	Urban	2	20586	D
SR 22	West of Gulf Coast Parkway, Segment 2	10500	D	22,200	Minor Arterial	Undivided	Urban	2	16659	D
Gulf Coast Parkway Seg 16, 18,21	SR 22 – Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	13986	B
Star Avenue	South of Gulf Coast Parkway (South of Tram Rd.)	7400	D	14,850	Urban Collector	Undivided	Urban	2	10036	**C**
Gulf Coast Parkway Seg. 25 (Tram Road)	West of Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	B
Star Avenue (Gulf Coast Parkway Seg 26)	North of Tram Road	8300	D	36,700	Principal Arterial	Divided	Urban	4	14043	B
	Segment 25									
Tram Road	US 98 – Star Avenue	0	D	36,700	Principal Arterial	Divided	Urban	4	12443	**B**
US 98	South of Tram Road	35850	D	55,300	Principal Arterial	Divided	Urban	6	51000	C
US 98	North of Tram Road	31600	D	55,300	Principal Arterial	Divided	Urban	6	51200	C
14th Street	West of Tyndall Parkway (US 98)	700	D	14,850	Minor Collector	Undivided	Urban	2	1200	B
	Segment 29, 34, 36-38									
Gulf Coast Parkway Seg. 29, 34, 36-38	Gulf Coast Parkway Seg. 16 - US 231	0	B	26,300	Principal Arterial	Divided	Rural Undeveloped	4	1513	B
US 231	Star Avenue to the East	21000	C	45,400	Principal Arterial	Divided	Transitioning to Urban	4	33425	C
US 231	US 231 (1,480" south of CR 388)	20000	C	45,400	Principal Arterial	Divided	Transitioning to Urban	4	29243	B

Sources;

Traffic from 2011 FDOT Florida Traffic Information DVD

LOS data from FDOT Project Traffic Forecasting Handbook (2009), and

Year 2007 Gulf Co. LOS Report provided by Apalachee Regional Planning Council planning staff in September 2009

Year 2009 Bay Co. Congestion Management System Plan Report, Bay County TPO, from www.wfrpc.org/bay documents accessed in September 2009

Note: Letters in **BOLD** reflect a LOS below recommended value

SR 22 is assumed to have capacity (4-lane) improvements upstream/downstream of its intersection with Gulf Coast Parkway.

The congestion management databases from Gulf and Bay Counties were used to determine adopted LOS and road class only. Actual LOS volumes were obtained from the 2009 FDOT's QLOS Handbook.

Figure 6-1a: Opening Year 2012 DDHV

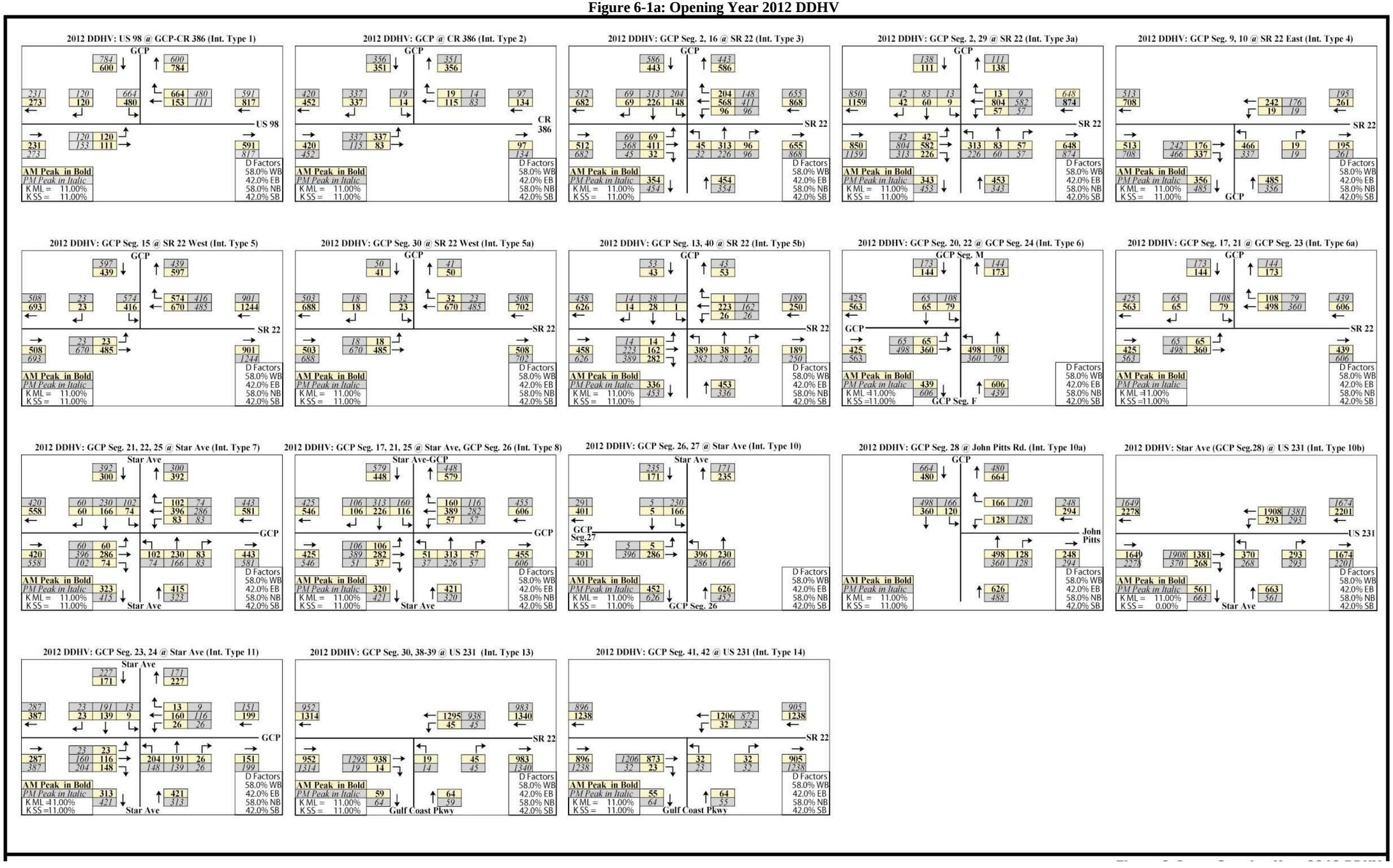


Figure 6-1b: Interim Year 2022 DDHV

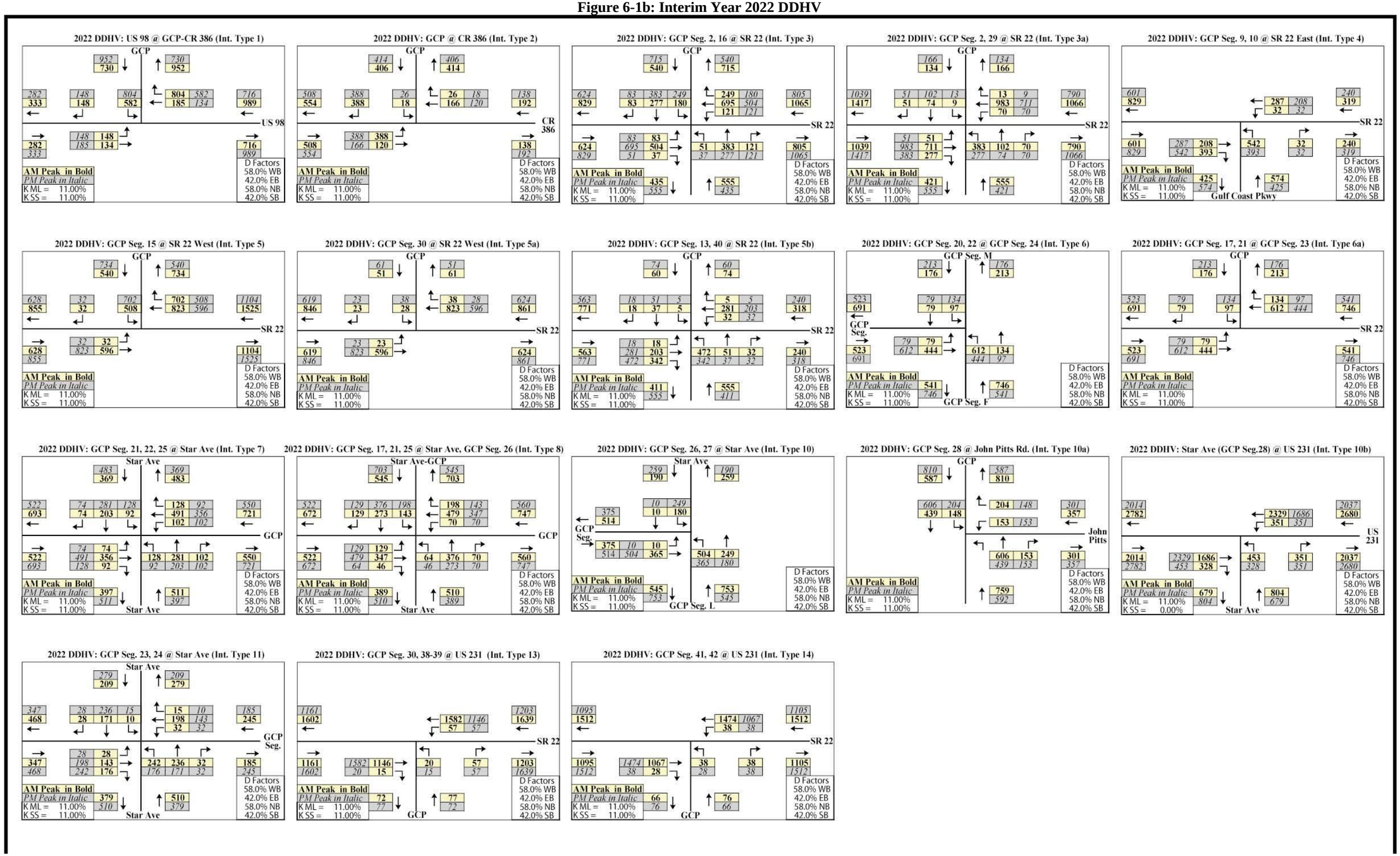


Figure 6-1c: Design Year 2032 DDHV

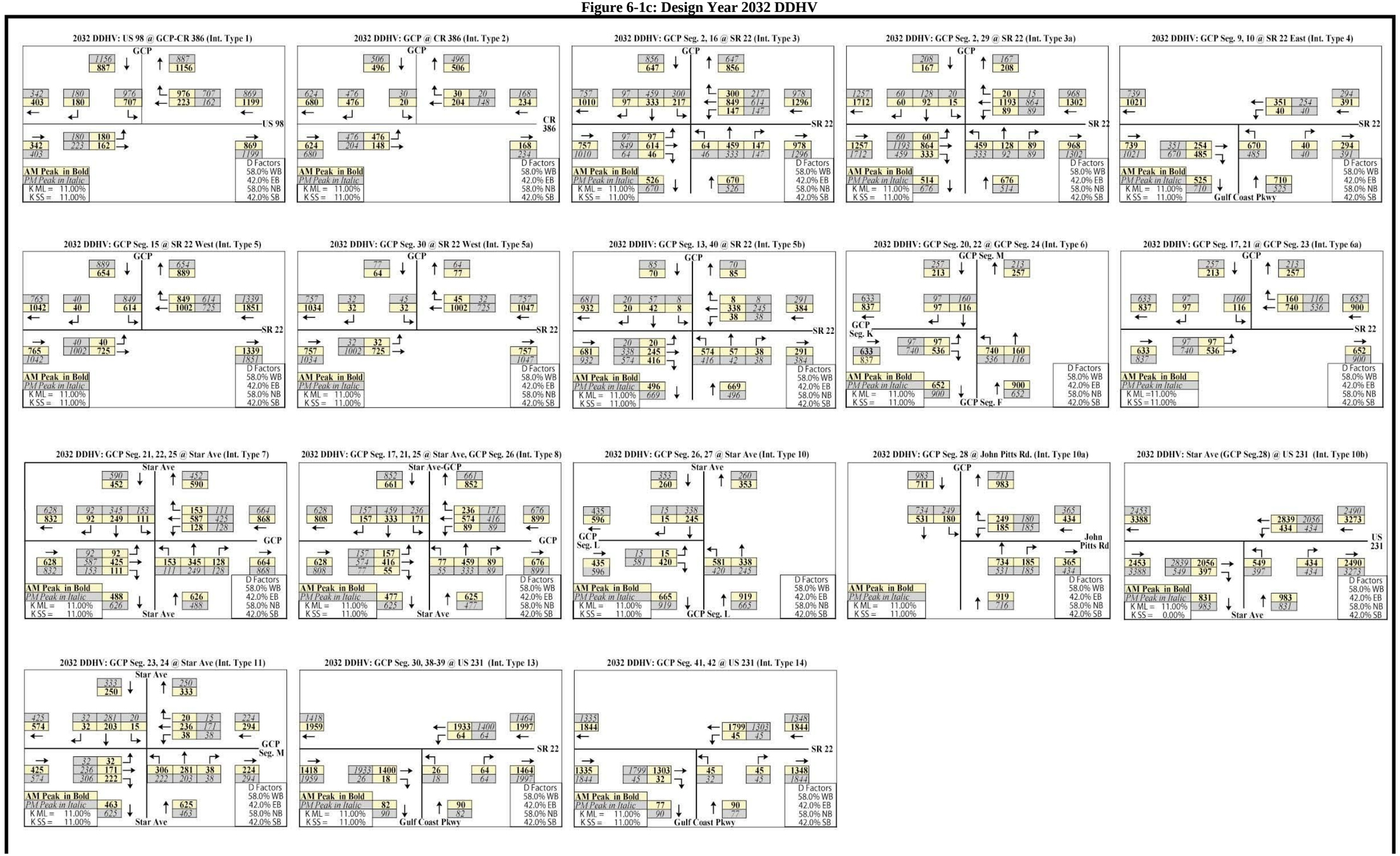


Figure 6-2: US 98 (Tyndall Parkway)/Gulf Coast Parkway (Tram Road) Intersection Configuration DDHV

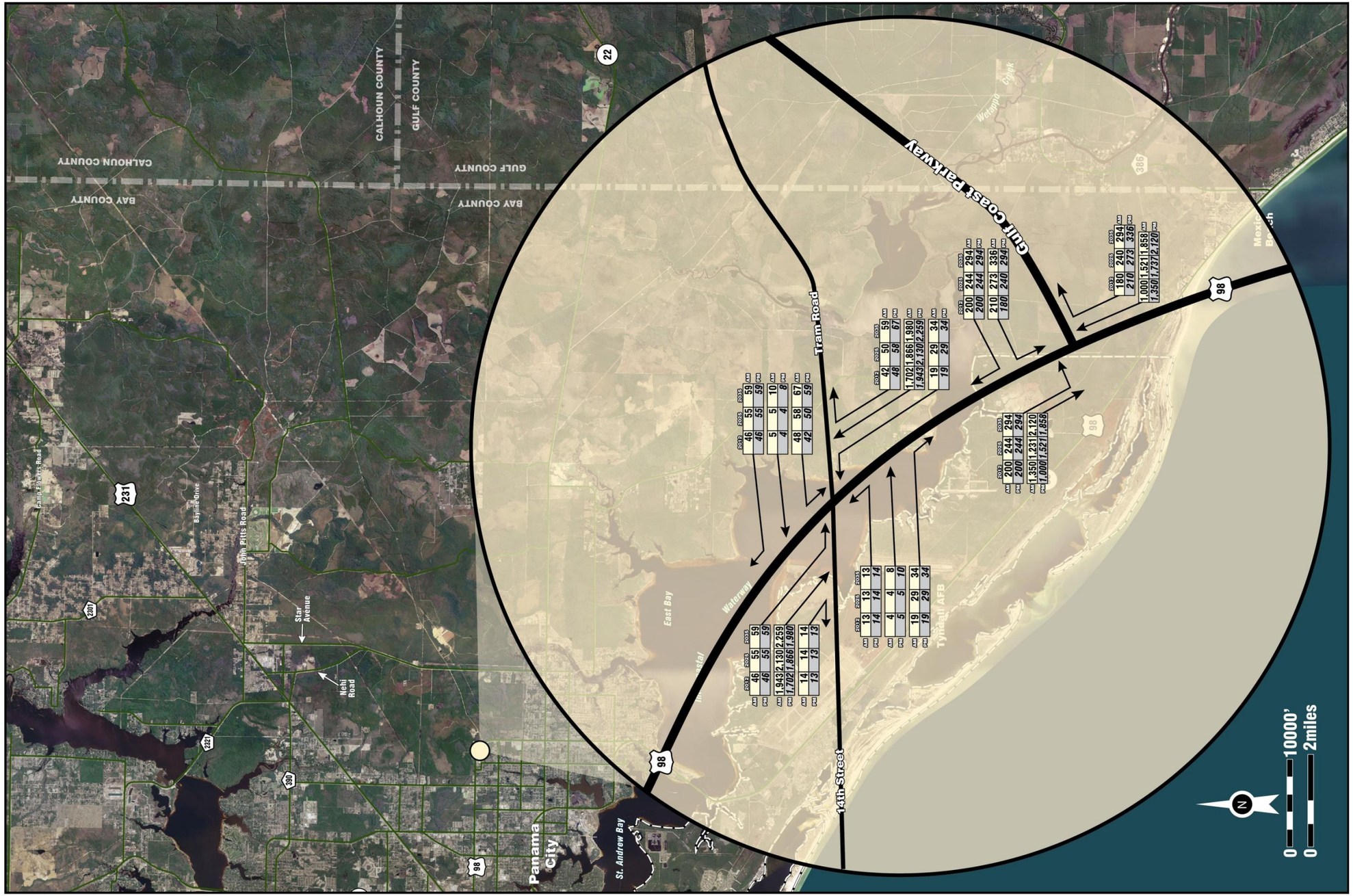
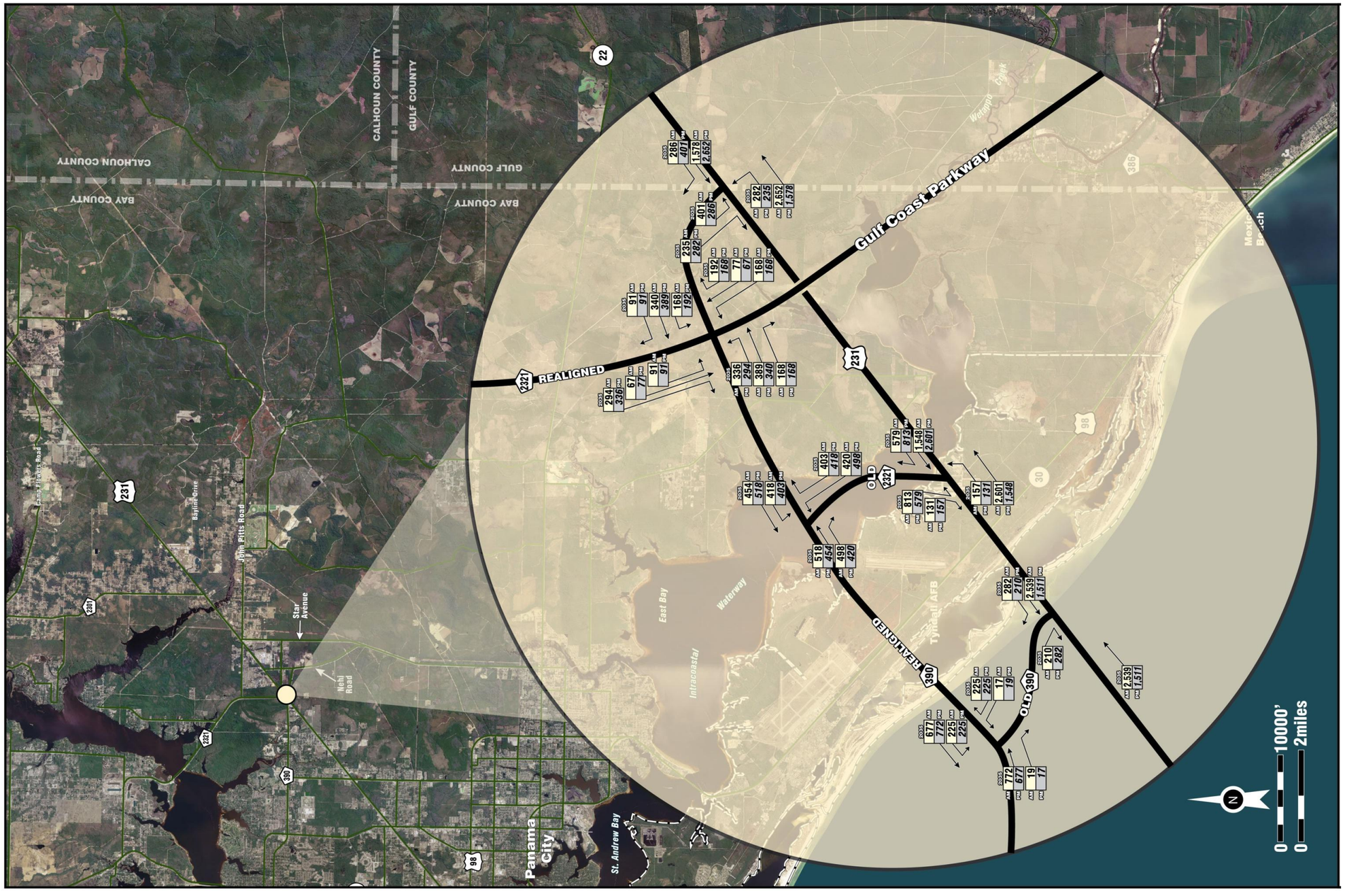


Figure 6-3: US 231/Gulf Coast Parkway (Nehi Road) Intersection Configuration DDHV



Existing Year Intersection LOS

The existing year (2012) peak hour turning movement volumes for the AM and PM peak periods at selected intersections using existing intersection arrangements and number of lanes were input into Synchro to analyze LOS conditions. **Table 6-5,** which summarizes the LOS results for existing conditions, indicates that the LOS at the study intersections is currently below the FDOT standard with the exception of the intersection at US 231 and Star Avenue.

Table 6-5: Existing (2012) Year Intersection LOS (No-Build Scenario)

Intersections	AM LOS	PM LOS
US 98 and CR 386 (Unsignalized)	F	F
SR 22 and Star Avenue (Signalized)	E	E
Star Avenue and US 231 (Signalized)	B	C
US 98 and Tram Road (Unsignalized)	F	F

Future Year Intersection LOS

Intersections have been classified into types based on the projected traffic volumes, the various arrangements of lanes, and intersection controls. Along the alignments for Gulf Coast Parkway Alternatives 8, 14, 15, 17, and 19 there are fourteen intersection types (**Table 6-6**). **Figure 6-4** identifies the locations of the intersections analyzed with a letter designation (not to be confused with LOS letter designations). The letter designation is also shown in parentheses after the description of the intersection in **Table 6-6**.

These intersections were analyzed as either two-way stop controlled, all-way stop controlled, or signalized intersections with optimized signal timings on existing geometry to determine if signalization was required to achieve acceptable intersection LOS. If signal controlled operation could not achieve acceptable LOS conditions, then additional analysis was conducted to determine if additional geometric improvements were required to meet acceptable LOS.

Table 6-7 summarizes the future capacity analyses for the Alternative 8, 14, 15, 17 and 19 intersections in both opening year (2012) and design year (2035). As it was already mentioned, additional performance details can be found in the *Traffic Report* prepared for this project.

Table 6-6: List of Intersections Analyzed for Alternatives 8, 14, 15, 17 and 19

Intersection Type	Alternative 8	Alternative 14	Alternative 15	Alternative 17	Alternative 19
1	US 98 @ CR 386 (A)	US 98 @ CR 386 (A)	US 98 @ CR 386 (A)	US 98 @ CR 386 (A)	US 98 @ CR 386 (A)
2	CR 386@ Gulf Coast Parkway, Seg 3 (C)	CR 386 @ Gulf Coast Parkway. Seg 3 (C)	CR 386 @ Gulf Coast Parkway, Seg 3 (C)	CR 386 @ Gulf Coast Parkway, Seg 2 (B)	CR 386 @ Gulf Coast Parkway, Seg 2 (B)
3				Gulf Coast Parkway Seg 2, 16 @ SR 22 (G)	Gulf Coast Parkway Seg 2, 29 @ SR 22 (G)
4	Gulf Coast Parkway Seg 10 @ SR 22 (D)	Gulf Coast Parkway Seg 10 @ SR 22 (D)	Gulf Coast Parkway Seg 10 @ SR 22 (D)		
5	Gulf Coast Parkway Seg 15 @ SR 22 (H)	Gulf Coast Parkway Seg 15 @ SR 22 (H)	Gulf Coast Parkway Seg 15 @ SR 22 (H)		
5a		Gulf Coast Parkway Seg 30 @ SR 22 (F)	Gulf Coast Parkway Seg 12, 40 @ SR 22 (E)		
6					Gulf Coast Parkway Seg 16, 29 @ Gulf Coast Parkway Seg. 29 (O)
7		Gulf Coast Parkway Seg 21, 25 @ Star Avenue (I)	Gulf Coast Parkway Seg 21, 25 @ Star Avenue (I)		Gulf Coast Parkway Seg 21, 25 @ Star Avenue (I)
8	Gulf Coast Parkway Seg 21, 25 @ Star Ave Gulf Coast Parkway Seg.26 (I)			Gulf Coast Parkway Seg 21, 25 @ Star Ave Gulf Coast Parkway Seg.26 (I)	
9	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)
10	Gulf Coast Parkway Seg 26, 27 @ Star Ave (K)			Gulf Coast Parkway Seg 26, 27 @ Star Ave (K)	
12	Gulf Coast Parkway Seg 27 @ US 231 (L)			Gulf Coast Parkway Seg 27 @ US 231 (L)	
13		Gulf Coast Parkway Seg 30, 36-38 @ US 231 (M)			Gulf Coast Parkway Seg 30, 36-38 @ US 231 (M)
14			Gulf Coast Parkway Seg 40, 41 @ US 231 (N)		

Source: PBS&J
Note: Highlighted intersections are special cases, which were analyzed separately as interchanges and phased construction. Details in Appendices D and E of the *Traffic Report*
Letters in parenthesis designated the intersection shown on Figure 6-4..

Figure 6-4: Gulf Coast Parkway Alternatives' Intersections Subject to Operational Analysis

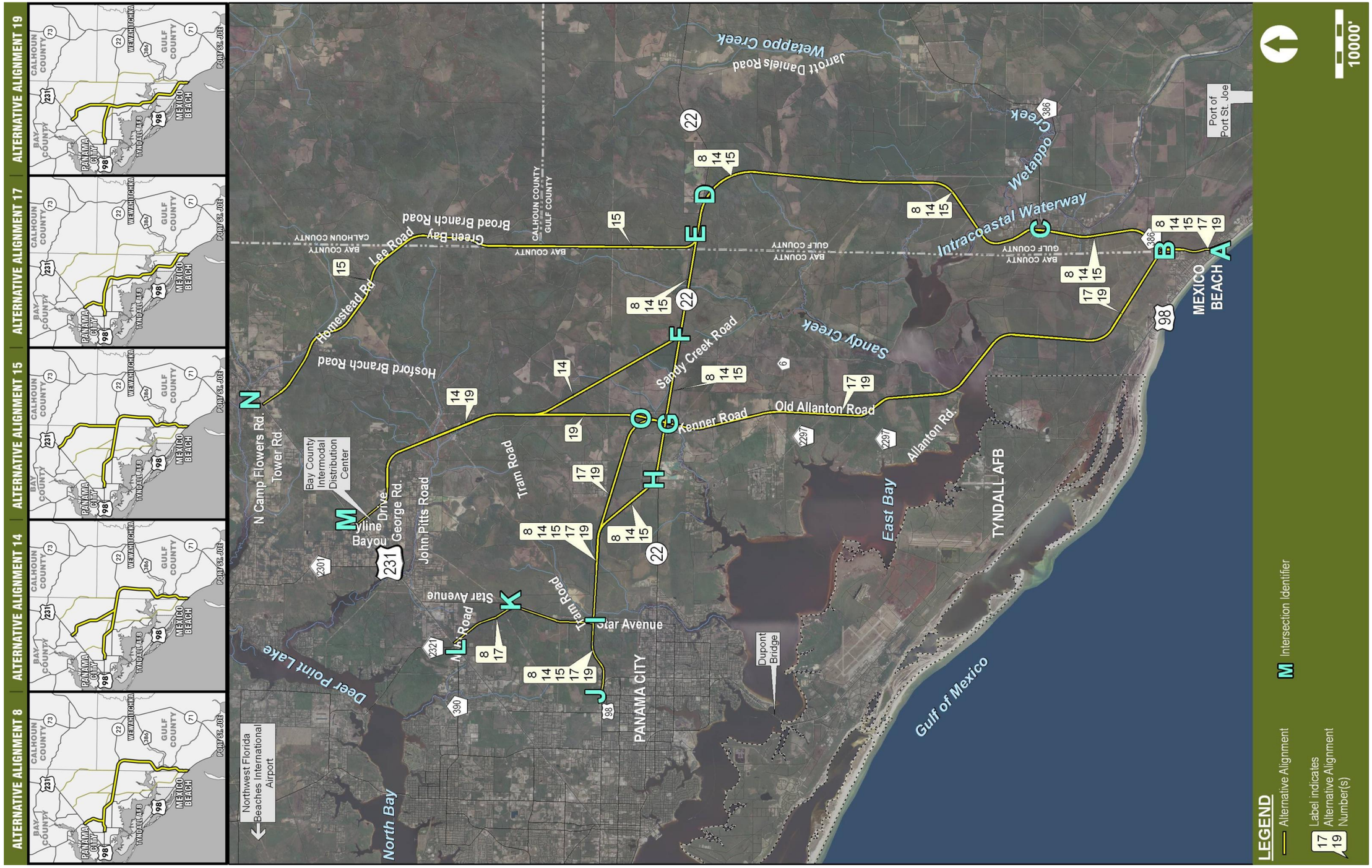


Table 6-7: Future Year (2012 and 2035) Intersection LOS for Alternatives 8, 14, 15, 17, and 19

Intersection Type 1: US 98 and Gulf Coast Parkway/CR386 (A)		
2012 Design Hour Volume	***AM LOS***	***PM LOS***
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	B	B
Signalized with Improvements (EB LT, WB RT, Dual SB LT, SB RT)	A	A
2035 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**F**
Signalized with Improvements (EB LT, Dual EB TH, Dual WB TH/Shared RT, WB RT, Dual SB LT, SB RT)	B	B
Intersection Type 2: CR 386 at Gulf Coast Parkway Segment 2 (B) and CR 386 at Gulf Coast Parkway Segment 3 (C)		
2012 DHV		
Unsignalized with Existing Geometry	B	B
Signalized with Existing Geometry	B	B
Signalized with Improvements (EB: LT, TH, WB: TH, RT, SB: LT, RT)	A	A
2035 DHV		
Unsignalized with Existing Geometry	**E**	**F**
Signalized with Existing Geometry	B	C
Signalized with Improvements (Dual EB LT/Shared TH, EB TH, Dual WB TH/Shared RT, SB: LT, RT)	A	A
Intersection Type 3: SR 22 at Gulf Coast Parkway Segments 2, 16 (G) SR 22 at Gulf Coast Parkway Segments 2, 29 (G)		
2012 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**F**
Signalized with Improvements (WB: LT, TH, RT, NB RT, SB LT)	B	B
2035 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**F**
Signalized with Improvements (EB LT, 2 EB TH/Shared RT, WB: LT, 2TH, RT, SB: 2LT, Dual SB TH/Shared RT, NB: LT, 2TH/Shared RT)	C	C
Intersection Type 4: SR 22 at Gulf Coast Parkway Segment 10 (D)		
2012 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	B	B
Signalized with Improvement (EB RT)	B	A
2035 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	D	**E**
Signalized with Improvement (EB: TH, RT, WB TH, NB: 2 LT, RT)	A	A
Intersection Type 5: SR 22 at Gulf Coast Parkway Segment 15 (H)		
2012 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**E**
Signalized with Improvements (WB RT, Dual SB LT/Shared RT)	A	B
2035 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**F**
Signalized with Improvements (WB: RT, 2TH, Dual SB LT/ Shared RT)	A	B
Intersection Type 5A: SR 22 and Gulf Coast Parkway Segments 30 and SR 22 at Segment 12, 40(F)		
2012 DHV		
Unsignalized with Existing Geometry	C	D
Signalized with Existing Geometry	A	A
2035 DHV		
Unsignalized with Existing Geometry	C	D
Signalized with Existing Geometry	A	A
Signalized with Improvement (EB: LT, TH, WB TH, RT)	A	A

Intersection Type 6: Gulf Coast Parkway Segments 16, 29 at Gulf Coast Parkway Segment 29 (O)		
2012 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	D	C
Signalized with Improvements (EB: LT, NB: LT)	B	B
2035 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	**F**	**F**
Signalized with Improvements 4 lanes in each direction (EB: Shared LT/RT, RT, Dual NB LT and TH)	B	B
Intersection Type 7: Star Avenue at Gulf Coast Parkway Segments 21, 25 (I)		
2012 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	C	C
Signalized with Improvements (NB/SB/WB/EB: LT, TH/Shared RT)	B	B
2035 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	**F**	**F**
Signalized with Improvements 4 lanes in each direction (NB/SB: LT, Dual TH/Shared RT, EB/WB: LT, 2 TH, RT)	B	B
Intersection Type 8: Star Avenue, Gulf Coast Parkway Segment 26, at Gulf Coast Parkway Segments 17, 21, 25 (I)		
2012 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	C	D
Signalized with Improvements (NB/SB/WB/EB: LT, TH/Shared RT)	B	B
2035 DHV		
Unsignalized with 2 lanes in all direction	**F**	**F**
Signalized with 2 lanes in all direction	**F**	**F**
Signalized with Improvements 4 lanes in each direction (NB/SB: LT, Dual TH/Shared RT, EB/WB: LT, 2 TH, RT)	B	B
Intersection Type 10: Gulf Coast Parkway Seg 26, 27 at Star Avenue (K)		
2012 DHV		
Unsignalized with 2 lanes in each direction	B	C
Signalized with 2 lanes in each direction	B	B
Signalized with Improvements (NB: LT, TH, SB: TH, RT, EB: LT, RT)	A	A
2035 DHV		
Unsignalized with 2 lanes in all directions	**F**	**F**
Signalized with 2 lanes in all directions	D	C
Signalized with Improvements (NB: LT, 2 TH, Dual SB TH/Shared RT, EB: LT, RT)	B	B
Intersection Type 13: US 231 at Gulf Coast Parkway Segments 30, 38 (M)		
2012 DHV		
Signalized with Existing Geometry (4 lanes US 231 with Interim scenario)	A	A
Signalized with improvements (6 lanes US 231 with Interim scenario)	A	A
2035 DHV		
Signalized with Existing Geometry (4 lanes US 231 with Full Buildout scenario)	B	B
Signalized with Existing Geometry (6 lanes US 231 with Full Buildout scenario)	A	B
Intersection Type 14: US 231 at Gulf Coast Parkway Segments 40, 41 (N)		
2012 DHV		
Signalized with Existing Geometry (4 lanes US 231 with Interim scenario)	A	A
Signalized with improvements (6 lanes US 231 with Interim scenario)	A	A
2035 DHV		
Signalized with Existing Geometry (4 lanes US 231 with Full Buildout scenario)	B	B
Signalized with Existing Geometry (6 lanes US 231 with Full Buildout scenario)	A	B

Note: Bold values indicate unacceptable conditions.
Letters in parenthesis indicate the location of the intersection as shown on Figure 2-13.

Tables 6-8 and **6-9** present the LOS results for the intersection of future Gulf Coast Parkway (Segment 27)/US 231 and Gulf Coast Parkway (Segment 25)/US 98 (Tyndall Parkway) in existing year (2012) and design year (2035). The detailed analysis of the Gulf Coast Parkway @ US 231/CR 390/CR 2321 (Gulf Coast Parkway North Termini) intersection is included in the *Traffic Report*, Appendix D and the detailed analysis of the Gulf Coast Parkway @ US 98 / Tram Road (Tram Road Termini) intersection is included in the *Traffic Report*, Appendix E.

Table 6-8: Future Year LOS for US 231 @ Gulf Coast Parkway (Nehi Road)

Intersection Type 12: US 231 and Gulf Coast Parkway Segment 27		
2012 DHV	**AM LOS**	**PM LOS**
Signalized with Existing Geometry (4 lanes US 231 with Interim scenario)	C	C
Signalized with improvements (6 lanes US 231 with Interim scenario)	B	B
2035 DHV	**AM LOS**	**PM LOS**
Signalized with Existing Geometry (4 lanes US 231 with Full Buildout scenario)	**D**	C
Signalized with Existing Geometry (6 lanes US 231 with Full Buildout scenario)	A	B

Note: Bold values indicate unacceptable conditions.

The results of the 2012 scenario traffic condition analysis for US 231 and Gulf Coast Parkway (Segment 27) indicate that the intersection LOS would operate at LOS C or better with the Interim Scenario. The 2035 scenario traffic conditions analysis indicates that US 231 and Gulf Coast Parkway with US 231 widened to 6 lanes and the full build-out intersection scenario, would operate at LOS B or better.

Table 6-9: Future Year LOS for US 98 (Tyndall Parkway) @ Gulf Coast Parkway (Tram Road)

Intersection Type 9: US 98 (Tyndall Parkway) and Gulf Coast Parkway Segment 25		
2012 DHV	**AM LOS**	**PM LOS**
Signalized with Existing Geometry (Initial Scenario)	**E**	**D**
Signalized with improvements (WB: Dual LT lane and a single RT lane with Initial scenario)	B	B
2035 DHV	**AM LOS**	**PM LOS**
Signalized with improvements (6 lanes US 98 with final scenario)	A	B

Note: Bold values indicate unacceptable conditions.

For the Initial Scenario, the existing signalized intersection of US 98 (Tyndall Parkway) and Tram Road/Gulf Coast Parkway (Segment 25) was analyzed with only an additional northbound right turn lane on US 98. The results of the 2012 Initial Scenario traffic condition analysis indicate that US 98 (Tyndall Parkway) and Tram Road/Gulf Coast Parkway (Segment 25) would operate with unacceptable LOS conditions during the AM peak hour with the existing intersection arrangement and number of lanes. With the Tram Road/Gulf Coast Parkway (Segment 25) approach having dual left turn lanes and a single right turn lane, the intersection would operate at LOS B. Also, for the design year (2035), the intersection would have unacceptable LOS F conditions unless US 98 (Tyndall Parkway) is widened to six lanes. With a six-lane US 98 (Tyndall Parkway), the intersection would operate at LOS B or better.

The results of the future traffic analysis indicate that all of the proposed intersections will operate at an acceptable LOS with signalization and the proposed improvements.

6.2.5 Traffic Impact on Existing Roadways

The existing roadways of interest are US 98 (SR 30A or Tyndall Parkway), US 231 (SR 75), SR 22 (Wewa Highway), and Star Avenue (CR 2293), since these are the most important roadways within the study area. Table 6-5 shows that the segment of SR 22 between Star Ave and US 98 (Tyndall Parkway) is operating at LOS F in the year 2012. Similarly, US 98 (Tyndall Parkway) between SR 22 and Tram Road is also failing. US 98 (Tyndall Parkway) between Tyndall AFB and SR 22 is operating at the limit of the adopted LOS in the year 2012.

Alternatives 8 and 17 design traffic (Tables 2-4a and 2-4d, respectively) also shows that the intersection of the Gulf Coast Parkway with US 98 (Tyndall Parkway) and the intersection of the Gulf Coast Parkway with US 231 will need improving to six lanes to operate at an acceptable LOS.

A detailed analysis of the traffic impacts under different scenarios follows, so that these roadways mentioned above can be evaluated in terms of their respective performance without Gulf Coast Parkway and with each of the Gulf Coast Parkway alternatives present. They are presented in table format preceded by a brief bullet discussion.

Table 6-10 shows the traffic volumes and LOS for the selected roadways if the Gulf Coast Parkway is not built. This No Build scenario shows that:

- SR 22 will operate acceptably as a two-lane facility in Gulf County and in Bay County from SR 71 to west of CR 2297 (Allanton Road). The quality of the service is shown as at least LOS C in all future years.

- SR 22 from east of Star Ave. to Tyndall Parkway (US 98) should be improved at least from two lanes to a four-lane facility as this segment is failing in the year 2011. **Table 6-10** indicates that in the year 2035, even with four lanes, this same section is shown to fail. Improvements to this segment of SR 22 should include additional capacity from east of Star Avenue and west of US 98 (Tyndall Parkway) for the year 2035.

- US 98, from the east of the Tyndall AFB main entrance to the east of CR 386 falls below the adopted LOS C for a two-lane facility starting in the year 2025. Although it is not failing, the LOS is shown to be LOS "D" and will reach LOS E in 2035.

- US 98 (Tyndall Parkway) as a four-lane facility from west of the Tyndall AFB main entrance to north of Tram Road, is shown to be failing in all future years.

- US 231 (part of the Strategic Intermodal System {SIS}) has more stringent LOS requirements. It is currently a four-lane facility. The segment southwest of CR 390 is shown to be below the adopted LOS C in 2012, and failing in the years 2025 2035 (LOS F).

- US 231 northeast of CR 390 to east of Star Avenue is shown as LOS C through 2025 but falling to LOS D in 2035.

- Star Avenue does not need additional capacity in all future years in the "no-build" scenario. A two-lane Star Avenue is shown to operate at LOS C (north of Tram Road) and at LOS D (south of US 231) in 2035.

Table 6-10: Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: No-Build Scenario

Roadway	Segment	Adopted LOS Standard	Year 2011 AADT	Year 2011 LOS	No-Build Scenario: No Gulf Coast Parkway - Only SR 22 Partially Improved[1]							
					AADT (Background + DRI Traffic)			Future No. of Lanes	Future Facility Type	LOS		
					Year 2012	Year 2025	Year 2035			Year 2012	Year 2025	Year 2035
SR 22	West of SR 71 - Bay Co. line (Gulf Co.)	C	2,900	B	4,001	4,750	5,818	2	Undivided	B	B	C
SR 22	Bay Co. Line - Sandy Creek Rd	C	3,300	B	4,677	5,542	6,783	2	Undivided	C	C	C
SR 22	Sandy Creek Rd - CR 2297 (Allanton Rd.)	D	4,200	B	5,691	6,729	8,230	2	Undivided	C	C	C
SR 22	CR 2297 - Star Ave	D	10,300	C	12,673	14,910	18,203	4	Divided	C	D	**F**
SR 22	Star Ave - US 98	D	20,900	**F**	21,776	25,582	31,215	4	Divided	**F**	**F**	**F**
SR 22	West of US 98	D	11,100	C	12,726	14,910	18,175	4	Undivided	B	B	**B**
US 98	Gulf Co., East of CR 386	C	9,800	C	12,742	15,047	18,150	2	Undivided	C	**D**	**E**
US 98	CR 386 - Tyndall AFB	C	9,100	C	12,479	14,786	17,852	2	Undivided	C	**D**	**E**
US 98	Tyndall AFB - SR 22	D	35,500	D	33,738	31,857	29,592	4	Divided	**F**	**F**	**F**
US 98	SR 22 - Tram Rd	D	36,800	F	35,883	34,161	32,100	4	Divided	**F**	**F**	**F**
US 98	Tram Rd - Transmitter Rd	D	32,400	C	31,835	30,368	28,602	4	Divided	**F**	**F**	**F**
US 231	Transmitter Rd - CR 390	C	25,400	B	29,755	34,914	42,582	4	Divided	C	**F**	**F**
US 231	CR 390 - Star Ave	C	29,900	C	35,597	41,808	51,007	4	Divided	C	C	**D**
US 231	Star Ave to the east	C	28,800	B	35,647	41,960	51,234	4	Divided	C	C	**D**
Star Ave	SR 22 - Tram Rd	D	7,800	B	8,984	10,533	12,843	2	Undivided	C	C	C
Star Ave	Tram Rd - US 231	D	8,200	B	9,435	11,061	13,486	2	Undivided	C	C	D

Notes:
1. Assuming SR 22 widened to 4 lanes between US 98 (Tyndall Pkwy) to east of Star Ave.
LOS letter grades in BOLD are failing grades; in *ITALIC* represent worse than the adopted LOS for that facility or segment
Source: PBS&J calculations

Table 6-11 presents the traffic impacts of Alternative 8 or Alternative 17, if they are built, on the LOS of the same nearby facilities or segments considered in the "no-build" scenario. A few comments can be made, as follows:

- SR 22 will operate acceptably as a two-lane facility in Gulf County with either Alternative 8 or 17. In Bay County, Alternative 8 intersects SR 22 near the Gulf County line and then follows the existing SR 22 alignment. This section of SR 22 would be improved to a four-lane facility and, therefore, would operate at a LOS B, which is far better than the recommended LOS C or D. West of CR 2297 (Allanton Road), Alternative 8 turns north, and traffic volumes on SR 22 are expected to decrease until near Star Avenue. It was assumed that SR 22 will be widened to 4 lanes to keep it consistent with the "no-build" scenario assumptions. Therefore, SR 22 east of Star Avenue would operate at LOS B in all future years. This reduction of traffic would also benefit the operations of SR 22 between Star Avenue and US 98 (Tyndall Parkway), which would operate at LOS C in the design year, if the widening to four lanes occurs. If Alternative 17 is built, then the situation is very similar to Alternative 8, with SR 22 operating acceptably east and west of the Gulf Coast Parkway with the increased capacity of a four-lane facility. The quality of the service is shown at LOS B or C in all future years, which are better than the adopted LOS D for those sections of SR 22.

- As described above, SR 22 is expected to operate acceptably with four lanes with either Alternative 8 or Alternative 17 being built. This is different from the 'no-build" scenario where SR 22, between Star Avenue and US 98 would fail even with the four-lane capacity improvement.

- US 98, from east of the Tyndall AFB main entrance to west of CR 386 would operate acceptably at a LOS B in all future years under both Alternative 8 or Alternative 17,, which is better than the adopted LOS C for a two-lane facility. This is in contrast to the "no-build" scenario where this section of US 98 falls below the adopted LOS C, since it will be operating at LOS D starting in the year 2025.

- US 98 (Tyndall Parkway) from west of the Tyndall AFB main entrance to north of Tram Road, as a four-lane facility is expected to fail, starting in the year 2025. In the "no build" scenario and in all future years, US 98 at four-lane capacity is estimated to fail. The presence of either Alternative 8 or Alternative 17 is expected to delay this failure until the year 2025. Both Alternative 8 and Alternative 17 include a capacity improvement on US 98 (Tyndall Parkway) from four lanes to six lanes at the intersections of either Alternative 8 or 17 with US 98 (Tyndall Parkway) near Tram Road, starting in the year 2025.

- US 231 is currently a four-lane facility. In the "no-build" scenario, portions of US 231 will either fall below the recommended LOS C or fail between southwest of CR 390 to east of Star Ave. Depending on the conceptual design layout of the intersection at US 231 with either Alternative 8 or Alternative 17, including the corresponding re-alignments of CR 390 and CR 2321, the need for widening US 231 to six lanes might be delayed until after 2025. At a minimum, the widening of US 231 to six lanes might be delayed until the year 2025 as a result of the construction of the Gulf Coast Parkway Alternative 8 or Alternative 17.

- Star Ave. does not need additional capacity in all future years, with either Alternative 8 or Alternative 17, as is the case in the "no-build" scenario. The facility would only be widened to four lanes when the Gulf Coast Parkway utilizes existing Star Ave. right-of-way.

Table 6-11: Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: Alternative 8 and Alternative 17 Scenarios

					AADT (Background + Gulf Coast Parkway (GCP) Traffic)												
					Alternative 8						Alternative 17						
					AADT (Background + DRI Traffic)			LOS				AADT (Background + DRI Traffic)			LOS		
Roadway	Segment	Adopted LOS Standard	Year 2011 AADT	Year 2011 LOS	Future No. of Lanes	Year 2012	Year 2025	Year 2035	Year 2012	Year 2025	Year 2035	Future No. of Lanes	Year 2012	Year 2025	Year 2035	Year 2012	Year 2025	Year 2035
SR 22	West of SR 71 - Bay Co. line (Gulf Co.)	C	2,800	B	2	3,200	3,900	4,800	B	C	C	2	3,200	3,900	4,800	B	B	C
SR 22	Bay Co. Line - Sandy Creek Rd	C	3,400	B	4	10,000	12,200	14,800	B	B	B	2	3,300	3,400	4,000	B	B	B
SR 22	Sandy Creek Rd - CR 2297 (Allanton Rd.)	D	4,300	B	4	18,200	22,100	26,900	B	B	B	2	4,000	4,200	4,900	B	B	B
SR 22	CR 2297 - Star Ave	D	10,500	C	4	11,000	13,400	16,300	B	B	B	4	11,000	13,400	16,300	B	B	B
SR 22	Star Ave - US 98	D	18,500	D	4	18,200	22,100	26,900	B	B	B	4	18,200	22,100	26,900	B	B	B
SR 22	West of US 98	D	11,300	C	2	10,300	12,500	15,200	B	B	**B**	2	10,300	12,500	15,200	B	B	**B**
US 98	Gulf Co., East of CR 386	C	10,000	C	2	12,980	15,852	19,165	C	*D*	*D*	*2*	12,980	15,852	19,165	C	*D*	*D*
US 98	CR 386 – Tyndall AFB	C	9,200	C	2	5,000	6,100	7,500	B	B	B	2	5,000	6,100	7,500	B	B	B
US 98	Tyndall AFB - SR 22	D	34,600	D	4	33,000	39,000	50,500	C	D	**F**	4	33,000	39,000	50,500	C	D	**F**
US 98	SR 22 - Tram Rd	D	35,850	B	6	34,400	41,900	51,000	B	B	C	6	34,400	41,900	51,000	B	B	C
US 98	Tram Rd - Transmitter Rd	D	31,600	C	6	34,500	42,000	51,200	B	B	C	6	34,500	42,000	51,200	B	B	C
US 231	Transmitter Rd - CR 390	C	25,800	B	6	30,300	36,971	45,085	B	B	B	6	30,300	36,971	45,085	B	B	B
US 231	CR 390 - Star Ave	C	30,400	C	6	36,262	44,296	54,011	B	B	C	6	36,262	44,296	54,011	B	B	C
US 231	Star Ave to the east	C	29,300	B	6	36,262	44,296	54,011	B	B	C	6	36,262	44,296	54,011	B	B	C
Star Ave	SR 22 - Tram Rd	D	7,900	B	2	6,688	8,109	9,936	B	B	C	2	6,688	8,109	9,936	B	B	C
Star Ave	Tram Rd - US 231	D	8,300	B	4	9,814	11,943	14,543	B	B	B	4	9,814	11,943	14,543	B	B	B

Notes:
1. Assuming SR 22 widened to 4 lanes between US 98 (Tyndall Pkwy) to east of Star Ave. and that it is Urban with an Urban Typical Section
LOS letter grades in BOLD are failing grades; in *ITALIC* represent worse than the adopted LOS for that facility or segment
Source: Atkins calculations

Table 6-12 presents the results of the analysis of Alternatives 14, 15 and 19 impacts on traffic on the same facilities. This analysis was done prior to the inclusion of the Tram Road connection to US 98 (Tyndall Parkway) in these alternatives. The following points can be made:

- SR 22 as a two-lane facility would operate acceptably in Gulf County with Alternatives 14, 15 or 19. In Bay County, Alternatives 14 and 15 intersect SR 22 near the Gulf County line and either follow the SR 22 existing alignment (Alternative 14) or just cross it and continues north (Alternative 15). In both cases, it was estimated that SR 22 would continue to operate at the adopted LOS C (or D further west) or better, east and west of the Gulf Coast Parkway alternative alignment. However, closer to Star Ave. and especially between Star Ave. and US 98 (Tyndall Parkway) both Alternatives 14 and 15 require the widening of SR 22 to four lanes as in all other scenarios previously discussed. Traffic diversion to the Gulf Coast Parkway is not enough to solve the operational failure of SR 22 east of US 98 (Tyndall Parkway), even with the widening of SR 22 to four lanes, in the design year 2035, this section must also be designated as an urban area and improved with a 4-lane urban typical section. In this regard, the situation is similar to the "no-build" scenario.

- Alternative 19 crosses SR 22 further west than Alternatives 14 or 15. Similar to those alternatives, it does not divert enough traffic to provide relief to SR 22 between Star Avenue and US 98 (Tyndall Parkway), and also requires that this portion of SR 22 be designated as an urban area and improved with a 4-lane urban typical section.

- US 98, from east of the Tyndall AFB main entrance to west of CR 386 with Alternatives 14, 15, and 19 would operate at LOS B, which is better in all future years than the adopted LOS C for a two-lane facility. Again, this is in contrast to the "no-build" scenario where this section of US 98 falls below the adopted LOS C, since it will be operating at LOS D starting in the year 2025.

- US 98 (Tyndall Parkway) from west of the Tyndall AFB to north of Tram Road, as a four-lane facility is expected to fail, starting in the year 2025. In the "no build" scenario and in all future years, US 98 (Tyndall Parkway) with four-lane capacity is estimated to fail. Similar to other Gulf Coast Parkway alternatives, the presence of either Alternatives 14, 15, or 19 is expected to delay the failure of a four-lane US 98 (Tyndall Parkway) until the year 2025.

- US 231 is currently a four-lane facility. In the "no-build" scenario, portions of US 231 would either fall below the recommended LOS C or fail between southwest of CR 390 to east of Star Avenue All of the alternatives (14, 15 or 19) intersect US 231 east of Star Avenue (actually east of CR 2301) a couple of miles or more, at which point there are no operational issues on US 231, southwest or northeast, of the proposed intersection with the respective Gulf Coast Parkway alignments. These alternatives do not have an impact on US 231 operations near CR 390 or Star Avenue, which would still fail with the existing four lanes no matter which of Alternatives 14, 15, or 19 is finally built.

- Star Avenue does not need additional capacity in all future years, with either Alternatives 14, 15, or 19, as is the case in the "no-build" scenario. A two-lane Star Avenue might operate at LOS B or LOS C, which are better than the adopted LOS D for that facility.

Table 6-12: Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: Alternatives 14, 15, and 19 Scenarios

					AADT (Background + GCP Traffic)																				
						Alternative 14							Alternative 15							Alternative 19					
						AADT (Background + DRI Traffic)			LOS				AADT (Background + DRI Traffic)			LOS				AADT (Background + DRI Traffic)			LOS		
Roadway	Segment Limits	Adopted LOS Standard	Year 2011 AADT	Year 2011 LOS	Future No. of Lanes	Year 2012	Year 2025	Year 2035	Year 2012 LOS	Year 2025 LOS	Year 2035 LOS	Future No. of Lanes	Year 2012	Year 2025	Year 2035	Year 2012 LOS	Year 2025 LOS	Year 2035 LOS	Future No. of Lanes	Year 2012	Year 2025	Year 2035	Year 2012 LOS	Year 2025 LOS	Year 2035 LOS
SR 22	West of SR 71 - Bay Co. line (Gulf Co.)	C	2,800	B	2	3,200	3,900	4,800	B	C	C	2	3,200	3,900	4,800	B	C	C	2	3,200	3,900	4,800	B	B	C
SR 22	Bay Co. Line - Sandy Creek Rd	C	3,400	B	4	12,000	14,200	16,800	C	C	C	2	10,000	12,200	14,800	C	C	C	2	3,300	3,400	4,000	B	B	B
SR 22	Sandy Creek Rd - CR 2297 (Allanton Rd.)	D	4,300	B	2	16,200	20,100	24,900	C	C	D	2	16,200	20,100	24,900	C	C	D	2	4,000	4,200	4,900	B	B	B
SR 22	CR 2297 - Star Ave	D	10,500	C	4	10,000	12,400	15,300	B	B	B	4	10,000	12,400	15,300	B	B	B	4	11,000	13,400	16,300	B	B	B
SR 22	Star Ave - US 98	D	18,500	B	4	16,200	20,100	24,900	B	B	B	4	16,200	20,100	24,900	B	B	B	4	18,200	22,100	26,900	B	B	B
SR 22	West of US 98	D	11,300	C	2	9,300	11,500	14,200	B	B	B	4	9,300	11,500	14,200	B	B	B	4	10,300	12,500	15,200	B	B	B
US 98	Gulf Co., East of CR 386	C	10,000	C	2	12,980	15,852	19,165	C	*D*	*D*	2	12,980	15,852	19,165	C	*D*	*D*	*2*	12,980	15,852	19,165	C	*D*	*D*
US 98	CR 386 – Tyndall AFB	C	9,200	C	2	5,000	6,100	7,500	B	B	B	2	5,000	6,100	7,500	B	B	B	2	5,000	6,100	7,500	B	B	B
US 98	Tyndall AFB - SR 22	D	34,600	D	4	33,000	39,000	50,500	C	**F**	**F**	4	33,000	39,000	50,500	C	**F**	**F**	4	33,000	39,000	50,500	C	**F**	**F**
US 98	SR 22 - Tram Rd	D	35,850	**F**	4	34,400	41,900	51,000	C	**F**	**F**	4	34,400	41,900	51,000	C	**F**	**F**	4	34,400	41,900	51,000	C	**F**	**F**
US 98	Tram Rd - Transmitter Rd	D	31,600	C	4	34,500	42,000	51,200	C	**F**	**F**	4	34,500	42,000	51,200	C	**F**	**F**	4	34,500	42,000	51,200	C	**F**	**F**
US 231	Transmitter Rd - CR 390	C	25,800	B	4	30,300	36,971	45,085	C	*D*	**F**	4	30,300	36,971	45,085	C	*D*	**F**	4	30,300	36,971	45,085	C	*D*	**F**
US 231	CR 390 - Star Ave	C	30,400	B	4	36,262	44,296	54,011	*D*	**F**	**F**	4	36,262	44,296	54,011	*D*	**F**	**F**	4	36,262	44,296	54,011	*D*	**F**	**F**
US 231	Star Ave to the east	C	29,300	B	4	34,262	42,296	52,011	D	**F**	**F**	4	34,262	42,296	52,011	D	**F**	**F**	4	36,262	44,296	54,011	D	**F**	**F**
Star Ave	SR 22 - Tram Rd	D	7,900	C	2	5,688	7,109	8,936	B	B	B	2	5,688	7,109	8,936	B	B	B	2	5,688	7,109	8,936	B	B	B
Star Ave	Tram Rd - US 231	D	83,00	C	2	8,814	10,943	13,543	C	C	C	2	8,814	10,943	13,543	C	C	C	2	8,814	10,943	13,543	C	C	C

Notes:
1. Assuming SR 22 widened to 4 lanes between US 98 (Tyndall Pkwy) to east of Star Ave. and that it is Urban with an Urban Typical Section
LOS letter grades in BOLD are failing grades; in *ITALIC* represent worse than the adopted LOS for that facility or segment
Source: Atkins calculations

Table 6-13 provides a comparison of the performance of all the alternatives, including the No- Build Alternative, in improving mobility on the principal roadway segments in the study area. This table includes the performance of Alternatives 14, 15, and 19 with the Tram Road connection.

Based on the information presented in Table 6-13, it can be concluded that Alternatives 8 and 17 perform best in improving mobility. Under Alternatives 8 and 17 all road segments, except for the segment of US 98 in Gulf County to east of CR 386 and the segment of US 98 from Tyndall AFB to SR 22, would operate at LOS C or better. The following summarizes the road segments that would experience improvement in LOS.

All the Build Alternatives improve LOS over the No Build Alternative at the following locations:

- SR 22 from Star Avenue to US 98 in all years,
- SR 22 west of US 98 in all years,
- SR 22 from CR 2297 to Star Avenue in all years,
- US 98 from CR 386 to Tyndall AFB in all years,
- US 98 from Tyndall AFB to SR 22 in 2012, and
- US 231 from Star Avenue to east in all years.

Alternative 8 and Alternative 17 also improve the LOS over the No Build Alternative and Alternatives 14, 15, and 19 at the following locations:

- SR 22 from Sandy Creek Road to CR 2297 in all years,
- US 231 from Transmitter Road to CR 390 in all years,
- US 231 from CR 390 to Star Avenue in all years,
- US 98 from SR 22 to Tram Road in all years,
- US 98 from Tram Road to Transmitter Road in all years, and
- Star Avenue from Tram Road to US 231 in all years

Alternatives 14 and 19 improve LOS over the No Build Alternative at the following location:

- Star Avenue from SR 22 to Tram Road in all years.

Alternatives 14 and 19 improve LOS over Alternatives 8, 15, and 17 at the following location:

- Star Avenue from SR 22 to Tram Road in 2035.

Table 6-13: Summary of Gulf Coast Parkway Alternatives' LOS Effects on Existing Roads

		No Build			Alt. 8			Alt. 14			Alt. 15			Alt. 17			Alt. 19		
Roadway	Segment	2012	2025	2035	2012	2025	2035	2012	2025	2035	2012	2025	2035	2012	2025	2035	2012	2025	2035
SR 22	West of SR 71 - Bay Co. line (Gulf Co.)	B	B	C	B	C	C	B	C	C	B	C	C	B	C	C	B	C	C
SR 22	Bay Co. Line - Sandy Creek Rd	C	C	C	B	B	B	B	B	B	C	C	C	B	B	B	B	B	B
SR 22	Sandy Creek Rd - CR 2297 (Allanton Rd.)	C	C	C	B	B	B	C	C	D	C	C	D	B	B	B	B	B	C
SR 22	CR 2297 - Star Ave	C	D	**F**	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SR 22	Star Ave - US 98	**F**	**F**	**F**	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SR 22	West of US 98	C	D	**F**	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
US 98	Gulf Co., East of CR 386	C	**D**	**E**	C	*D*	*D*	C	*D*	*D*	C	*D*	*D*	C	*D*	*D*	C	*D*	*D*
US 98	CR 386 - Tyndall AFB	C	**D**	**E**	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
US 98	Tyndall AFB - SR 22	**F**	**F**	**F**	C	D	**F**	C	**F**	**F**	C	**F**	**F**	C	D	**F**	C	**F**	**F**
US 98	SR 22 - Tram Rd	**F**	**F**	**F**	B	B	C	C	**F**	**F**	C	**F**	**F**	B	B	C	C	**F**	**F**
US 98	Tram Rd - Transmitter Rd	**F**	**F**	**F**	B	B	C	C	**F**	**F**	C	**F**	**F**	B	B	C	C	**F**	**F**
US 231	Transmitter Rd - CR 390	C	**F**	**F**	B	B	B	C	*D*	**F**	C	*D*	**F**	B	B	B	C	*D*	**F**
US 231	CR 390 - Star Ave	C	C	**D**	B	B	C	*D*	**F**	**F**	*D*	**F**	**F**	B	B	C	*D*	**F**	**F**
US 231	Star Ave to the east	C	C	**D**	B	B	C	B	B	C	B	B	B	B	B	C	B	B	C
Star Ave	SR 22 - Tram Rd	C	C	C	B	B	C	B	B	B	B	B	C	B	B	C	B	B	B
Star Ave	Tram Rd - US 231	C	C	D	B	B	B	C	C	C	C	C	C	B	B	B	C	C	C

Assumes SR 22 widened to 4 lanes between US 98 (Tyndall Pkwy) to east of Star Ave.
Pink highlight are locations where the alternative performs worse than the No Build Alternative
Green highlight shows LOS D when LOS D is below the adopted standard
Yellow highlight shows LOS F
Source: PBS&J calculations

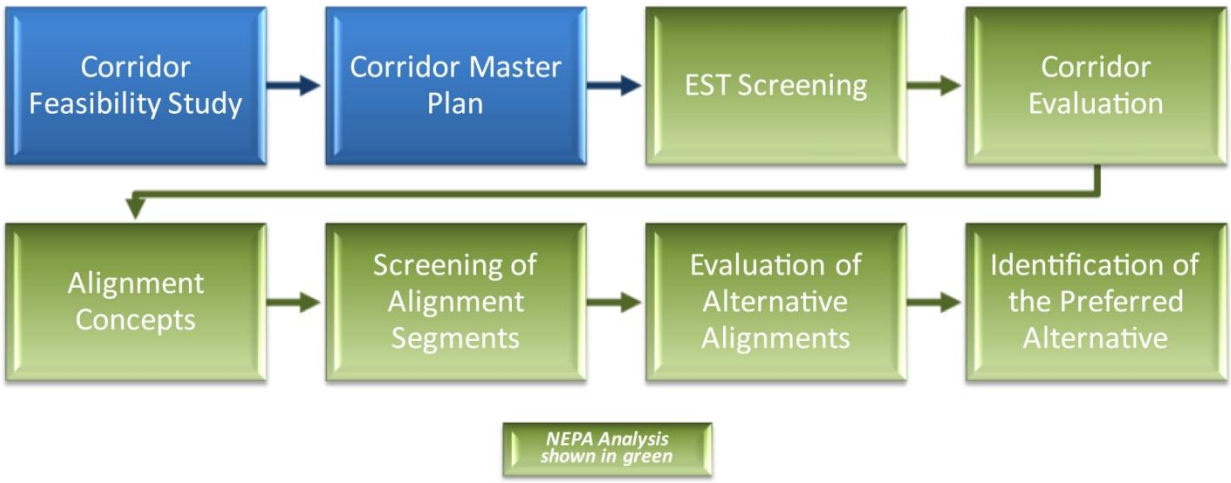
6.3 REFERCENCES

1. Florida Department of Transportation, 2004 Florida Traffic Information CD, published in 2005.
2. Florida Department of Transportation, *2009 Quality/Level of Service Handbook*.
3. Synchro plus Sim Traffic 7. Traffic signal coordination software, version 7, by Trafficware Ltd., Sugar Land TX.

SECTION 7 CORRIDOR ALTERNATIVES

The alternatives considered as part of the Gulf Coast Parkway Project Development and Environment (PD&E) Study are the result of extensive agency involvement and public outreach combined with detailed environmental and engineering analyses. **Figure 7-1** illustrates the major steps that have occurred in the development of alternatives beginning with a corridor feasibility study, through the development and evaluation of the project alternatives. The final step, the identification of the preferred alternative, will be documented in the Final Environmental Impact Statement (EIS).

Figure 7-1: Gulf Coast Parkway Alternatives Development Steps



In 2005, the project received federal funds earmarked for design. In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted resulting in the inclusion of the project in the Florida Department of Transportation (FDOT) Efficient Transportation Decision Making (ETDM) process to coordinate early agency involvement and public input in the project. As a result of this agency input, the corridor study was revisited and new corridors were identified, screened, and provided to the public. Upon completion of the corridor evaluation phase, alternative alignment concepts were developed and evaluated within the most reasonable corridors. This evaluation led to the identification of the viable alternatives to be advanced for detailed study.

7.1 GULF COAST PARKWAY PRELIMINARY STUDIES

Studies and input at key stages of the project development that culminated in the identification of viable alternatives include: The *Gulf Coast Parkway Corridor Feasibility Report*[1] (2004), the *Gulf Coast Parkway Concept Master Plan*[2] (2005), the *ETDM Programming Screen Summary Report*[3] (April 2009), the *Gulf Coast Parkway Cultural Resources Corridor Probability Assessment Report*[4] (April 2009), and the *Gulf Coast Parkway Corridors Evaluation Summary Report*[5] (May 2009). These reports are summarized in this section, but may be referred to for more detailed information. These reports are on file at FDOT District 3 in Chipley, Florida.

7.1.1 Gulf Coast Parkway Corridor Feasibility Study Report

The *Gulf Coast Parkway Corridor Feasibility Report* was prepared in 2004 for a new roadway in Bay, Gulf, and Calhoun Counties. The purpose of the new roadway was to improve mobility by providing a new link in the regional transportation network; enhance the region's economic viability through

improved freight mobility; increase the safety of the traveling public; improve hurricane and other emergency evacuation by providing an alternative and more direct evacuation route to the north; and to serve as an alternative route in the event US 98 through the Tyndall Air Force Base (AFB) Reservation should be closed to traffic.

The Corridor Feasibility Report created corridor alternatives by combining 21 half-mile wide segments that had been placed in logical paths between US 98 in Gulf County and US 231 in Bay County. The corridor segments followed existing alignments of paved and unpaved roads wherever possible but utilized new alignment when necessary (**Figure 7-2**). The corridor segments were evaluated for involvement with the social, natural, and physical environmental features in the area to identify those combinations of segments which provided corridors with the least impacts while meeting the project's purpose and need. The No-Build Alternative and five alternative corridors were identified for further study (**Figure 7-3**).

A wide range of factors was evaluated for each alternative corridor including costs, traffic service, engineering, environmental, and socioeconomic factors. Further, a cost-benefit analysis was conducted to verify the financial feasibility of each route. Although all the Build Alternatives were found to be financially feasible, there were considerable variations in their benefits. As a result, the report recommended advancing two corridors to be studied in the *Gulf Coast Parkway Concept Master Plan*. These alternatives were Corridor B and Corridor C. Corridor B was determined to be the most probable corridor for the project, because it made maximum use of existing routes, which would allow phased construction of the project, and because it greatly reduced the travel time of a detour when US 98, through the Tyndall AFB Reservation, was closed.

The construction of the second phase of the Gulf Coast Parkway might not occur for many years and development in the US 231 and State Road (SR) 22 corridors could increase substantially. This would greatly increase the costs and impacts of constructing the second phase and it was thought that a comparative reevaluation of the Corridor B alignment alternative with Corridor C alignment alternative might occur. Therefore, it was recommended to develop alignments within both corridors as part of the *Gulf Coast Parkway Concept Master Plan*.

7.1.2 Gulf Coast Parkway Concept Master Plan

The *Gulf Coast Parkway Concept Master Plan* evaluated in more detail the alternative alignments within the two corridors recommended by the *Gulf Coast Parkway Corridor Feasibility Report*. This report verified the findings of the Corridor Feasibility Report and led to a recommendation of a preferred corridor for the PD&E Study.

Figure 7-2: Corridor Segments from the Corridor Feasibility Report

Figure 7-3: Alternative Corridors from the Corridor Feasibility Report

7.2 EFFICIENT TRANSPORTATION DECISION MAKING

At the beginning of the PD&E study, after the completion of the Corridor Feasibility Report and Concept Master Plan, federal funding was obligated for the design phase. Based on the timing of the funding authorization, the project was required to be entered into FDOT's Environmental Screening Tool (EST) and evaluated through the ETDM process. The recommended corridor from the Corridor Feasibility Report was entered into the ETDM Programming Screen (as one corridor with six alternative options as shown in **Figure 7-4**).

The initial Environmental Technical Advisory Team (ETAT) review was completed on April 30, 2006 at which time several agencies identified a degree of effect of Dispute Resolution for different resource areas. A meeting was held with the ETAT members, FDOT staff, and Federal Highway Administration (FHWA) staff on October 17, 2006 to discuss the Dispute Resolution findings. During this meeting, FHWA made the decision to "re-start" the ETDM Programming Screen. The "re-start" would include:

- The six alternatives of the recommended corridor from the Corridor Feasibility Report initially reviewed in April 2006 (shown in **Figure 7-4**).
- The other four corridors from the original Corridor Feasibility Report (**Figure 7-3**).
- Any corridors the ETAT members wished to submit for consideration.

Eight additional alternative corridors (shown in **Figure 7-5**) were suggested by the ETAT members for consideration. With the six alternatives from the first programming screen review and the four original corridors from the Corridor Feasibility Study, in addition to the eight corridors identified by the ETAT created a total of 18 corridor alternatives for consideration.

The 18 corridor alternatives were compared to the criteria in the project's Purpose and Need Statement approved, January 25, 2007, by FHWA. FHWA determined that 12 of the 18 corridor alternatives met the purpose and need for the project. Prior to the start of the second ETDM Programming Screen review a justification memo detailing why 6 corridors had been eliminated was entered into the EST for the ETAT to review and comment. No comments were submitted to this memo.

On February 13, 2007 the second ETDM Programming Screen review was initiated. The 12 corridor alternatives were re-numbered as Alternative 7 thru Alternative 18 in order to distinguish them from the previous corridor Alternatives (1 thru 6) in the first (April 2006) ETDM Programming Screen review.

- Corridor A from the original Corridor Feasibility Report was re-named Corridor 7.
- The six variations of the Corridor B from the first (April 2006) Programming Screen were re-named Corridors 8 through 13.
- Corridor C from the original Corridor Feasibility Report was re-named Corridor 14.
- Corridor D from the original Corridor Feasibility Report was re-named Corridor 15.
- Corridor E was eliminated as a part of the FHWA determination for corridors that did not meet the purpose and need criteria.
- Corridors 16 through 18 were the new corridors submitted by ETAT members (Northwest Florida Water Management District {NWFWMD}, United States Environmental Protection Agency {USEPA} and United States Fish and Wildlife Service {USFWS}) and not considered in the original Corridor Feasibility Report.

Figure 7-4: Corridor with Six Options from the Initial Programming Screen Review

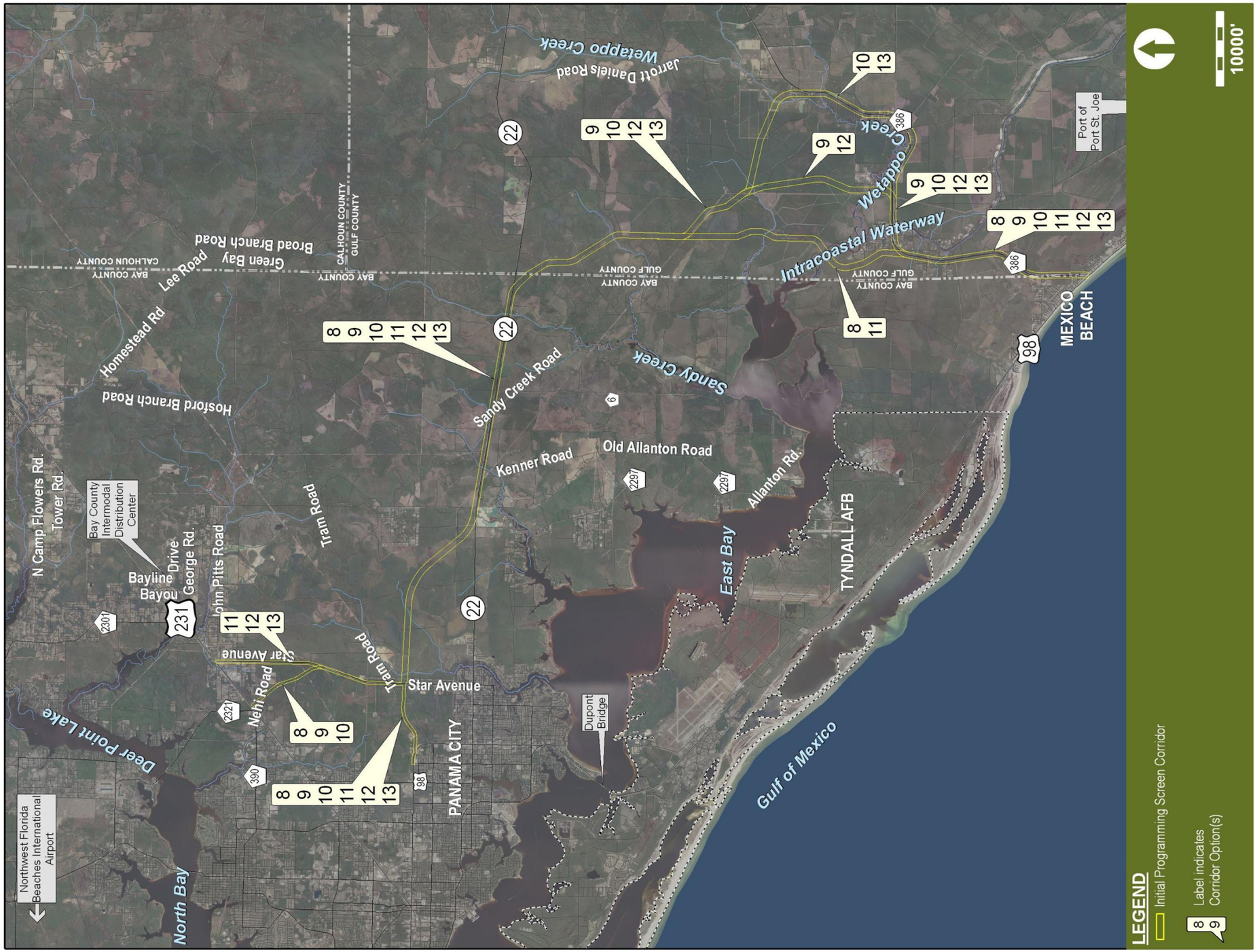


Figure 7-5: Alternative Corridors Recommended by ETAT for Second Programming Screen Review

Figure 7-6: Twelve Corridors Submitted for Second Programming Screen Review

Table 7-1 summarizes the evolution of the corridor naming.

Table 7-1: Gulf Coast Parkway Corridor Names

Project Stage	Study Team Developed Corridors										ETAT Developed Corridors		
											NWFWMD *	USEPA **	USFWS ***
Corridor Study	A	B						C	D	E	N/A	N/A	N/A
1st Programming Screen	N/A	1	2	3	4	5	6	N/A	N/A	N/A	N/A	N/A	N/A
2nd Programming Screen	7	8	9	10	11	12	13	14	15	Eliminated	16	17	18

*Northwest Florida Water Management District
** United States Environment Protection Agency
*** United States Fish and Wildlife Service

The 12 Alternative Corridors entered into ETDM for the second Programming Screen review are shown on **Figure 7-6.** Each of the 12 corridors is shown separately at a larger scale in **Appendix D**. As shown on the figures, Corridors 8 through 13 are essentially two corridors with a number of variations. These variations are in response to public and agency concerns.

At the conclusion of the ETDM review 4 resource areas received a Dispute Resolution Degree of Effect finding. These areas were wetlands, wildlife and habitat, coastal and marine, and secondary and cumulative effects. As a result of the Dispute Resolution Degree of Effect Findings Agreement Action Plans were developed by the FDOT, FHWA, and the ETAT members to outline the process for obtaining the information needed to resolve the disputes. These Agreement Action Plans can be found in **Appendix A** and a discussion of the Dispute Resolution process is provided in **Section 5.2 of the Draft EIS** under ETDM**.**

A table summarizing all of the ETAT comments from the Programming Screen Review and identifying how those comments are responded to in this and other project documents can be found in **Appendix E**.

7.3 EVALUATION OF ALTERNATIVE CORRIDORS

A comparative evaluation of the 12 Alternative Corridors was performed to identify those corridors most reasonable to carry forward for more detailed study during the PD&E study. For comparative evaluation purposes, the build corridors were 800-feet wide in the rural areas and 400-feet wide in the urban areas.

A *Corridor Alternatives Evaluation Summary Report* (CAESR) was prepared to document the development and evaluation of these twelve corridors in detail. This report (available at FDOT District 3 and on the project website) discusses the use of land suitability mapping to develop corridor alignments that minimized involvement with sensitive resources. The report then describes in detail the procedure used for evaluating the corridors. This procedure was designed to evaluate each corridor alternative's performance (ranking) across a number of criteria characterizing three evaluation categories (purpose and need, natural and social environmental involvement, and cost). The corridors' rankings were then scored for each category and overall corridor rankings were calculated to determine which corridors performed the best..

A corridor alternatives' public meeting was also held at this time (discussed further in Section 8) and a public survey was distributed to obtain feedback on the corridors. Based on the information obtained from the public, the overall corridor rankings, and other considerations (such as the locations and unique purposes served by different corridors) were then used to make a determination of which corridors were the most reasonable to be carried forward for further analysis.

A draft version of the *CAESR* was approved by the FHWA on March 19, 2009 for ETAT review and comments. The ETAT review of the CAESR was completed on April 29 and the report was revised to include an appendix that summarized the ETAT comments and responses to those comments. **Two recommendations made by the ETAT were incorporated into the results of the CAESR which added to the corridor alternatives identified for further analysis**:

- An additional alternative designated Alternative 19 was included in the alternatives recommended for further study. Alternative 19 is a hybrid of the southern half of Alternative 17 and the northern half of Alternative 14.

- The southern half of Corridor 18, up to SR 22, was carried forth as an optional location for the development of alternative alignments within Corridors 8, 14, and 15.

After the revisions to the CAESR were made and the findings of the report updated, the Final CAESR and its recommendations for corridors to be carried forward for further analysis was approved by FHWA on June 15, 2009. For further detail on the corridor evaluation methodology, findings, results, and review comments see the Gulf Coast Parkway *Final Corridor Alternatives Evaluation Summary Report*.

7.3.1 Corridors Identified For Further Study

The *Final CAESR* documented the development and evaluation of alternative corridors and recommended that Corridors 8, 14, 15, and 17 be advanced for the development of alignment alternatives within each of them. Based on ETAT comment an additional alternative alignment, (Alternative 19) was to be designed which connected the south half of Alternative 17 to the north half of Alternative 14.

These recommendations serve as the basis for the development of Alignment Alternatives in the PD&E Study and are illustrated on **Figures7-7A through 7-7F**. A description of these corridors as well as Alternative 19 follows.

Figure 7-7A: Gulf Coast Parkway Corridor Alternatives Identified for Further Analysis

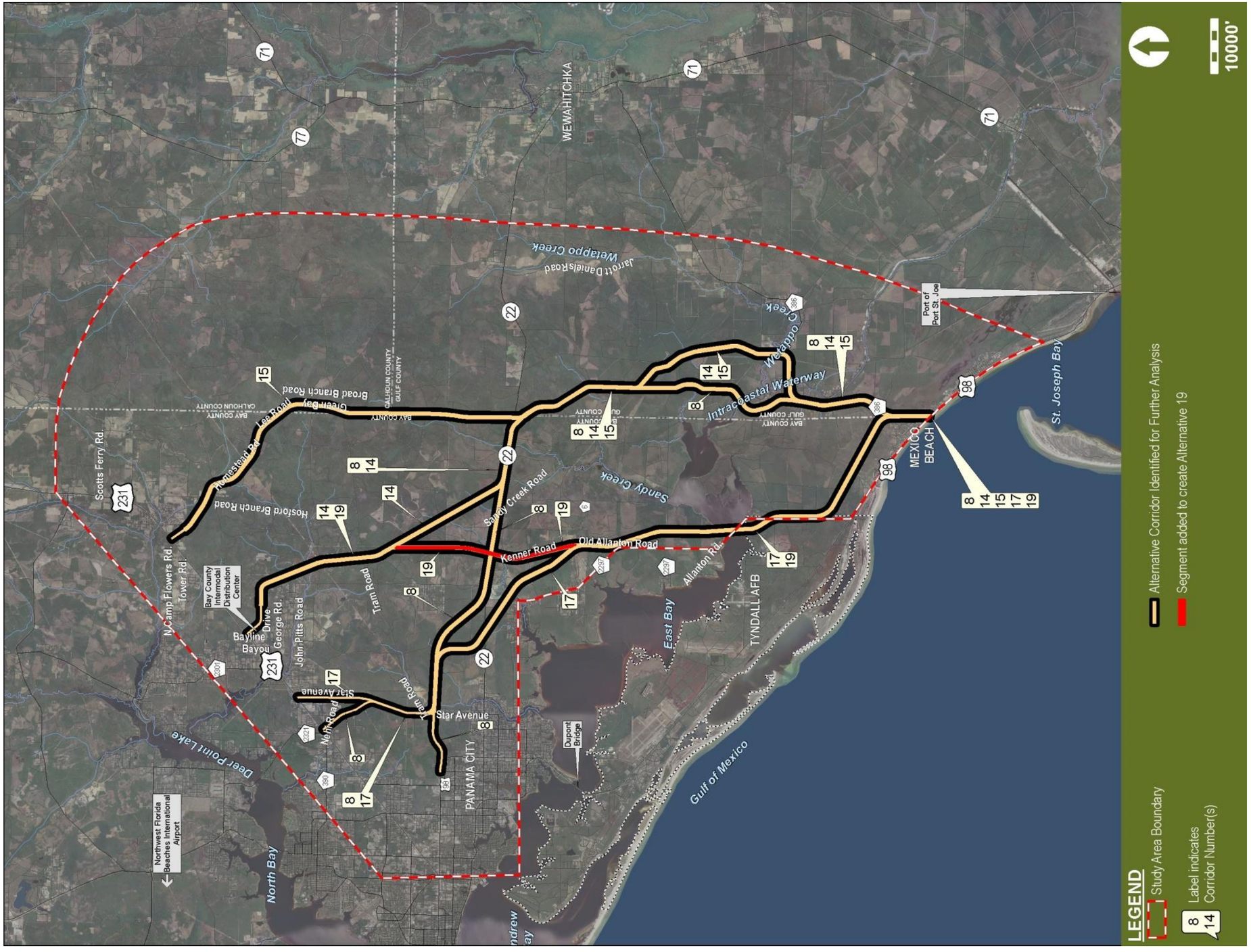


Figure 7-7B: Gulf Coast Parkway Corridor Alternative 8

Figure 7-7C: Gulf Coast Parkway Corridor Alternative 14

Figure 7-7D: Gulf Coast Parkway Corridor Alternative 15

Figure 7-7E: Gulf Coast Parkway Corridor Alternative 17

Figure 7-7F: Gulf Coast Parkway Alternative 19

Corridor 8 begins at the US 98/County Road (CR) 386 intersection and travels north along existing CR 386 for approximately 5.3 miles. From CR 386, it travels north on new alignment, bridging over Wetappo Creek and the Intracoastal Waterway (ICWW) to SR 22 approximately 10.4 miles. From SR 22, it travels west along the existing roadway for an approximate distance of 5.6 miles, then utilizing new alignment it travels northwest, and then west to CR 2315 (Star Avenue) near the CR 2315 (Star Avenue)/Tram Road intersection approximately 5.0 miles. At this location, the corridor splits and provides two routes to different termini. From CR 2315 (Star Avenue), the corridor heads west along Tram Road to its intersection with US 98 (Tyndall Parkway) in Springfield approximately 2.1 miles. Alternately, the corridor follows existing CR 2315 (Star Avenue) north for approximately 2.1 miles where it turns west, traveling along unpaved Nehi Road to US 231 approximately 2.2 miles. The Corridor 8 length is 32.7 miles.

Corridor 14 begins at the US 98/CR 386 intersection and follows existing CR 386 for approximately 6.5 miles. The corridor turns north (and slightly northwest) and continues on new alignment to SR 22, bridging over Wetappo Creek approximately 10.7 miles. At SR 22, the corridor follows existing SR 22 west for approximately 2.0 miles where it turns northwest and, using new alignment, continues approximately 10.9 miles to US 231 near Miller Road. The Corridor 14 length is 30.1 miles.

Corridor 15 begins at the US 98/CR 386 intersection and follows existing CR 386 for approximately 6.5 miles. The corridor turns north (and slightly northwest) and continues on new alignment to SR 22, bridging over Wetappo Creek approximately 10.7 miles. From SR 22, Corridor 15 continues north on new alignment to Homestead Road approximately 6.1 miles. Corridor 15 then follows Homestead Road in a northwest direction 6.3 miles to Stone Road. From Stone Road, the corridor continues northwest on new alignment for approximately 2.1 miles to US 231 near the US 231/Campflowers Road intersection. The Corridor 15 length is 31.7 miles.

Corridor 17 begins at the US 98/CR 386 intersection and travels north along existing CR 386 for approximately 1.6 miles. At this point, Corridor 17 departs CR 386 and, using mostly new alignment, travels northwest for approximately 4.2 miles to approach the eastern boundary of Tyndall AFB. At the Tyndall AFB boundary, the corridor turns north and continues on new alignment to SR 22, bridging East Bay; a distance of 13.6 miles. At SR 22, Corridor 17 turns west briefly before turning back to the northwest where it follows new alignment to CR 2315 (Star Avenue), approximately 3.6 miles north of SR 22. It then follows CR 2315 (Star Avenue) north to US 231. The Corridor 17 length is 27.9 miles.

Alternative 19 begins at the US 98/CR 386 intersection and travels north along existing CR 386 for approximately 1.6 miles. At this point, Corridor 17 departs CR 386 and, using mostly new alignment, travels northwest for approximately 4.2 miles to approach the eastern boundary of Tyndall AFB. At the Tyndall AFB boundary, the corridor turns north and continues on new alignment to SR 22, bridging East Bay; a distance of 13.6 miles. At SR 22 Alternative 19 continues north using new alignment approximately 10.9 miles to US 231 near Miller Road. The Alternative 19 length is 28.5 miles long.

7.4 REFERENCES

1. PBS&J, *Gulf Coast Parkway Corridor Feasibility Report*, 2004.
2. PBS&J, *Gulf Coast Parkway Concept Master Plan*, 2005.
3. Florida Department of Transportation, *ETDM Programming Screen Summary Report*, April 2009.
4. PBS&J, *Gulf Coast Parkway Cultural Resources Corridor Probability Assessment Report*, April 2009.
5. PBS&J, *Corridor Alternatives Evaluation Summary Report*, May 2009.

SECTION 8 ALTERNATIVE ALIGNMENT ANALYSIS

It is planned that the Gulf Coast Parkway will meet Strategic Intermodal System (SIS) and Florida Intrastate Highway System (FIHS) standards. As such, the proposed roadway must meet certain design and operational criteria as established by the Florida Legislature. The avoidance and minimization of natural and social resources is the primary objective in the development and evaluation of the alignment alternatives. The focus of the alignment analysis is to determine the best alignment, typical section, and other major design features to use within the recommended corridors and how to best avoid and minimize impacts. The alignments are then comparatively evaluated with regards to needs, criteria, costs, and impacts. In addition to build alternatives, it is appropriate to consider no build alternatives; therefore, discussions of No Project and Transportation System Management (TSM) alternatives are included below.

8.1 NO BUILD ALTERNATIVE

The No-Build Alternative would simply leave the existing roadway network in its current configuration. No capacity, intersection, pedestrian, bicycle, or safety improvements would be implemented within the corridor.

The No-Build Alternative has a number of positive attributes. No expenditure of public funds for design, right-of-way acquisition, or construction would be required. Traffic would not be disrupted due to construction, thus avoiding inconveniences to local businesses and residences. There would be no impacts to wetlands or threatened or endangered species. With the No-Build Alternative, there is no risk of contamination. No costs would be incurred due to utility relocation. There would be no direct or indirect impacts to the socioeconomic characteristics, community cohesion, or system linkage of the area.

However, the No-Build Alternative option fails to fulfill the project‟s purpose and need, or meet any of the Bay or Gulf County Comprehensive and Long Range Transportation Plans (LRTP). The lack of a new roadway would not:

- Help reduce travel time for residents from southeast Bay and coastal Gulf Counties to employment centers in Panama City.
- Provide a more direct route between US 98 in Gulf County and freight transfer facilities on US 231 in Bay County.
- Improve access to Enterprise Zones in Gulf County.
- Provide a direct route for tourists traveling US 231 to reach vacation and recreation areas in south Gulf County.
- Provide a more direct route from south Gulf County to the new Northwest Florida Beaches International Airport (NWFBIA).
- Help ease traffic congestion on the surrounding roadway network, including US 98 (Tyndall Parkway) through Bay County.
- Provide an alternative route to US 98 (Tyndall Parkway) in Bay County to US 98 in Gulf County that does not travel through Tyndall Air Force Base (AFB).
- Provide an alternative emergency and hurricane evacuation route.

The No-Build Alternative is also inconsistent with the plans and goals of the Bay County Transportation Planning Organization (TPO). It fails to comply with the LRTP as established by the TPO.

However, the No-Build Alternative will remain a viable alternative throughout the entire length of the study along with the Build Alternatives.

8.2 TRANSPORTATION SYSTEM MANAGEMENT ALTERNATIVES

TSM alternatives include those activities that maximize the efficiency of the existing system. Possible options include ride-sharing, fringe parking, the addition of turn lanes, traffic signal timing optimization, and access management measures. While TSM options will be incorporated into the proposed project to the greatest extent possible, TSM improvements alone would provide little to no contributions to meeting the project‟s purpose and need.

Much like the No-Build Alternative, the TSM alternative fails to fulfill the needs and goals of the Bay and Gulf County plans. For all of these reasons, no TSM alternative was considered as a reasonable solution to alleviate the existing and expected deficiencies within the Gulf Coast Parkway corridor.

8.3 MULTI-MODAL ALTERNATIVES

Multi-modal solutions to substandard roadways are generally only effective within highly urbanized or constrained corridors. Specific examples of multi-modal alternatives are mass transit systems, such as bus or rail options.

Multi-modal options usually serve to move people and since the project study area is mostly rural, there is insufficient population to support multi-modal facilities. Further, multi-modal alternatives do not address the need to improve the economic climate within the study area. Nor are multi-modal facilities consistent with the needs and goals of the Bay County *2035 LRTP* and the Bay and Gulf County *Comprehensive Plans*. For all of these reasons, multi-modal alternative was not considered as a reasonable solution to alleviate the existing and expected deficiencies within the Gulf Coast Parkway corridor.

8.4 BUILD ALTERNATIVES

8.4.1 Typical Sections

This section of the report describes and presents graphically the proposed typical sections and required right-of-way for this Project Development and Environment (PD&E) Study. Traffic projections for the Design Year 2035 indicate the need for an ultimate four-lane roadway section. Also, Florida Department of Transportation (FDOT) policy guidelines require existing roadways identified as an FIHS facility to be brought up to meet current FDOT standards. As a result of the traffic projections and FDOT guidelines, a four-lane typical section was recommended for the design year. However, since there are certain segments of the proposed route that are not likely to require a four-lane typical section at the time of the segment‟s construction, interim typical sections have also been developed. Right-of-way acquisition would be for the four lane typical section, but the interim typical section would be offset in the right-of-way to allow for the future widening to the four-lane ultimate configuration.

The proposed roadway and bridge typical sections for Gulf Coast Parkway are described in the following sections. The typical section package is located in **Appendix F**.

<u>Controlled Access, Rural Arterial Roadway</u>

The proposed typical section shown in **Figure 8-1** is for roadway segments within the rural areas. The ultimate typical section is a four-lane divided roadway with a 64-foot depressed grass median within a

250 foot right-of-way. The typical section design and right-of-way width is sufficient to accommodate widening to a six-lane facility if, and when, traffic demand warrants.

The ultimate rural typical section would provide two 12-foot travel lanes with eight-foot inside shoulders of which two-foot is paved, and 12-foot outside shoulders of which five-foot is paved, in each direction. This typical section also contains open drainage ditches that parallel both sides of the roadway. A two-way 12-foot shared use path is provided along the left side of the roadway, separated from the road by an open drainage ditch. The proposed design speed for this typical section is 65 Miles per Hour (MPH).

Controlled Access, High-Speed Urban Arterial Criteria

The proposed typical section illustrated in **Figure 8-2** is for roadway segments located in urbanized areas. The ultimate typical section is a four-lane divided high-speed urban roadway with a 54-foot raised median, inclusive of four-foot median shoulders, within a 160-foot right-of-way. The typical section design and proposed right-of-way width are sufficient to accommodate widening to a six-lane facility if, and when, traffic demand warrants.

The ultimate urban arterial typical section would provide two 12-foot travel lanes and a 6.5-foot shoulder in each direction. Five-foot sidewalks are provided along both sides of the roadway, separated from the curb by a grass buffer strip. The proposed design speed for this typical section is 50 MPH. Additional right-of-way will be required for stormwater management.

Bridge Typical Section for Rural Roadway

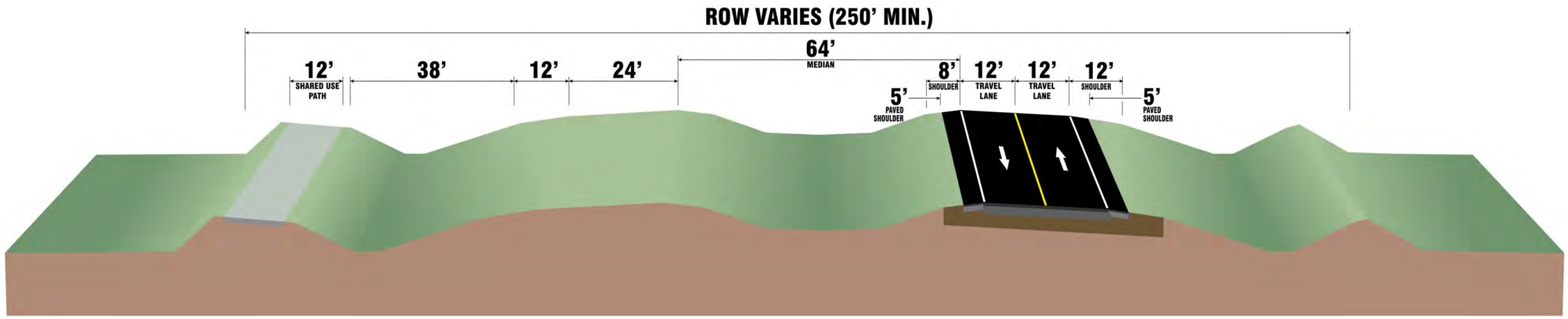
The proposed ultimate bridge typical section for the rural roadway is illustrated in **Figure 8-3.** It would provide twin two-lane bridges with 48 feet -11 inches separation between bridges. These bridges contain 40 feet clear roadway width with two 12-foot travel lanes, a six-foot inside shoulder and a 10-foot outside shoulder in each direction. The left bridge also contains a 12-foot shared use path, separated from the roadway with a bridge traffic railing.

Bridge Typical Section for Urban Roadway

The proposed ultimate bridge typical section for the urban roadway is shown in **Figure 8-4.** It would provide twin two-lane bridges with 38 feet -11 inches separation between bridges. These bridges contain 40 feet clear roadway width with two 12-foot travel lanes, a six-foot inside shoulder and a 10-foot outside shoulder in each direction. Five-foot sidewalks are provided along both sides of the bridges, separated from the roadway by a bridge traffic railing.

Figure 8-1: Proposed Controlled Access Rural Arterial Typical Sections

Interim Rural Typical



Ultimate Rural Typical

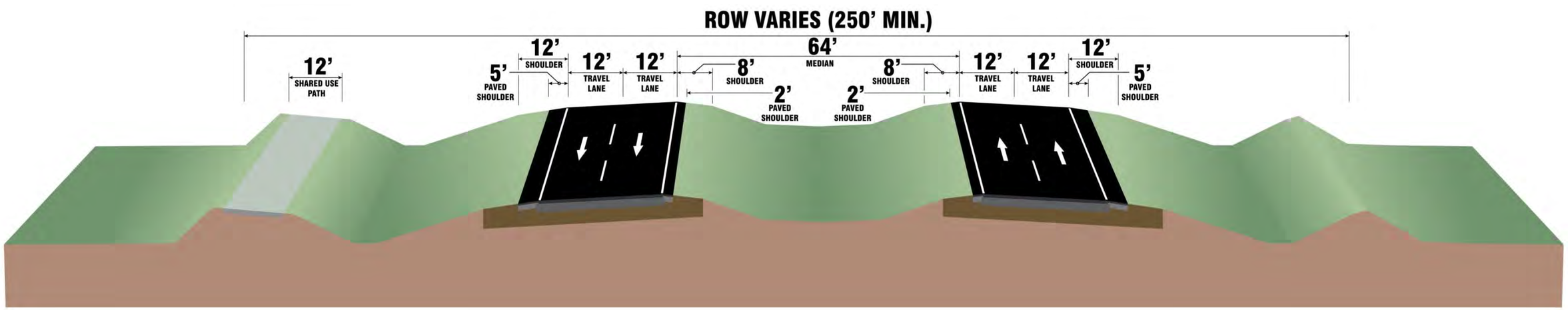
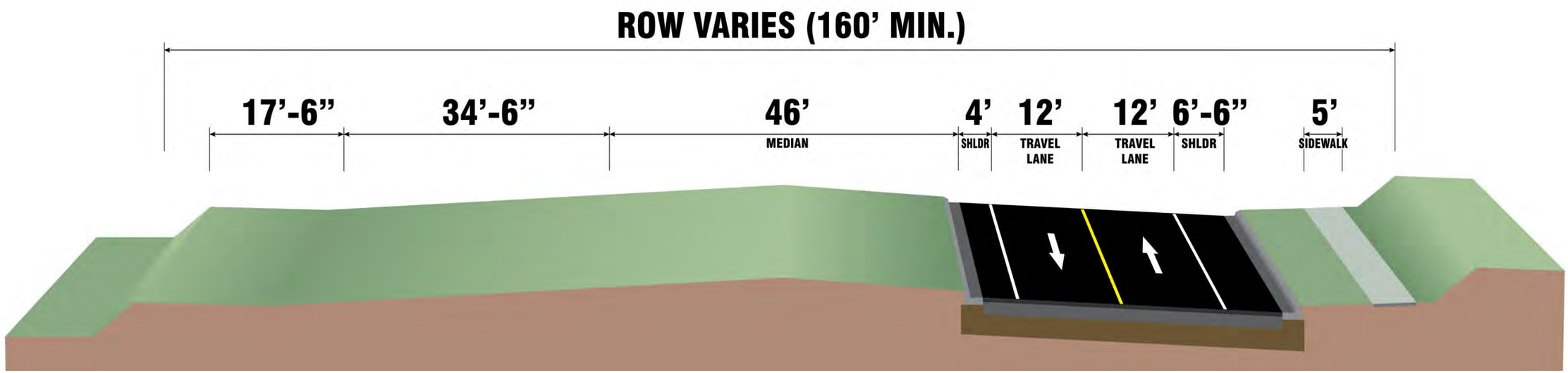


Figure 8-2: Proposed Controlled Access High Speed Urban Arterial Typical Section

Interim Urban Typical



Ultimate Urban Typical

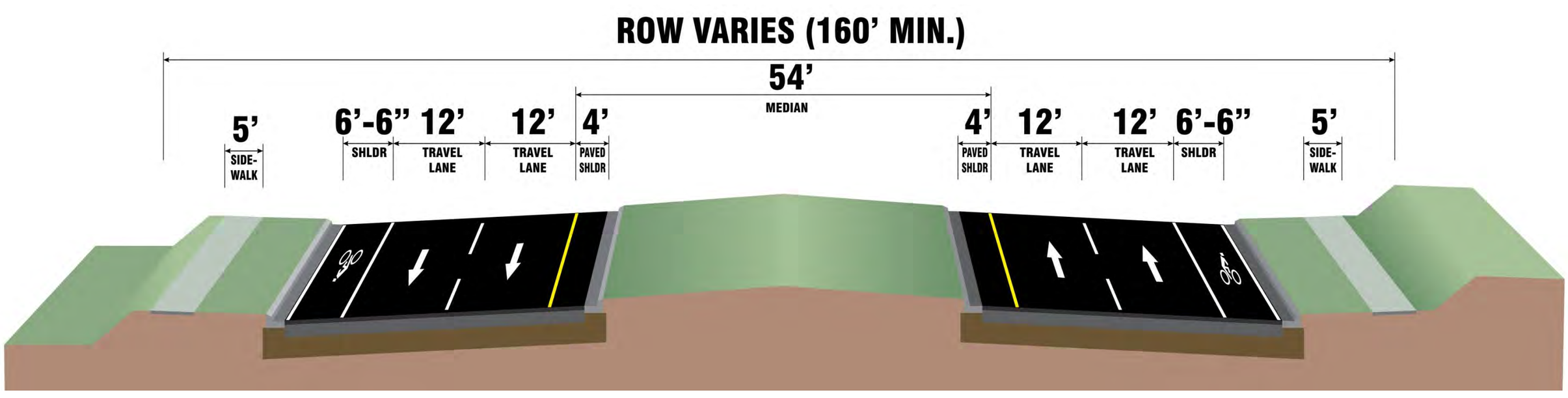
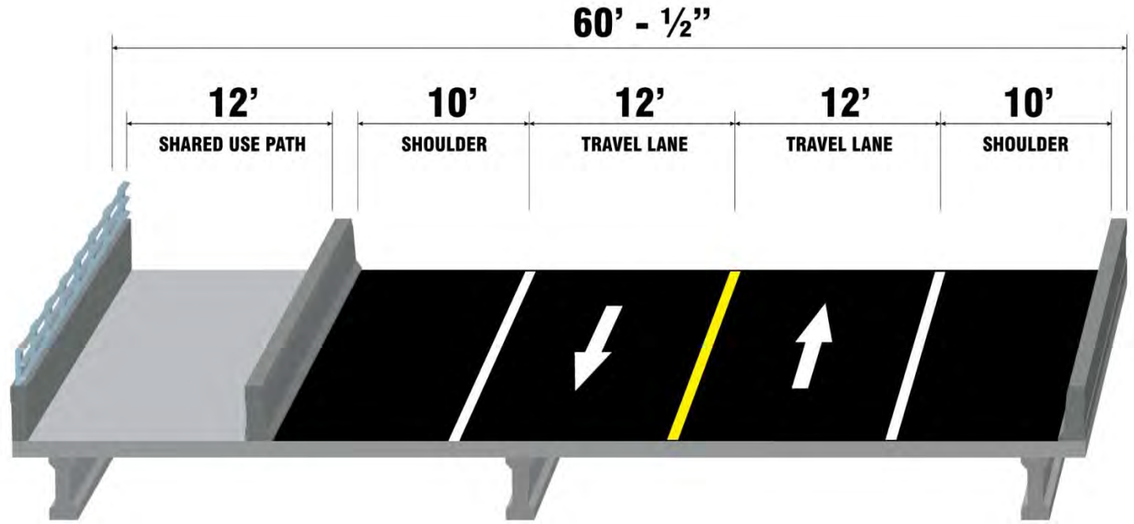


Figure 8-3: Proposed Rural Bridge Typical Sections

Interim Rural Bridge Typical



Ultimate Rural Bridge Typical

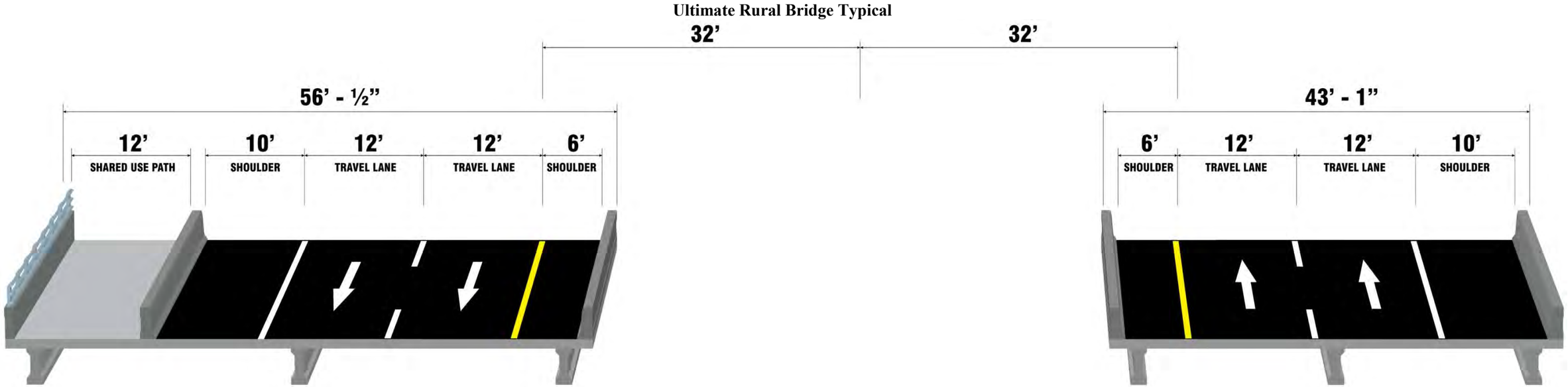
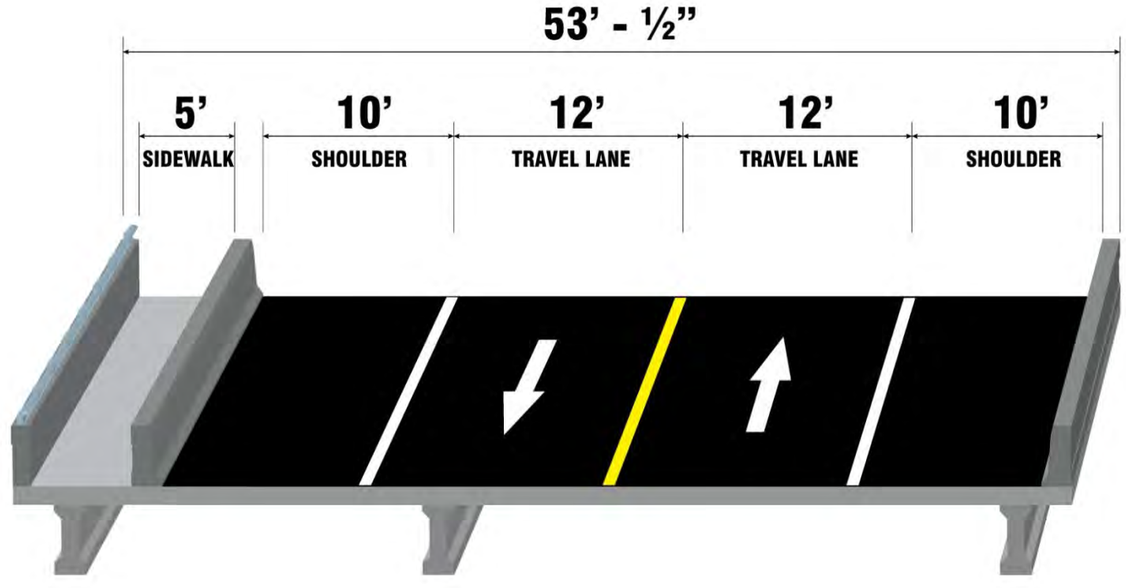
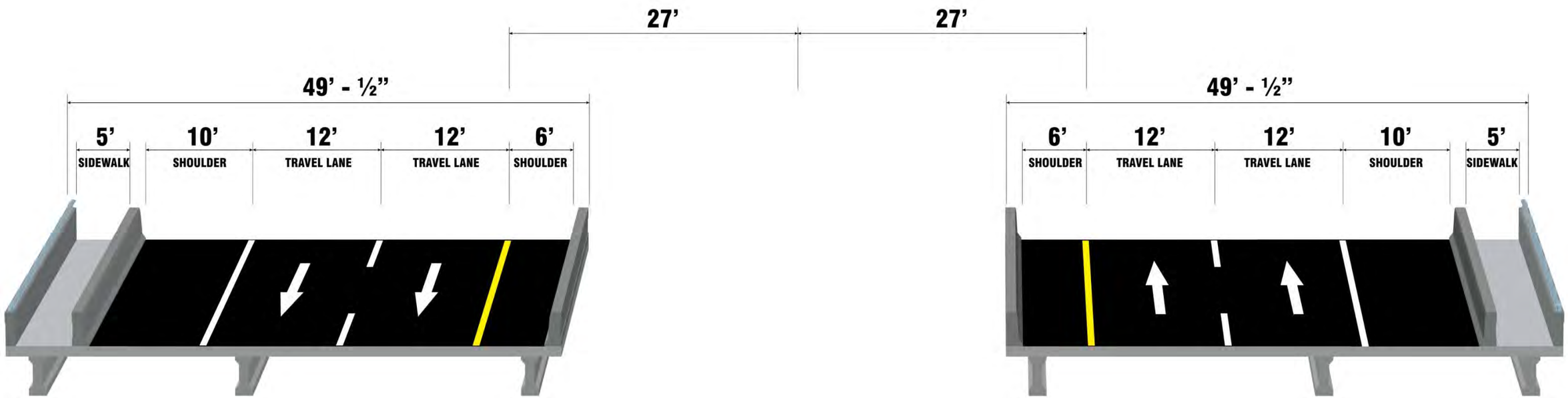


Figure 8-4: Proposed Urban Bridge Typical Sections

Interim Urban Bridge Typical



Ultimate Urban Bridge Typical



8.4.2 Development of Alternative Alignments

An alignment alternative was developed within each of the five corridors selected for detailed analysis (Section 7 of this report). The design of alignment alternatives was based on the projected traffic demand and the engineering criteria presented in Section 5 of this report. The development and evaluation of alternatives is described in the Section 2 of the Environmental Impact Statement (EIS).

8.4.2.1 Alternative Alignment Segments

The development of alternative alignments was an iterative process beginning with the development of conceptual alignments utilizing the aforementioned engineering criteria and the previously obtained desktop review of the study area"s resources. The conceptual alignments were then field surveyed to determine involvement with sensitive resources not noted in the desktop review. Based on the field analysis, the alignments were modified to avoid and/or minimize impacts to sensitive resources. As a result, in some cases, the modified alignments fell outside of the original alternative corridor boundaries.

An alternative alignment was developed within each of the recommended corridors. Because of the significant overlap between the five alternative corridors, and because of the presence of several minor deviations between them, the alignments were broken down into smaller segments for comparative analysis. This allowed for the comparative evaluation of similar segments with the goal of identifying those segments having the least impacts. Those segments having the least impacts were selected for inclusion in the alternative alignment.

Across the five alternative alignments, a total of 42 segments (**Figure 8-5**) were identified, though several of these segments are small and exist only to accommodate turning movements in the alignments. For the sake of simplicity, these smaller segments were analyzed as a part of larger segments rather than individually.

There are also some segments that were not evaluated. These segments were initially designed to accommodate the possibility that the through movement of the Gulf Coast Parkway would be directly to US 231. However, the traffic analysis completed for this project determined that the through movement would be to US 98 (and not to US 231), since the majority of the trip destinations are to Panama City via US 98 (Tyndall Parkway). Therefore, these segments were designated UNUSED and are no longer considered for further evaluation.

Table 8-1 provides a description of each of the segments and identifies which of the alternative alignment(s) utilize the segment. All segments are assumed to use a rural typical section unless otherwise noted in the description.

Figure 8-5: Gulf Coast Parkway Alternative Alignment Segments

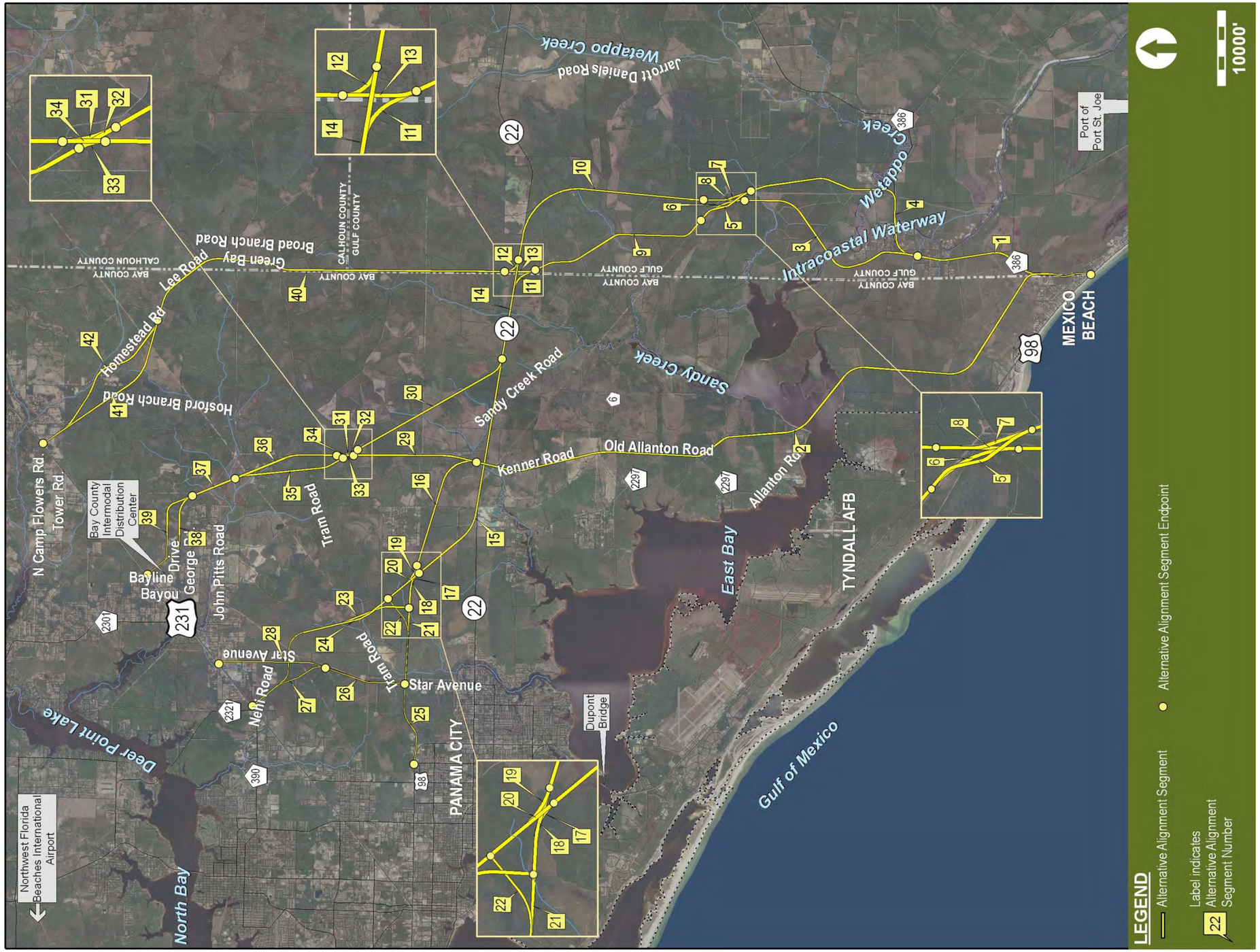


Table 8-1: Description of Gulf Coast Parkway Alternative Alignment Segments

Segment	Description	Part of Alternatives
1	Begins at US 98 and County Road (CR) 386 and heads north mostly along existing CR 386 utilizing the urban typical section up to North 15th Street. From there, it transitions to a rural typical section and continues north along existing CR 386 for approximately 3 miles.	8, 14, 15
2	Begins at US 98 and CR 386 and heads north mostly along existing CR 386 utilizing the urban typical section up to North 15th Street. From there, it transitions to a rural typical section and continues north along existing CR 386 for approximately 0.5 mile and then veers on new alignment to the northwest. It turns to the north for approximately 2.5 miles and then bridges over East Bay. The segment comes back down on Allanton Point and then follows northerly mostly along existing Allanton/Old Allanton Road until it reaches State Road (SR) 22.	17, 19
3	Begins at the end of Segment 1. Heads north on new alignment and bridges over Wetappo Creek. Heads northeast and then north on new alignment for approximately 3.0 miles. Segments 3 and 4 will be directly compared to one another.	8, 14, 15
4	Begins at the end of Segment 1. Continues east along existing CR 386 over the Overstreet Bridge and turns north on new alignment, bridging over Wetappo creek. Continues north on new alignment for approximately 2.75 miles. Segments 3 and 4 will be directly compared to one another.	8, 14, 15
5	Part of Segment 9. Represents the turning movement that would be necessary to connect Segment 4 to Segment 9.	8, 14, 15
6	Part of Segment 9. Represents the turning movement that would be necessary to connect Segment 3 to Segment 9.	8, 14, 15
7	Part of Segment 10. Represents the turning movement that would be necessary to connect Segment 4 to Segment 10.	8, 14, 15
8	Part of Segment 10. Represents the turning movement that would be necessary to connect Segment 3 to Segment 10.	8, 14, 15
9	Begins at the end of Segments 3/4. Heads northwest on new alignment for approximately 6.5 miles until it comes to an intersection with existing SR 22. Segments 9 and 10 will be directly compared to one another.	8, 14, 15
10	Begins at the end of Segments 3/4. Heads north and then turns to the west on new alignment for total distance of approximately 5.5 miles until it comes to an intersection with existing SR 22. Segments 9 and 10 will be directly compared to one another.	8, 14, 15
11	Begins at the end of Segment 9. Represents the turning movement that would be necessary to connect Segment 9 to existing SR 22 and then travels west along SR 22 for approximately 2.0 miles to connect with Segment 15.	8, 14
12	Part of Segment 10. Represents the turning movement that would be necessary to connect Segment 10 to Segment 40.	15
13	Part of Segment 9. Represents the turning movement that would be necessary to connect Segment 9 to Segment 40.	15
14	Begins at the end of Segment 10. Travels west along existing SR 22 for approximately 2.5 miles to connect with Segments 15/30.	8, 14, 15
15	Begins at the end of Segments 11/14. Travels west along existing SR 22 for approximately 4.0 miles and then turns northwest and then west on new alignment for a distance of 3.0 miles.	8, 14, 15
16	Begins at the end of Segment 2. Travels north then west on new alignment for approximately 3.3 miles.	17, 19
17	Begins at the end of Segment 15. New alignment that represents the turning movement necessary to connect Segment 15 to Segment 21.	8, 14, 15
18	Begins at the end of Segment 16. New alignment that represents the turning movement necessary to connect Segment 16 to Segment 21.	17, 19
19	UNUSED Segment. Represented the turning movements necessary to make the thru traffic of the Gulf Coast Parkway to go to US 231 instead of US 98.	N/A
20	UNUSED Segment. Represented the turning movements necessary to make the thru traffic of the Gulf Coast Parkway to go to US 231 instead of US 98.	N/A
21	Begins at the end of Segments 17/18. Travels west on new alignment for approximately 2.0 miles to connect at the intersection with Star Avenue about 0.3 mile south of Tram Road.	8, 14, 15, 17, 19
22	UNUSED Segment. Represented the turning movements necessary to make the thru traffic of the Gulf Coast Parkway to go to US 231 instead of US 98.	N/A
23	UNUSED Segment. Represented the turning movements necessary to make the thru traffic of the Gulf Coast Parkway to go to US 231 instead of US 98.	N/A
24	UNUSED Segment. Represented the turning movements necessary to make the thru traffic of the Gulf Coast Parkway to go to US 231 instead of US 98.	N/A
25	Begins at the end of Segment 21 and uses an urban typical section. Travels west on new alignment for approximately 0.7 mile until it meets existing Tram Road. Follows along existing Tram Road for	8, 14, 15, 17, 19

Segment	Description	Part of Alternatives
	approximately 0.5 mile and then turns to the west on new alignment to create a new intersection with US 98 (Tyndall Parkway).	
26	Begins at the end of Segment 21 and the beginning of Segment 25, and uses an urban typical section. Travels north along existing Star Avenue until the intersection with Nehi Road, approximately 2.2 miles.	8, 17
27	Begins at the end of Segment 26 and uses an urban typical section. Follows mostly along Nehi Road to the northwest from its southern intersection with Star Avenue to a new intersection with US 231. Segments 27 and 28 will be directly compared to one another.	8, 17
28	Begins at the end of Segment 26 and uses an urban typical section. Continues north along existing Star Avenue until its intersection with US 231. Segments 27 and 28 will be directly compared to one another.	8, 17
29	Begins at the end of Segment 2. Travels north on new alignment for approximately 3.2 miles.	19
30	Begins at the end of Segments 11/14. Leaves existing SR 22 and travels northwest on new alignment for approximately 4.5 miles.	14
31	Part of Segment 36. Represents the turning movement that would be necessary to connect Segment 30 to Segment 36.	14
32	Part of Segment 35. Represents the turning movement that would be necessary to connect Segment 30 to Segment 35.	14
33	Part of Segment 35. Represents the turning movement that would be necessary to connect Segment 29 to Segment 35.	19
34	Part of Segment 36. Represents the turning movement that would be necessary to connect Segment 29 to Segment 36.	19
35	Begins at the end of Segments 29/30. Travels northwest then north on new alignment for approximately 3.0 miles. Segments 35 and 36 will be directly compared to one another.	14, 19
36	Begins at the end of Segments 29/30. Travels north then northwest on new alignment for approximately 3.0 miles. Segments 35 and 36 will be directly compared to one another.	14, 19
37	Begins at the end of Segments 35/36. Travels northwest on new alignment for approximately 1.2 miles.	14, 19
38	Begins at the end of Segment 37 and partly uses an urban typical section. Travels west on new alignment, just to the south of the Port of Panama City Intermodal Distribution Center (IDC)Development Plan and Conservation Boundary, then to the northwest to intersect with the planned entrance roadway for the IDC which intersects with US 231. Segments 38 and 39 will be directly compared to one another.	14, 19
39	Begins at the end of Segment 37 and partly uses an urban typical section. Travels northwest and then west on new alignment, traveling through the Port of Panama City IDC Development Plan and Conservation Boundary, then to the northwest to intersect with the planned entrance roadway for the IDC which intersects with US 231. Segments 38 and 39 will be directly compared to one another.	14, 19
40	Begins at the end of Segments 9/10. Travels north and then northwest on new alignment for approximately 9.75 miles.	15
41	Begins at the end of Segment 40 and partly uses an urban typical section. Travels northwest on new alignment for approximately 4.5 miles until it comes to an intersection with US 231 near Campflowers Road.	15
42	Begins at the end of Segment 40 and partly uses an urban typical section. Travels northwest on new alignment for approximately 4.5 miles until it comes to an intersection with US 231 near Campflowers Road.	15

Note: Highlighted segments were eliminated due to all alternatives utilizing north and west alignments.

Table 8-2 identifies the segments comprising each alternative alignment. From this table it can be seen that several of the alternative alignments share the same segments. Segments shown in bold and put within parentheses have been directly compared against each other. The alternative alignments that are ultimately considered for the build alternatives will be comprised of only one of each of these [directly compared] segments; the other segment will be eliminated.

Table 8-2: Gulf Coast Parkway Alternatives by Alignment Segments

Alternative	Segments
8	1, (**3** or **4**), (**9** or **10**), 15, 17, 21, 25, 26, (**27** or **28**)
14	1, (**3** or **4**), (**9** or **10**), 15, 17, 21, 25, 30, (**35** or **36**), 37, (**38** or **39**)
15	1, (**3** or **4**), (**9** or **10**), 11, 15, 17,21, 25, 40, (**41** or **42**)
17	2, 16, 18, 21, 25, 26, (**27** or **28**)
19	2, 16, 18, 21, 25, 29, (**35** or **36**), 37, (**38** or **39**)

8.4.2.2 Identification of Reasonable Alternatives

The methodology for evaluating the alternative alignment segments included:

- The use of field verified Geographic Information System (GIS) data for social, cultural, and natural impacts
- Cost estimations
- Summary of public, local government, non-governmental organizations, and agency comments.

The ability of the segment to best contribute to the project‟s purpose and need, as well as the ability to avoid and/or minimize impacts was given primary consideration when directly comparing the segments to one another. Comments received from the public, local governments, non-governmental agencies, and cooperating/advisory agencies were then considered. In any situation where a comment supported a segment that did not best avoid or minimize impacts, further evaluation was conducted. In most situations, comments received were in support of the segment having the least impact. Finally, if there was little to no difference between the impacts of two segments, and there was no comment in support of one segment over the other, the least expensive option was selected. **Table 8-3** summarizes the identification of the segments that were recommended for further study based on the comparative analysis of the segments. **Appendix G (Segment Pairs Analysis Documentation)** contains the tables showing the results of the detailed analysis of each direct pair comparisons. **Table 8-4** summarizes the results of the Segment Pair Analysis and identifies the segments which comprise the project‟s five build alternatives.

Table 8-3: Results of Segment Pair Analysis

Segment Pair	Segment Selected	Basis for Selection
3 and 4	3	The greater length of Segment 4 makes it a less desirable option for the avoidance and minimization of impacts. The amount of total new alignment created by Segment 4 is nearly identical to that of Segment 3, as a result the natural environmental impacts are not entirely lessened by the fact that a portion of Segment 4 travels along existing roadway. While Segment 4 performs better at avoiding species and habitat impacts, it creates greater wetlands impacts, has more physical environmental impacts, costs approximately $30 million more, and is not as favorable an option to the citizens based on public comment. Additionally, Segment 4 would perform as well in meeting the hurricane evacuation criteria for the project's purpose and need. It is possible that the additional species and habitat impacts created by Segment 3 could be mitigated in a manner that reduces the magnitude of those impacts.
9 and 10	10	As there are no social impacts, no public preference, and each segment equally contributes to purpose and need, the major consideration for these segments are impacts to the natural environment. Segment 10 better avoids wetlands impacts and based on field surveys does an equal job in avoiding species and habitat impacts.
27 and 28	27	Segment 27 provides a direct connection to future planned projects identified in the Bay County LRTP and therefore is better suited to meet the purpose and need criteria. Additionally the existing intersection operation at US 231 and Star Ave., where segment 28 terminates, is very poor in terms of both safety and traffic operations. Creating a new intersection design at Nehi Rd. and US 231 will provide improved overall traffic operations to existing congested roads, which is also a purpose and need criteria for the project. Segment 27 has more natural environment impacts to habitat, but less impact on the social and physical environment. There was a strong public preference for Segment 27. Costs for Segment 27 were 50 percent less.
35 and 36	35	Segment 35 impacted one archaeological site that has been determined to not be eligible for the NRHP. Otherwise, Segment 36 had greater impacts in most categories, including impacts to the field-verified wetlands, floodplains, species hotspots, and National Hydrography Dataset (NHD) waterbodies.
38 and 39	38	Segments 38 and 39 have similar impacts. However, Segment 39 would interfere with a conservation easement for the Bay County IDC; therefore, Segment 39 was eliminated.
41 and 42	41	Although Segment 41 has more impacts to wetlands, Segment 42 has greater impacts to floodplains and field surveyed species and requires relocations. The wetland impacts may be mitigated in a manner that reduces the magnitude of those impacts;

Table 8-4: Gulf Coast Parkway Build Alternatives by Segment

Alternative	Segments
8	1, 3, 10, 15, 17, 21, 25, 26, 27
14	1, 3, 10, 15, 17, 21, 25, 30, 35, 37, 38
15	1, 3, 10, 11, 15, 17,21, 25, 40, 41
17	2, 16, 18, 21, 25, 26, 27
19	2, 16, 18, 21, 25, 29, 35, 37, 38

8.4.3 Build Alternatives

Based on the results of the segment evaluation, there are five build alternatives for consideration. These five alternatives, Alternatives 8, 14, 15, 17, and 19, are shown in **Figures 8-6A through 8-6F** and are described in **Table 8-5**.

It should be noted, that Alignment Alternatives 14, 15, and 19 differ from Corridor Alternatives 14, 15, and 19 in that the Alignment Alternatives also utilize Tram Road to connect to US 98 (Tyndall Parkway) instead of SR 22. When traffic was analyzed for SR 22 it was determined that 37,100 vehicles (Annual Average Daily Traffic {AADT}) would use SR 22 (assumed to be four lanes from Star avenue to US 98) in 2035 at a Level of Service (LOS) F. While Alternatives 8 and 17, which utilize Tram Road to connect to US 98 (Tyndall Parkway) would have an AADT 33,037 in 2035.

Plan sheets for the alternatives are provided in **Appendix H.**

To provide an acceptable LOS, SR 22 would have to be widened to six lanes requiring the relocation of 22 residences, 18 commercial properties, and 3 churches. Because each viable alternative needs to equally meet the project‟s purpose to fully and fairly account for each alternative‟s impacts and benefits, it was apparent that the option of utilizing SR 22 instead of Tram Road would cause greater costs and impacts than utilizing Tram Road. Therefore, Alternative Alignments 14, 15, and 19 were revised to utilize the Tram Road option for connecting to US 98 (Tyndall Parkway).

Figure 8-6A: Gulf Coast Parkway Build Alternatives

Figure 8-6B Gulf Coast Parkway Build Alternative Alignment 8

Figure 8-6C Gulf Coast Parkway Build Alternative Alignment 14

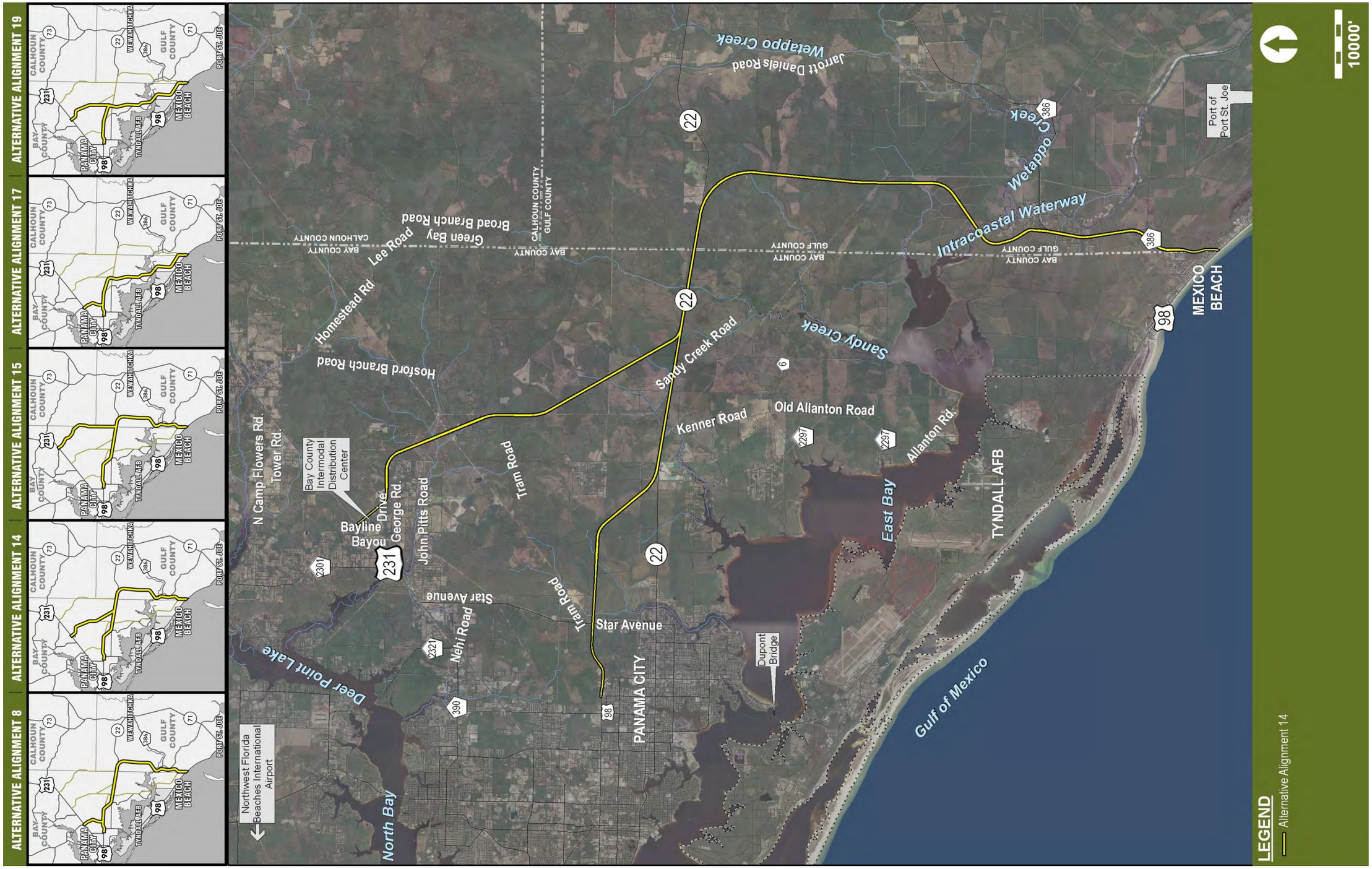


Figure 8-6D Gulf Coast Parkway Build Alternative Alignment 15

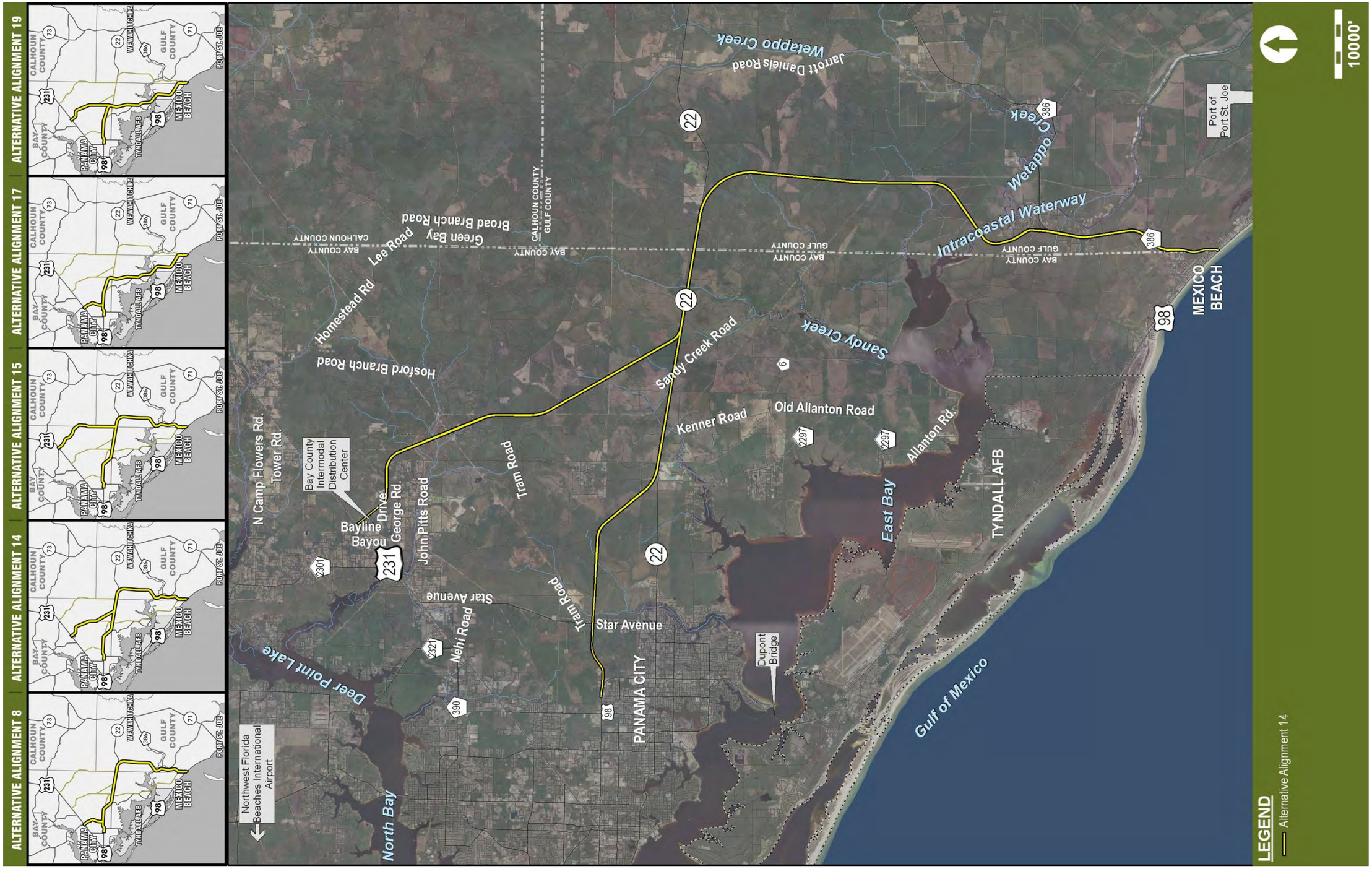


Figure 8-6E Gulf Coast Parkway Build Alternative Alignment 17

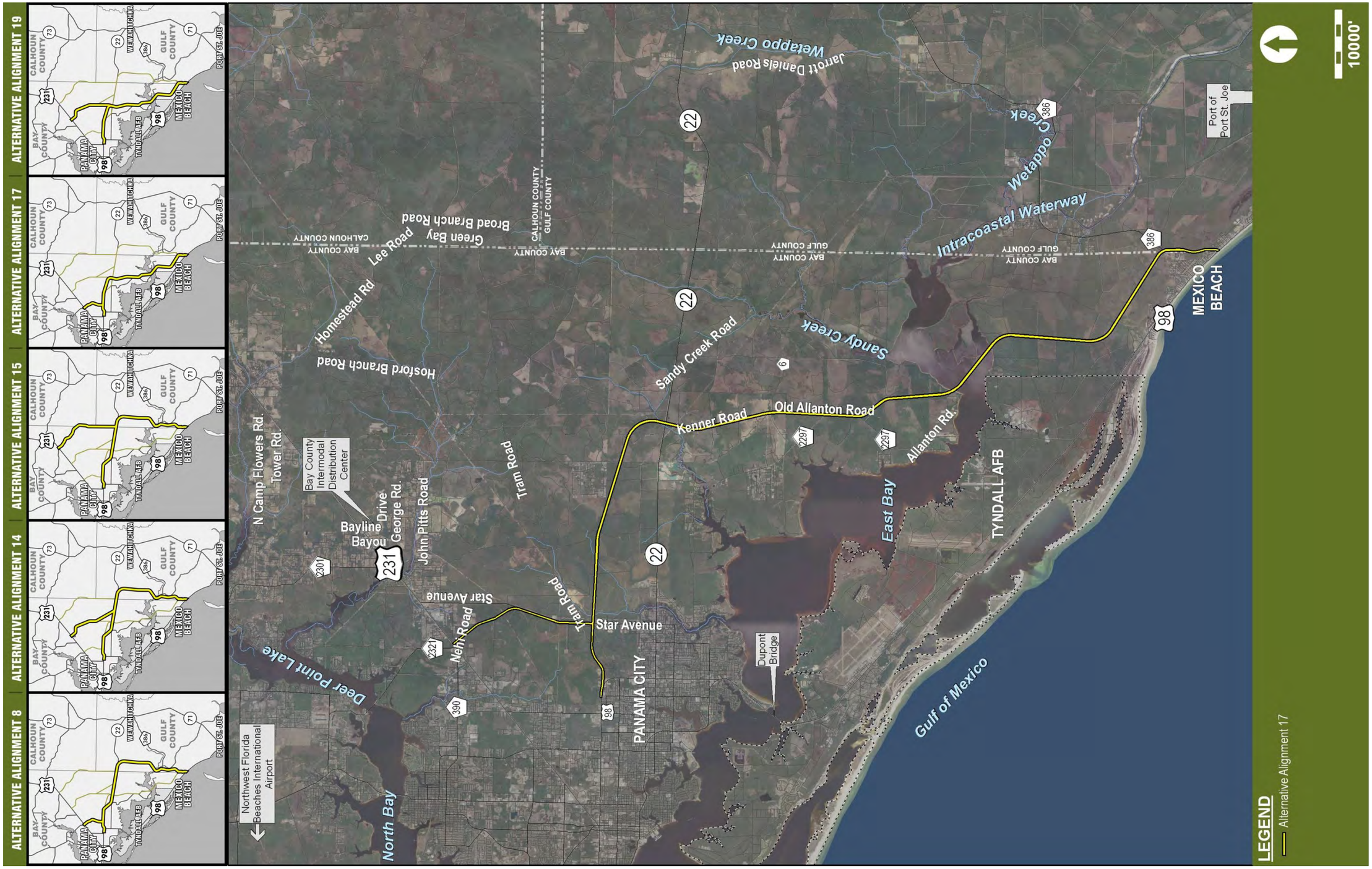


Figure 8-6F Gulf Coast Parkway Build Alternative Alignment 19

Table 8-5: Gulf Coast Parkway Alternatives' Descriptions

Alternative	Segments	Description
8	1, 3, 8, 10, 14, 15, 17, 21, 25, 26, 27	From the intersection of US 98 and CR 386, Alternative 8 follows CR 386 north utilizing the urban typical section to North 15th Street. From there it transitions to a rural typical section, continuing north along existing CR 386 for approximately 3 miles where it deviates from CR 386. Proceeding north on new alignment for a total of approximately 8.5 miles, Alternative 8 crosses the Intracoastal Waterway (ICWW) and Wetappo Creek on a new high-level bridge, and continues north to intersect SR 22 approximately 11.4 miles east of Callaway. From there, the alignment travels west along existing SR 22 for approximately 6.5 miles where it turns northwest and then west on new alignment for approximately 5.0 miles to intersect Star Avenue about 0.3 mile south of Tram Road. From Star Avenue, Alternative 8 transitions to an urban typical section which is carried through to both termini locations. The alternative's through movement continues west on new alignment for approximately 0.7 mile to merge with and follow existing Tram Road for approximately 0.5 mile. It then turns west and continues on new alignment to end at a new intersection with US 98 (Tyndall Parkway). Additionally, the less dominant leg of Alternative 8 proceeds north along existing Star Ave. approximately 2.2 miles until the intersection with Nehi Road where it follows mostly along Nehi Road to the northwest to end at a new intersection with US 231 in the vicinity of the existing CR 2321/US 231 intersection.
14	1, 3, 8, 10, 14, 15, 17, 21, 25, 30, 31, 36, 37, 38	From the intersection of US 98 and CR 386, Alternative 14 follows CR 386 north utilizing the urban typical section to North 15th Street. From there it transitions to a rural typical section, continuing north along existing CR 386 for approximately 3 miles where it then deviates from CR 386 alignment. Proceeding north on new alignment for a total of approximately 8.5 miles, Alternative 14 crosses the ICWW and Wetappo Creek on a new high-level bridge, and continues north to intersect SR 22 approximately 11.4 miles east of Callaway. From there, the alignment travels west along existing SR 22 for approximately 2.5 miles where it splits. To connect with US 98 (Tyndall Parkway), the alignment continues west on SR 22 for approximately 4.0 miles where it turns northwest and then west to intersect Star Ave. about 0.3 mile south of Tram Road. From Star Ave., Alternative 14 transitions to an urban typical section and continues west 0.7 mile to merge with and follow existing Tram Road for approximately 0.5 mile. It then turns west and continues on new alignment to end at a new intersection with US 98 (Tyndall Parkway). To connect with US 231, Alternative 14 after splitting from SR 22 proceeds northwest on new alignment for approximately 8.0 miles where it turns to the west and continuing on new alignment, travels south of and parallel to the Bay County and Conservation Boundary. It then transitions to an urban typical section and proceeds northwest to intersect with the planned entrance roadway for the IDC which intersects with US 231.
15	1, 3, 8, 10, 14, 15, 17, 21, 25, 12, 40, 41	From the intersection of US 98 and CR 386, Alternative 15 follows CR 386 north utilizing the urban typical section to North 15th Street. From there it transitions to a rural typical section, continuing north along existing CR 386 for approximately 3 miles where it then deviates from the CR 386 alignment. Proceeding north, on new alignment for a total of approximately 8.5 miles, Alternative 15 crosses the ICWW and Wetappo Creek on a new high-level bridge, and continues north to intersect SR 22 approximately 11.4 miles east of Callaway. From there, Alignment 15 has two options depending on the desired terminus. To connect with US 98 (Tyndall Parkway), Alternative 15 travels west along existing SR 22 for approximately 6.5 miles where it turns northwest and then west on new alignment for approximately 5.0 miles to intersect Star Ave. about 0.3 miles south of Tram Road. From Star Ave., Alternative 15 transitions to an urban typical section and continues west on new alignment for approximately 0.7 mile to merge with and follow existing Tram Road for approximately 0.5 mile. It then turns west and continues on new alignment to end at a new intersection with US 98 (Tyndall Parkway). Alternately, from SR 22, Alternative 15 continues across SR 22, traveling north then northwest on new alignment for approximately 14.0 miles, transitioning back to an urban typical section just before it ends at a new intersection with US 231 near Camp Flowers Road.

Alternative	Segments	Description
17	2, 16, 18, 21, 25, 26, 27	From the intersection of US 98 and CR 386, Alternative 17 follows CR 386 utilizing the urban typical section to North 15th Street. From there, it transitions to a rural typical section and continues north along existing CR 386 for approximately 0.5 mile where it then turns west and travels on new alignment for 3.0 miles. The alignment veers to the north for approximately 2.5 miles and then utilizing a new high level bridge crosses over East Bay and the ICWW. The alignment returns to grade on Allanton Point and continues to the north mostly along existing Allanton/Old Allanton Road until it reaches SR 22. After crossing SR 22, the road would travel north then west on new alignment for approximately 5.3 miles to connect at an intersection with Star Ave. about 0.3 mile south of Tram Road. From the intersection at Star Ave., Alternative 17 transitions to an urban typical section and has two termini locations. The alternative's through movement continues west on new alignment for approximately 0.7 mile until it merges with existing Tram Road. From there it travels along existing Tram Road for approximately 0.5 mile and then turns to the west on new alignment to end at a new intersection with US 98 (Tyndall Parkway). Additionally, the alternative travels north along existing Star Ave. approximately 2.2 miles until the intersection with Nehi Road where if follows mostly along Nehi Road to the northwest to end at a new intersection with US 231.
19	2, 16, 18, 21, 25, 29, 34, 36, 37 38	From the intersection of US 98 and CR 386, Alternative 19 follows CR 386 utilizing the urban typical section up to North 15th Street. From there it transitions to a rural typical section and continues north along existing CR 386 for approximately 0.5 mile where it then turns west and travels on new alignment for approximately 3.0 miles. The alignment veers to the north for approximately 2.5 miles and then, utilizing a new high level bridge crosses over East Bay and the ICWW. The alignment returns to grade on Allanton Point and continues to the north mostly along existing Allanton/Old Allanton Road until it reaches SR 22. After crossing SR 22, the road has two options. One would turn west to travel on new alignment for approximately 5.0 miles to intersect with Star Ave. about 0.3 mile south of Tram Road. From the intersection at Star Ave., Alternative 19 transitions to an urban typical section, continues west 0.7 mile to merge with and follow Tram Road for approximately 0.5 mile and then turns to the west on new alignment to end at a new intersection with US 98 (Tyndall Parkway). Alternately, Alignment 19 would continue north on new alignment for approximately 6.2 miles where it turns to the west, continuing on new alignment along the south property line of the Port of Panama City IDC and its Conservation Boundary. It then transitions to an urban typical section and turns to the northwest to intersect with the planned entrance roadway for the IDC which intersects with US 231.

8.5 ENGINEERING ANALYSIS

An engineering analysis for the Build Alternatives was performed to address the traffic operations issues, drainage issues, and bridge issues that are relevant to this project.

8.5.1 Traffic Considerations

8.5.1.1 Traffic Operations

The assumption for all the Gulf Coast Parkway project alternatives is that they will initially be a controlled access facility, with a posted speed of at least 55 mph, and having a predominant area type classification of "rural" for all future years (the exception being those areas surrounding the southern and northern termini where the classification is ("urban"). With these considerations, all roadway segments perform at LOS C or better for the design year traffic, meeting the statewide minimum LOS standard for a FIHS facility (See Rule Chapter 14-94.003, Statewide Minimum LOS Standards).

In addition to the segment LOS, 18 intersection types along the Gulf Coast Parkway alignments were identified to evaluate operational conditions with various arrangements, number of lanes and intersection control types. These intersections were analyzed as either two-way stop controlled, all-way stop controlled, or signalized intersections with optimized signal timings on existing geometry to determine if signalization was required to achieve acceptable intersection LOS. If signal controlled operation could not achieve acceptable LOS conditions, then additional analysis was conducted to determine if additional geometric improvements were required to meet acceptable LOS.

The results of the future traffic analysis indicate that all of the proposed intersections will operate at an acceptable LOS with signalization and the proposed improvements.

Tables 8-6 and 8-7 present the LOS results for the intersection of future Gulf Coast Parkway/US 231 and US 98/Tram Road in opening year (2012) and design year (2035).

Table 8-6: Future Year LOS for US 231 @ Gulf Coast Parkway

Intersection Type 12: US 231 and Gulf Coast Parkway Seg. 23, 24, 27		
2012 Design Hour Volume (DHV)	**AM LOS**	PM LOS
Signalized with Existing Geometry (4 lanes US 231 with Interim scenario)	C	**C**
Signalized with improvements (6 lanes US 231 with Interim scenario)	B	**B**
2035 DHV	**AM LOS**	PM LOS
Signalized with Existing Geometry (4 lanes US 231 with Interim scenario)	**E**	E
Signalized with Existing Geometry (6 lanes US 231 with Interim scenario)	C	**D**
Signalized with Existing Geometry (4 lanes US 231 with Full Buildout scenario)	D	**C**
Signalized with Existing Geometry (6 lanes US 231 with Full Buildout scenario)	A	**B**

Note: Bold values indicate unacceptable conditions.

A detailed analysis of the Gulf Coast Parkway @ US 231/CR 390/CR 2321 (Gulf Coast Parkway North Termini) intersection is included in the Gulf Coast Parkway Traffic Report.

The results of the 2012 scenario traffic condition analysis for US 231 and Gulf Coast Parkway indicate that the intersection LOS would operate at LOS C or better with the Interim Scenario, and the 2035 scenario traffic conditions analysis Indicates that US 231 and Gulf Coast Parkway would have unacceptable LOS conditions if US 231 remains a four-lane facility with Interim Scenario. With US 231 widened to 6 lanes and the full build-out scenario, the intersection would operate at LOS B or better.

Table 8-7: Future Year LOS for US 98 @ Tram Road

Intersection Type 9: Tram Road and Gulf Coast Parkway Seg. 25		
2012 DHV	**AM LOS**	**PM LOS**
Signalized with Existing Geometry (Initial Scenario)	**E**	D
Signalized with improvements (WB: Dual LT lane and a single RT lane with Initial scenario)	B	B
2035 DHV	**AM LOS**	**PM LOS**
Signalized with Existing Geometry (Initial scenario)	**F**	**F**
Signalized with improvements (6 lanes US 98 with final scenario)	A	B

Note: Bold values indicate unacceptable conditions.

A detailed analysis of the Gulf Coast Parkway @ US 98 / Tram Road (Tram Road Termini) intersection is included in the Gulf Coast Parkway Traffic Report.

For the Initial Scenario, the existing signalized intersection of US 98 (Tyndall Parkway) and Tram Road/Gulf Coast Parkway (Segment 25) was analyzed with only an additional northbound right turn lane on US 98. The results of the 2012 Initial Scenario traffic condition analysis indicate that US 98 (Tyndall Parkway) and Tram Road/Gulf Coast Parkway (Segment 25) would operate with unacceptable LOS conditions during the AM peak hour with the existing intersection arrangement and number of lanes. With the Tram Road/Gulf Coast Parkway (Segment 25) approach having dual left turn lanes and a single right turn lane, the intersection would operate at LOS B. Also, for the design year (2035), the intersection would have unacceptable LOS F conditions unless US 98 (Tyndall Parkway) is widened to six lanes. With a six-lane US 98 (Tyndall Parkway), the intersection would operate at LOS B or better.

The results of the future traffic analysis indicate that all of the proposed intersections will operate at an acceptable LOS with signalization and the proposed improvements.

8.5.1.2 Traffic Impact on Existing Roadways

The existing roadways of interest are US 98 (SR 30A or Tyndall Parkway), US 231 (SR 75), SR 22 (Wewa Highway), and Star Avenue (CR 2293), since these are the most important roadways within the study area. The traffic discussion in Section 6 shows that the segment of SR 22 between Star Ave and US 98 (Tyndall Parkway) is operating at LOS F in the year 2012. Similarly, US 98 (Tyndall Parkway) between SR 22 and Tram Road is also failing. US 98 (Tyndall Parkway) between Tyndall AFB and SR 22 is operating at the limit of the adopted LOS in the year 2012.

Alternatives 8 and 17 design traffic also shows that the intersection of the Gulf Coast Parkway with US 98 (Tyndall Parkway) and the intersection of the Gulf Coast Parkway with US 231 will need improving to six lanes to operate at an acceptable LOS.

A detailed analysis of the traffic impacts under different scenarios follows, so that these roadways mentioned above can be evaluated in terms of their respective performance without Gulf Coast Parkway and with each of the Gulf Coast Parkway alternatives present. They are presented in table format preceded by a brief bullet discussion.

Table 8-8 shows the traffic volumes and LOS for the selected roadways if the Gulf Coast Parkway is not built. This No Build scenario shows that:

- SR 22 will operate acceptably as a two-lane facility in Gulf County and in Bay County from SR 71 to west of CR 2297 (Allanton Road). The quality of the service is shown as at least LOS C in all future years.

- SR 22 from east of Star Ave. to Tyndall Parkway (US 98) should be improved at least from two lanes to a four-lane facility as this segment is failing in the year 2011. **Table 8-8** indicates that in the year 2035, even with four lanes, this same section is shown to fail. Improvements to this segment of SR 22 should include additional capacity from east of Star Ave. and west of US 98 (Tyndall Parkway) for the year 2035.

- US 98, from the east of the Tyndall AFB main entrance to the east of CR 386 falls below the adopted LOS C for a two-lane facility starting in the year 2025. Although it is not failing, the LOS is shown to be LOS "D", and will reach LOS E in 2035.

- US 98 (Tyndall Parkway) as a four-lane facility from west of the Tyndall AFB main entrance to north of Tram Road, is shown to be failing in all future years.

- US 231 (part of the SIS/FIHS) has more stringent LOS requirements. It is currently a four-lane facility. The segment southwest of CR 390 is shown to be below the adopted LOS C in 2012 and failing in the years 2025 and 2035 (LOS F).

- US 231 northeast of CR 390 to east of Star Avenue is shown as LOS C through 2025 but falling to LOS D in 2035.

- Star Avenue does not need additional capacity in all future years in the "no-build" scenario. A two-lane Star Ave. is shown to operate at LOS C (north of Tram Road) and at LOS D (south of US 231) in 2035.

Table 8-8: Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: No-Build Scenario

Roadway	Segment	Adopted LOS Standard	Year 2011 AADT	Year 2011 LOS	No-Build Scenario: No Gulf Coast Parkway - Only SR 22 Partially Improved[1]							
					AADT (Background + DRI* Traffic)			Future No. of Lanes	Future Facility Type	LOS		
					Year 2012	Year 2025	Year 2035			Year 2012	Year 2025	Year 2035
SR 22	West of SR 71 - Bay Co. line (Gulf Co.)	C	2,900	B	4,001	4,750	5,818	2	Undivided	B	B	C
SR 22	Bay Co. Line - Sandy Creek Rd	C	3,300	B	4,677	5,542	6,783	2	Undivided	C	C	C
SR 22	Sandy Creek Rd - CR 2297 (Allanton Rd.)	D	4,200	B	5,691	6,729	8,230	2	Undivided	C	C	C
SR 22	CR 2297 - Star Ave	D	10,300	C	12,673	14,910	18,203	4	Divided	C	D	**F**
SR 22	Star Ave - US 98	D	20,900	**F**	21,776	25,582	31,215	4	Divided	**F**	**F**	**F**
SR 22	West of US 98	D	11,100	C	12,726	14,910	18,175	4	Undivided	B	B	**B**
US 98	Gulf Co., East of CR 386	C	9,800	C	12,742	15,047	18,150	2	Undivided	C	**D**	**E**
US 98	CR 386 - Tyndall AFB	C	9,100	C	12,479	14,786	17,852	2	Undivided	C	**D**	**E**
US 98	Tyndall AFB - SR 22	D	35,500	D	33,738	31,857	29,592	4	Divided	**F**	**F**	**F**
US 98	SR 22 - Tram Rd	D	36,800	F	35,883	34,161	32,100	4	Divided	**F**	**F**	**F**
US 98	Tram Rd - Transmitter Rd	D	32,400	C	31,835	30,368	28,602	4	Divided	**F**	**F**	**F**
US 231	Transmitter Rd - CR 390	C	25,400	B	29,755	34,914	42,582	4	Divided	C	**F**	**F**
US 231	CR 390 - Star Ave	C	29,900	C	35,597	41,808	51,007	4	Divided	C	C	**D**
US 231	Star Ave to the east	C	28,800	B	35,647	41,960	51,234	4	Divided	C	C	**D**
Star Ave	SR 22 - Tram Rd	D	7,800	B	8,984	10,533	12,843	2	Undivided	C	C	C
Star Ave	Tram Rd - US 231	D	8,200	B	9,435	11,061	13,486	2	Undivided	C	C	D

Notes:
1. Assuming SR 22 widened to 4 lanes between US 98 (Tyndall Pkwy) to east of Star Ave.
LOS letter grades in BOLD are failing grades; in *ITALIC* represent worse than the adopted LOS for that facility or segment
Source: PBS&J calculations

*Development of Regional Impact

Table 8-9 presents the traffic impacts of Alternative 8 or Alternative 17, if they are built, on the LOS of the same nearby facilities or segments considered in the "no-build" scenario. A few comments can be made, as follows:

- SR 22 will operate acceptably as a two-lane facility in Gulf County with either Alternative 8 or 17. In Bay County, Alternative 8 intersects SR 22 near the Gulf County line and then follows the existing SR 22 alignment. This section of SR 22 would be improved to a four-lane facility and, therefore, would operate at a LOS B, which is far better than the recommended LOS C or D. West of CR 2297 (Allanton Road), Alternative 8 turns north, and traffic volumes on SR 22 are expected to decrease until near Star Ave. It was assumed that SR 22 will be widened to 4 lanes to keep it consistent with the "no-build" scenario assumptions. Therefore, SR 22 east of Star Ave. would operate at LOS B in all future years. This reduction of traffic would also benefit the operations of SR 22 between Star Ave. and US 98 (Tyndall Parkway), which would operate at LOS C in the design year, if the widening to four lanes occurs. If Alternative 17 is built, then the situation is very similar to Alternative 8, with SR 22 operating acceptably east and west of the Gulf Coast Parkway with the increased capacity of a four-lane facility. The quality of the service is shown at LOS B or C in all future years, which are better than the adopted LOS D for those sections of SR 22.

- As described above, SR 22 is expected to operate acceptably with four lanes with either Alternative 8 or Alternative 17 being built. This is different from the „no-build" scenario where SR 22, between Star Ave. and US 98 would fail even with the four-lane capacity improvement.

- US 98, from east of the Tyndall AFB main entrance to west of CR 386 would operate acceptably at a LOS B in all future years under both Alternative 8 or Alternative 17, which is better than the adopted LOS C for a two-lane. This is in contrast to the "no-build" scenario where this segment of US 98 falls below the adopted LOS C, since it will be operating at LOS D starting in the year 2025.

- US 98 (Tyndall Parkway) from west of the Tyndall AFB main entrance to north of Tram Road, as a four-lane facility is expected to fail, starting in the year 2025. In the "no build" scenario and in all future years, US 98 at four-lane capacity is estimated to fail. The presence of either Alternative 8 or Alternative 17 is expected to delay this failure until the year 2025. Both Alternative 8 and Alternative 17 include a capacity improvement on US 98 (Tyndall Parkway) from four lanes to six lanes at the intersections of either Alternative 8 or 17 with US 98 (Tyndall Parkway) near Tram Road, starting in the year 2025.

- US 231 is currently a four-lane facility. In the "no-build" scenario, segments of US 231 will either fall below the recommended LOS C or fail between southwest of CR 390 to east of Star Ave. Depending on the conceptual design layout of the intersection at US 231 with either Alternative 8 or Alternative 17, including the corresponding re-alignments of CR 390 and CR 2321, the need for widening US 231 to six lanes might be delayed until after 2025. At a minimum, the widening of US 231 to six lanes might be delayed until the year 2025 as a result of the construction of the Gulf Coast Parkway Alternative 8 or Alternative 17.

- Star Ave. does not need additional capacity in all future years, with either Alternative 8 or Alternative 17, as is the case in the "no-build" scenario. The facility would only be widened to four lanes when the Gulf Coast Parkway utilizes existing Star Ave. right-of-way.

Table 8-9: Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: Alternative 8 and Alternative 17 Scenarios

						AADT (Background + Gulf Coast Parkway Traffic)												
						Alternative 8						Alternative 17						
						AADT (Background + DRI Traffic)			LOS				AADT (Background + DRI Traffic)			LOS		
Roadway	Segment	Adopted LOS Standard	Year 2011 AADT	Year 2011 LOS	Future No. of Lanes	Year 2012	Year 2025	Year 2035	Year 2012	Year 2025	Year 2035	Future No. of Lanes	Year 2012	Year 2025	Year 2035	Year 2012	Year 2025	Year 2035
SR 22	West of SR 71 - Bay Co. line (Gulf Co.)	C	2,800	B	2	3,200	3,900	4,800	B	C	C	2	3,200	3,900	4,800	B	B	C
SR 22	Bay Co. Line - Sandy Creek Rd	C	3,400	B	4	10,000	12,200	14,800	B	B	B	2	3,300	3,400	4,000	B	B	B
SR 22	Sandy Creek Rd - CR 2297 (Allanton Rd.)	D	4,300	B	4	18,200	22,100	26,900	B	B	B	2	4,000	4,200	4,900	B	B	B
SR 22	CR 2297 - Star Ave	D	10,500	C	4	11,000	13,400	16,300	B	B	B	4	11,000	13,400	16,300	B	B	B
SR 22	Star Ave - US 98	D	18,500	D	4	18,200	22,100	26,900	B	B	B	4	18,200	22,100	26,900	B	B	B
SR 22	West of US 98	D	11,300	C	2	10,300	12,500	15,200	B	B	**B**	2	10,300	12,500	15,200	B	B	**B**
US 98	Gulf Co., East of CR 386	C	10,000	C	2	12,980	15,852	19,165	C	*D*	*D*	*2*	12,980	15,852	19,165	C	*D*	*D*
US 98	CR 386 - Tyndall AFB	C	9,200	C	2	5,000	6,100	7,500	B	B	B	2	5,000	6,100	7,500	B	B	B
US 98	Tyndall AFB - SR 22	D	34,600	D	4	33,000	39,000	50,500	C	D	**F**	4	33,000	39,000	50,500	C	D	**F**
US 98	SR 22 - Tram Rd	D	35,850	B	6	34,400	41,900	51,000	B	B	C	6	34,400	41,900	51,000	B	B	C
US 98	Tram Rd - Transmitter Rd	D	31,600	C	6	34,500	42,000	51,200	B	B	C	6	34,500	42,000	51,200	B	B	C
US 231	Transmitter Rd - CR 390	C	25,800	B	6	30,300	36,971	45,085	B	B	B	6	30,300	36,971	45,085	B	B	B
US 231	CR 390 - Star Ave	C	30,400	C	6	36,262	44,296	54,011	B	B	C	6	36,262	44,296	54,011	B	B	C
US 231	Star Ave to the east	C	29,300	B	6	36,262	44,296	54,011	B	B	C	6	36,262	44,296	54,011	B	B	C
Star Ave	SR 22 - Tram Rd	D	7,900	B	2	6,688	8,109	9,936	B	B	C	2	6,688	8,109	9,936	B	B	C
Star Ave	Tram Rd - US 231	D	8,300	B	4	9,814	11,943	14,543	B	B	B	4	9,814	11,943	14,543	B	B	B

Notes:
1. Assuming SR 22 widened to 4 lanes between US 98 (Tyndall Pkwy) to east of Star Ave.
LOS letter grades in BOLD **are failing grades; in *ITALIC* represent worse than the adopted LOS for that facility or segment**
Source: PBS&J calculations

Table 8-10 presents the results of the analysis of Alternatives 14, 15 and 19 impacts on traffic on the same facilities/segments. This analysis was done prior to the inclusion of the Tram Road connection to US 98 (Tyndall Parkway) in these alternatives. The following points can be made:

- SR 22 as a two-lane facility would operate acceptably in Gulf County with Alternatives 14, 15 or 19. In Bay County, Alternatives 14 and 15 intersect SR 22 near the Gulf County line and either follow the SR 22 existing alignment (Alternative 14) or just cross it and continues north (Alternative 15). In both cases, it was estimated that SR 22 would continue to operate at the adopted LOS C (or D further west) or better, east and west of the Gulf Coast Parkway alternative alignment. However, closer to Star Ave. and especially between Star Ave. and US 98 (Tyndall Parkway) both Alternatives 14 and 15 require the widening of SR 22 to four lanes as in all other scenarios previously discussed. Traffic diversion to the Gulf Coast Parkway is not enough to solve the operational failure of SR 22 east of US 98 (Tyndall Parkway), even with the widening of SR 22 to four lanes, in the design year 2035. In this regard, the situation is similar to the "no-build" scenario.

- Alternative 19 crosses SR 22 further west than Alternatives 14 or 15. Similar to those alternatives, it does not divert enough traffic to provide relief to the SR 22 segment between Star Ave. and US 98 (Tyndall Parkway), where in the design year, it is estimated to operate at LOS F, even with a four-lane capacity improvement.

- US 98, from east of the Tyndall AFB main entrance to west of CR 386 with Alternatives 14, 15, and 19 would operate at LOS B, which is better in all future years than the adopted LOS C for a two-lane facility. Again, this is in contrast to the "no-build" scenario where this segment of US 98 falls below the adopted LOS C, since it will be operating at LOS D starting in the year 2025.

- US 98 (Tyndall Parkway) from west of the Tyndall AFB to north of Tram Road, as a four-lane facility is expected to fail, starting in the year 2025. In the "no build" scenario and in all future years, US 98 (Tyndall Parkway) with four-lane capacity is estimated to fail. Similar to other Gulf Coast Parkway alternatives, the presence of either Alternatives 14, 15, or 19 is expected to delay the failure of a four-lane US 98 (Tyndall Parkway) until the year 2025.

- US 231 is currently a four-lane facility. In the "no-build" scenario, segments of US 231 would either fall below the recommended LOS C or fail between southwest of CR 390 to east of Star Ave. All of the alternatives (14, 15 or 19) intersect US 231 east of Star Ave. (actually east of CR 2301) a couple of miles or more, at which point there are no operational issues on US 231, southwest or northeast, of the proposed intersection with the respective Gulf Coast Parkway alignments. These alternatives do not have an impact on US 231 operations near CR 390 or Star Ave., which would still fail with the existing four lanes no matter which of Alternatives 14, 15, or 19 is finally built.

- Star Ave. does not need additional capacity in all future years, with Alternatives 14, 15, or 19, as is the case in the "no-build" scenario. A two-lane Star Ave. might operate at LOS B or LOS C, which are better than the adopted LOS D for that facility.

Table 8-10: Gulf Coast Parkway Traffic Impact on Selected Roadway Segments: Alternatives 14, 15, and 19 Scenarios

						AADT (Background + Gulf Coast Parkway Traffic)										
						Alternative 14				Alternative 15				Alternative 19		
Roadway	Segment	Adopted LOS Standard	Year 2005 AADT	Year 2005 LOS	Future No. of Lanes	Year 2012 LOS	Year 2025 LOS	Year 2035 LOS	Future No. of Lanes	Year 2012 LOS	Year 2025 LOS	Year 2035 LOS	Future No. of Lanes	Year 2012 LOS	Year 2025 LOS	Year 2035 LOS
SR 22	West of SR 71 - Bay Co. line (Gulf Co.)	C	2,800	B	2	B	C	C	2	B	C	C	2	B	C	C
SR 22	Bay Co. Line - Sandy Creek Rd	C	3,400	B	4	B	B	B	2	C	C	C	2	B	B	B
SR 22	Sandy Creek Rd - CR 2297 (Allanton Rd.)	D	4,300	B	2	C	C	D	2	C	C	D	2	B	B	C
SR 22	CR 2297 - Star Ave	D	10,500	C	4	B	B	B	4	B	B	B	4	B	B	B
SR 22	Star Ave - US 98	D	18,500	D	4	B	B	B	4	B	B	B	4	B	B	B
SR 22	West of US 98	D	11,300	C	2	B	B	B	2	B	B	B	2	B	B	B
US 98	Gulf Co., East of CR 386	C	10,000	C	2	C	*D*	*D*	2	C	*D*	*D*	*2*	C	*D*	*D*
US 98	CR 386 - Tyndall AFB	C	9,200	C	2	B	B	B	2	B	B	B	2	B	B	B
US 98	Tyndall AFB - SR 22	D	34,600	D	4	C	**F**	**F**	4	C	**F**	**F**	4	C	**F**	**F**
US 98	SR 22 - Tram Rd	D	35,850	**F**	4	C	**F**	**F**	4	C	**F**	**F**	4	C	**F**	**F**
US 98	Tram Rd - Transmitter Rd	D	31,600	C	4	C	**F**	**F**	4	C	**F**	**F**	4	C	**F**	**F**
US 231	Transmitter Rd - CR 390	C	25,800	B	4	C	*D*	**F**	4	C	*D*	**F**	4	C	*D*	**F**
US 231	CR 390 - Star Ave	C	30,400	B	4	*D*	**F**	**F**	4	*D*	**F**	**F**	4	*D*	**F**	**F**
US 231	Star Ave to the east	C	29,300	B	4	B	B	C	4	B	B	B	4	B	B	C
Star Ave	SR 22 - Tram Rd	D	7,900	C	2	B	B	B	2	B	B	C	2	B	B	B
Star Ave	Tram Rd - US 231	D	83,00	C	2	C	C	C	2	C	C	C	2	C	C	C

Notes:
1. Assuming SR 22 widened to 4 lanes between US 98 (Tyndall Pkwy) to east of Star Ave.
2. LOS letter grades in BOLD are failing grades; in *ITALIC* represent worse than the adopted LOS for that facility or segment
Source: PBS&J calculations

Table 8-11 provides a comparison of the performance of all the alternatives, including the No- Build Alternative, in improving mobility on the principal roadway segments in the study area. This table includes the performance of Alternatives 14, 15, and 19 with the Tram Road connection.

Based on the information presented in **Table 8-11**, it can be concluded that Alternatives 8 and 17 perform best in improving mobility. Under Alternatives 8 and 17 all road segments, except for the segment of US 98 in Gulf County to east of CR 386 and the segment of US 98 from Tyndall AFB to SR 22, would operate at LOS C or better. The following summarizes the road segments that would experience improvement in LOS.

All the Build Alternatives improve LOS over the No Build Alternative at the following locations:

- SR 22 from Star Avenue to US 98 in all years,
- SR 22 west of US 98 in all years,
- SR 22 from CR 2297 to Star Avenue in all years,
- US 98 from CR 386 to Tyndall AFB in all years,
- US 98 from Tyndall AFB to SR 22 in 2012, and
- US 231 from Star Avenue to east in all years.

Alternative 8 and Alternative 17 also improve the LOS over the No Build Alternative and Alternatives 14, 15, and 19 at the following locations:

- SR 22 from Sandy Creek Road to CR 2297 in all years,
- US 231 from Transmitter Road to CR 390 in all years,
- US 231 from CR 390 to Star Avenue in all years,
- US 98 from SR 22 to Tram Road in all years,
- US 98 from Tram Road to Transmitter Road in all years, and
- Star Avenue from Tram Road to US 231 in all years.

Alternatives 14 and 19 improve LOS over the No Build Alternative at the following location:

- Star Avenue from SR 22 to Tram Road in all years.

Alternatives 14 and 19 improve LOS over Alternatives 8, 15, and 17 at the following location:

- Star Avenue from SR 22 to Tram Road in 2035.

Table 8-11: Summary of Gulf Coast Parkway Alternatives' LOS Effects on Existing Roads

Roadway	Segment	No Build			Alt. 8			Alt. 14			Alt. 15			Alt. 17			Alt. 19		
		2012	2025	2035	2012	2025	2035	2012	2025	2035	2012	2025	2035	2012	2025	2035	2012	2025	2035
SR 22	West of SR 71 - Bay Co. line (Gulf Co.)	B	B	C	B	C	C	B	C	C	B	C	C	B	C	C	B	C	C
SR 22	Bay Co. Line - Sandy Creek Rd	C	C	C	B	B	B	B	B	B	C	C	C	B	B	B	B	B	B
SR 22	Sandy Creek Rd - CR 2297 (Allanton Rd.)	C	C	C	B	B	B	C	C	D	C	C	D	B	B	B	B	B	C
SR 22	CR 2297 - Star Ave	C	D	**F**	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SR 22	Star Ave - US 98	**F**	**F**	**F**	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SR 22	West of US 98	C	D	**F**	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
US 98	Gulf Co., East of CR 386	C	**D**	**E**	C	D	D	C	D	D	C	D	D	C	D	D	C	D	D
US 98	CR 386 - Tyndall AFB	C	**D**	**E**	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
US 98	Tyndall AFB - SR 22	**F**	**F**	**F**	C	D	**F**	C	**F**	**F**	C	**F**	**F**	C	D	**F**	C	**F**	**F**
US 98	SR 22 - Tram Rd	**F**	**F**	**F**	B	B	C	C	**F**	**F**	C	**F**	**F**	B	B	C	C	**F**	**F**
US 98	Tram Rd - Transmitter Rd	**F**	**F**	**F**	B	B	C	C	**F**	**F**	C	**F**	**F**	B	B	C	C	**F**	**F**
US 231	Transmitter Rd - CR 390	C	**F**	**F**	B	B	B	C	D	**F**	C	D	**F**	B	B	B	C	D	**F**
US 231	CR 390 - Star Ave	C	C	**D**	B	B	C	D	**F**	**F**	D	**F**	**F**	B	B	C	D	**F**	**F**
US 231	Star Ave to the east	C	C	**D**	B	B	C	B	B	C	B	B	B	B	B	C	B	B	C
Star Ave	SR 22 - Tram Rd	C	C	C	B	B	C	B	B	B	B	B	C	B	B	C	B	B	B
Star Ave	Tram Rd - US 231	C	C	D	B	B	B	C	C	C	C	C	C	B	B	B	C	C	C

Assumes SR 22 widened to 4 lanes between US 98 (Tyndall Pkwy) to east of Star Ave.
Pink highlight are locations where the alternative performs worse than the No Build Alternative
Green highlight shows LOS D when LOS D is below the adopted standard
Yellow highlight shows LOS F
Source: PBS&J calculations

8.5.2 Drainage Considerations

8.5.2.1 Soils

Soils are predominantly sandy with high seasonal high water table. The majority of the project area is hydrologic soil group D. Based on Natural Resources Conservation Service (NRCS) soil survey, soils in the upland areas are a mixture of Leefield, Albany, Stilson and Chipley Sands. These soils are poorly to moderately well drained soils with the groundwater approximately 1.0 to 3.0 feet below existing ground.

In the flatwoods, soils are mostly Plummer and Pelham Sands with some Pottsburg, Leon and Rutlege Sands. These areas are nearly level with poorly to very poorly drained soils. The groundwater is approximately zero to 1.5 feet below existing ground. In these areas there could also be standing water up to 2 feet above ground.

In the low lying areas the predominant soils are Pamlico-Dorovan complex, Rutlege and Allanton Sands and Pickney Fine Sand. These areas are nearly level and poorly drained. In most of these areas groundwater will be above existing ground as much as 2 feet.

8.5.2.2 Surface Water Crossings

The following approach provides a reasonable comparison of alternative alignments, but a much more refined effort using site specific topographic data will need to be done during the design phase to determine the size of the hydraulic structures. During the design phase, the structures will be developed in accordance with FDOT"s drainage standards and as such the impacts to floodplains will be minimized.

United States Geological Survey (USGS) Quadrangle maps and aerial images were used to delineate drainage basins and to determine locations where cross drains would be needed. Straight Line Diagrams for Bay and Gulf Counties were used to determine existing cross drain locations and sizes along existing alignments. No flow rate analysis was performed on high-level bridges that would be tidally influenced and subject to navigational horizontal and vertical clearance requirements. Region C Regression Equations were used to estimate a 50 year design flow rate for watersheds between 0.92 square miles and 4384 square miles.

Once flow rates were estimated, bridge lengths and culvert sizes were estimated. The Gulf Coast Parkway Location Hydraulic Report summarizes the technical approach. Below is a summary of the bridges and culverts required for each alternative.

Table 8-12: Bridges/Culverts Required By Alternative

Alternative	Number of High Level Bridges	Total Length of High Level Bridges (ft)	Number of Low Level Bridges	Total Length of Low Level Bridges (ft)	Number of Box Culverts	Number of Small Culverts
8	1	~7,000	14	5,380	11	19
14	1	~7,000	17	3,600	15	24
15	1	~7,000	15	4,995	13	26
17	1	~9,100	6	1,825	3	13
19	1	~9,100	8	2,125	5	19

Notes:
1. Bridge estimates include existing bridges assuming they will be rebuilt to current standards.
2. Small culverts are culverts estimated to single 54" pipes or less. The number of small culverts per alternative is an estimate and there could be more.

The Location Hydraulic Report also contains the conceptual bridge lengths and structure size for each alternative. The high level bridge lengths are based on considerations such as roadway geometry and environmental factors and are not based on hydraulic constraints. Final bridge lengths could be longer or shorter, depending upon wetland limits and topography. Specific site conditions will be considered in the bridge hydraulic reports and bridge development reports that document final design.

Scour will be evaluated during the final design phase. At this stage of evaluation, scour is not expected to be a significant issue. Most drainage ways are relatively small tributaries or streams. Flow rates and depths are expected to be small; therefore, scour should not be significant. The high level crossings over East Bay and the ICWW may requires coastal storm surge hydraulic evaluations during the design phase to determine flow rates and scour. Given that these structures are a substantial hydraulic distance from the Gulf of Mexico, effects of the storm surge should be dampened; therefore, it is not expected that velocities and scour will be significant.

8.5.2.3 Stormwater Pond Requirements

The number of potential ponds and their sizes has been determined for each segment of the project‟s alternative alignments. Pond basin limits along the segments were estimated based upon the USGS Quadrangle maps assuming that the profile will generally follow topographic contours except that the profile will be raised to some degree where cross drains or bridges are required. It was also assumed that there would not be more than 4,000 feet of roadway draining in one direction unless the contours were dropping significantly. Due to the high groundwater table in the project area, it is assumed all ponds will be wet detention. Most of the alternatives drain to East Bay and its tributaries while some drain to Deer Point Lake. These are Class II and I respectively, which share the same water quality criteria as Class III waters. Although these waters should not dictate the additional protection of an Outstanding Florida Water (OFW), we have assumed the ponds must meet the OFW criteria of an additional 50% of water quality volume (1.5” runoff). This creates a degree of conservatism in the pond size estimates and it is realized that during the design phase it may be determined that standard treatment volumes apply. This conservatism somewhat offsets the simplifying assumptions of basic rectangular shape and no radii in corners of the ponds.

Rather than compute specific pond sizes for each basin, the treatment volume was computed for each basin. Then a pond size was selected that would accommodate the treatment volume and estimated attenuation volume. Eight pond sizes were developed and each accommodates a different range of treatment volumes. One pond size can accommodate different treatment volumes because the volume can be stacked to varying depths up to 1.5‟ max. This is a reasonable approach for a preliminary effort. The eight pond sizes and associated treatment volumes are shown below.

Table 8-13: Pond Area Required

Range of Treatment Volume Required (ac-ft)	Surface Area at NWL (acres)	Total Pond Area Required (acres)
0.50 TO 1.00	0.75	2.14
> 1.00 TO 1.50	1.25	2.95
> 1.50 TO 2.50	2.00	4.06
> 2.50 TO 3.50	3.00	5.45
> 3.50 TO 4.50	4.00	6.78
> 4.50 TO 5.50	5.00	8.06
> 5.50 TO 6.50	6.00	9.32
> 6.50 TO 7.00	6.75	10.25

NWL = Normal Water Level

The total pond acreage was based on the following:

- Pond Length to Width Ratio of 2:1, rectangular shape, no corner radii
- The area of the normal water surface was calculated assuming average treatment volume in the range was contained in 1.0 foot of depth with vertical walls
- 4 foot depth at 1:6 slope from NWL to Maintenance Berm
- 20 foot wide Maintenance Berm
- Drop of 4 feet at 1:4 from top of Maintenance Berm to natural ground.
- Assumed offsite is routed around the pond. This is reasonable given the proposed road is likely a fill section to accommodate base clearance.

The attenuation volume is typically achieved within 1.5 to 2 feet above the treatment volume, so the assumed 4 foot depth below the low edge of the maintenance berm should be sufficient. The average basin length for each segment varies from and 1,300 feet to 9,600 feet. Because the final alignment has not been chosen and due to the overall length of the project, pond site alternatives for each basin have not been identified. The following table summarizes the number of pond sites required for stormwater management for each alignment. **Appendix I** contains the calculations for the pond acreages in **Table 8-14**. The Gulf Coast Parkway Pond Requirement Report contains a more detailed breakdown of pond requirements by alignment.

Table 8-14: Summary of Pond Requirements for Alternative Alignments

Alternative	Length (miles)	Number of Ponds	Pond Acreage Required	Number of Ponds/Mile	Pond Acreage/Mile
8	38	57	256	1.5	6.7
14	44	66	308	1.5	7.0
15	48	70	332	1.5	6.9
17	33	42	210	1.3	6.4
19	38	52	256	1.4	6.7

8.5.3 Bridge Considerations

Because the proposed Gulf Coast Parkway crosses several bodies of water, bridges will be required for all alternatives. Two of the water bodies are navigable waters: the Gulf ICWW and Wetappo Creek. A United State Coast Guard (USCG) permit will be required for any new bridge crossing of either of these water bodies. This permit will be obtained during the design phase of the project. Other water crossings include: Horseshoe Creek, Sandy Creek, Little Sandy Creek, Olivers Creek, Cushion Creek, and numerous unnamed tributaries.

The bridge typical sections for the proposed project have been presented earlier in this report (**Figure 8-3:** Rural Bridge Typical Section and **Figure 8-4:** Urban Bridge Typical Section). For both typical sections the proposed bridge will be a set of twin parallel structures. The main differences are different median widths between the two typical sections and the use of a 12-foot wide shared use path on one bridge under the rural bridge typical section compared to a five-foot sidewalk on the outside of each bridge under the urban bridge typical section.

8.5.3.1 High Level Bridges

Bridges over navigable waterways are subject to the navigational guidelines and protocols for the construction of bridges pursuant to 23 Code of Federal Regulations (CFR) Part 650.801-809 (Navigational Clearances for Bridges). A USCG permit is required when a bridge crosses waters which are: 1) tidal and used by recreational boating, fishing, and other small vessels 21 feet or greater in length, or 2) used or susceptible to use in their natural condition or by reasonable improvement as a means to transport foreign commerce. The USCG has established guide clearances for bridges over certain frequently navigated waterways. The guide clearances are considered to provide adequate clearance for the reasonable needs of navigation but are susceptible to change under particular circumstances. Where guide clearances are not established, the horizontal and vertical clearances for a proposed bridge project are determined on a case by case basis.

There are two navigable waterways in the study area, the Gulf ICWW and Wetappo Creek. Only the Gulf ICWW has established guide clearances. These are a vertical guide clearance requirement of 65 feet and a horizontal guide clearance requirement of 150 feet. Although Wetappo Creek does not have a guide clearance established, it is known to be used by high-mast sailboats and it provides harbor to many vessels of varying size during hurricanes.

The alternatives that cross Wetappo Creek (Alternatives 8, 14, and 15) cross the Creek where it is immediately adjacent to the ICWW (**Figure 8-7**). Since the crossing of ICWW requires a high-level bridge and the location of the proposed crossing of Wetappo Creek is so close to the crossing of the ICWW, the proposed crossing of both waterways will be on the same 65-foot high structure. **Figure 8-8** shows the proposed crossing of East Bay by Alternatives 17 and 19.

The USCG, the United States Army Corps of Engineers (USACE), the Northwest Florida Water Management District (NWFWMD), the Florida Department of Environmental Protection (FDEP), Gulf County, Bay County, and the Port of Port St. Joe were contacted in an effort to determine actual boat usage of Wetappo Creek and Gulf ICWW, in the study area. None of the agencies contacted had information on the types of vessels, the number of vessels, frequency of travel, or periods of high usage.

In addition, marinas and boatyards within three miles of each bridge site were canvassed to obtain information on boats at their facilities and the percentage that used either Wetappo Creek or the Gulf ICWW. **Table 8-15** presents a summary of the reported findings.

Figure 8-7: Wetappo Creek and the Intracoastal Waterway Crossing by Alternatives 8, 14, and 15

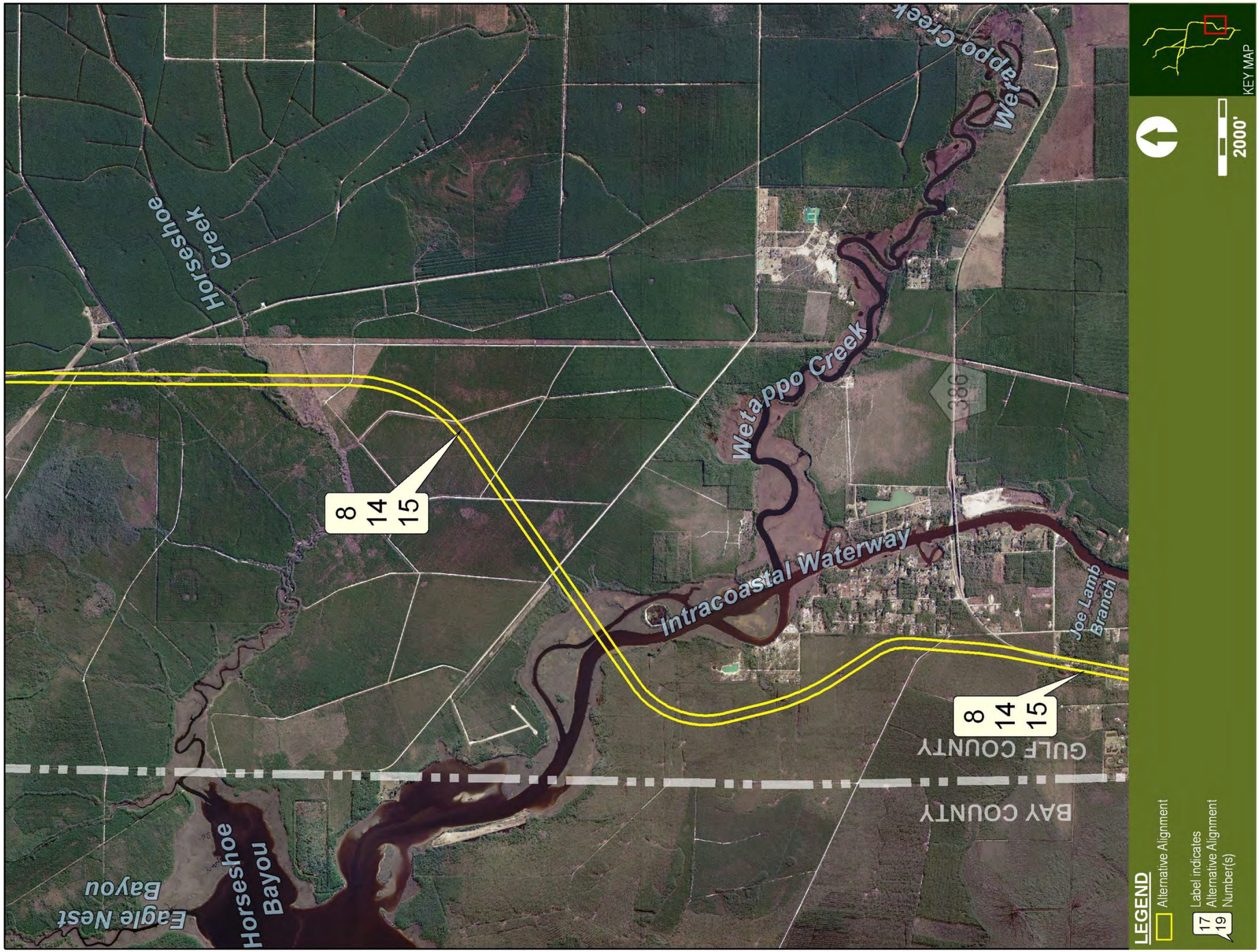


Figure 8-8: East Bay Crossing by Alternatives 17 and 19

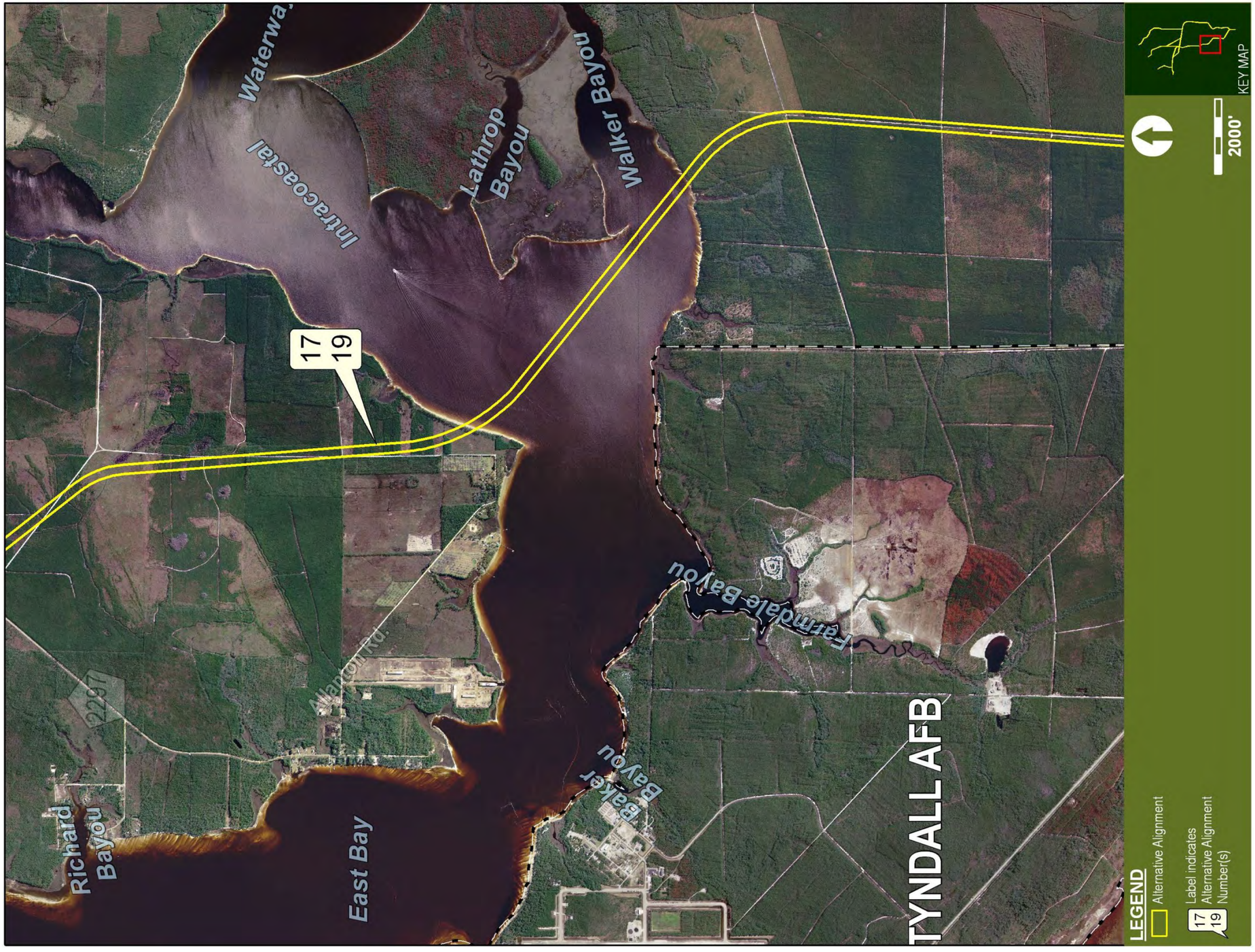


Table 8-15: Result of Survey of Marinas and Boatyards

Marina/Boatyard	Number of Moored Boats	Type of Boats	Range of Lengths (in feet)	Range of Heights (in feet)	Percent Boats Using ICWW	Percent Boats Crusing Wetappo Creek
Watson Bayou Marina	50	Sailboats	24-40	Up to 50	5%	1%
Panama City Marina	300	All types	24-60	Up to 60	25%	0%
Bayou Joe"s Marina						
Pier 98 Marina	15	All types	25-40	Up to 50	15%	1%
Bay County Boatyard	25	All types	25-65	Up to 60	30%	0%
Smuggler"s Cove Marina	19	Sailboats	20-47	Up to 55	3%	0%

Boat usage of the waterways was investigated by conducting a survey of boat traffic at the DuPont Bridge on July 17, 2013 and the Overstreet Bridge on July 18, 2013. There were eighteen boats that passed under the DuPont Bridge. Of these, two were commercial boats and the remaining boats were recreational watercraft. The two commercial boats ranged in length from 45 feet to 55 feet and ranged in height from 15 feet to 20 feet. The recreational boats included a mix of cruisers, fishing boats of various types, pontoon boats, a single houseboat, and a single sailboat. The longest boats were the cruisers which ranged in size from 26 feet to 45 feet in length and 10 to 15 feet in height. The tallest boat was the sail boat which had a 40 foot high mast and was 35 feet in length. A little more than half the boats (10) were headed in the direction of East Bay and eight were headed in the direction of St. Andrew Bay. **Appendix P** contains the data from the field survey.

The boat survey of Wetappo Creek at the Overstreet Bridge on July 18, 2013, resulted in only one boat, a center console, 22 feet in length and 10 feet in height. It was headed west (toward East Bay).

The ICWW has an established vertical guide clearance of 65 feet and a horizontal guide clearance of 150 feet, the same vertical and horizontal clearances provided by the Overstreet Bridge (constructed in 1988), east of the project. The older DuPont Bridge (constructed in 1965), located west of the project near the entrance to East Bay from St. Andrew Bay, provides 50 feet vertical clearance and 150 feet horizontal clearance.

Because the crossing of Wetappo Creek by Alternatives 8, 14, and 15 would be located where Wetappo Creek and the Gulf ICWW are adjacent to each other, the proposed bridge would cross both waterways with a 65-foot high vertical clearance. Horizontal clearance is yet to be determined (TBD), but is being coordinated with the USCG. The length of the proposed crossing of the ICWW/Wetappo Creek by Alternatives 8, 14, and 15 is estimated to be 7,000 feet.

The crossing of Gulf ICWW in East Bay by Alternatives 17 and 19 would provide 65 feet vertical clearance and 150 feet horizontal clearance at the main navigation channel. The length of the proposed crossing of the ICWW through East is estimated to be 9,100 feet. The actual bridge length will be refined in the design phase when detailed survey data is available.

Bridges over navigable waterways usually require a fender system and navigational lighting. Fender systems serve primarily as navigation aids by delineating the shipping channel beneath bridges, but also serve to protect the bridge substructure from potential damage due to minor collisions from vessels. The fender system requirements for the Gulf Coast Parkway navigable waterway crossings have not yet been

established; however, the proposed fender system will be consistent with the FDOT structures design guidelines for fender systems and approved by the USCG.

Bridge lighting requirements also have not been officially established. It is assumed, as minimum, that the same lighting requirements for the DuPont and Overstreet bridges will be required. For a multiple span fixed bridge this requires a green light with three vertical white lights to indicate the center of the main channel, green lights between piers within the channel but to either side of the main channel, and a red light on the bridge at the channel margin and red lights on each bridge pier in the channel. Where vertical clearance is affected by tides, the USCG may require a bridge clearance gauge be provided. The proposed navigational aids system will be designed in accordance with the USCG manual Bridge Lighting and Other Signals and approved by the USCG. Coordination with the USCG to establish the final horizontal and vertical clearances and navigational aids requirements is ongoing.

Bridges across navigable waters for each Build Alternative and the proposed minimum vertical clearance for each waterway is presented in **Table 8-16**. The crossing of the ICWW in East Bay would likely have the same vertical clearance (65 feet) as the Du Pont Bridge. The crossing of the ICWW would also provide the same horizontal clearance (50 feet) as the Du Pont Bridge. Coordination with the USCG is ongoing and as such this agency has not yet indicated the required horizontal clearance across Wetappo Creek. **Table 8-17** summarizes the horizontal clearances for the navigation channels of the waterway crossings.

Table 8-16: Proposed Vertical Clearances for Gulf Coast Parkway Bridges Over Navigable Waters

Waterway	Alternatives				
	8	14	15	17	19
East Bay ICWW	N/A	N/A	N/A	65 ft.	65 ft.
ICWW at Wetappo Creek	65 ft.	65 ft.	65 ft.	N/A	N/A
Wetappo Creek at ICWW	65 ft.	65 ft.	65 ft.	N/A	N/A

Table 8-17: Proposed Horizontal Channel Clearances for Gulf Coast Parkway Bridges over Navigable Waters

Waterway	Alternatives				
	8	14	15	17	19
East Bay ICWW	N/A	N/A	N/A	150	150
ICWW at Wetappo Creek	150	150	150	N/A	N/A
Wetappo Creek	TBD	TBD	TBD	TBD	TBD

8.5.3.2 Low Level Bridges

While all the alternatives have the same number of high level bridges (one) they have a varying numbers of low level bridges. **Table 8-18** summarizes the information on the low-level bridge structures.

Table 8-18 Low Level Bridge Summary by Build Alternative

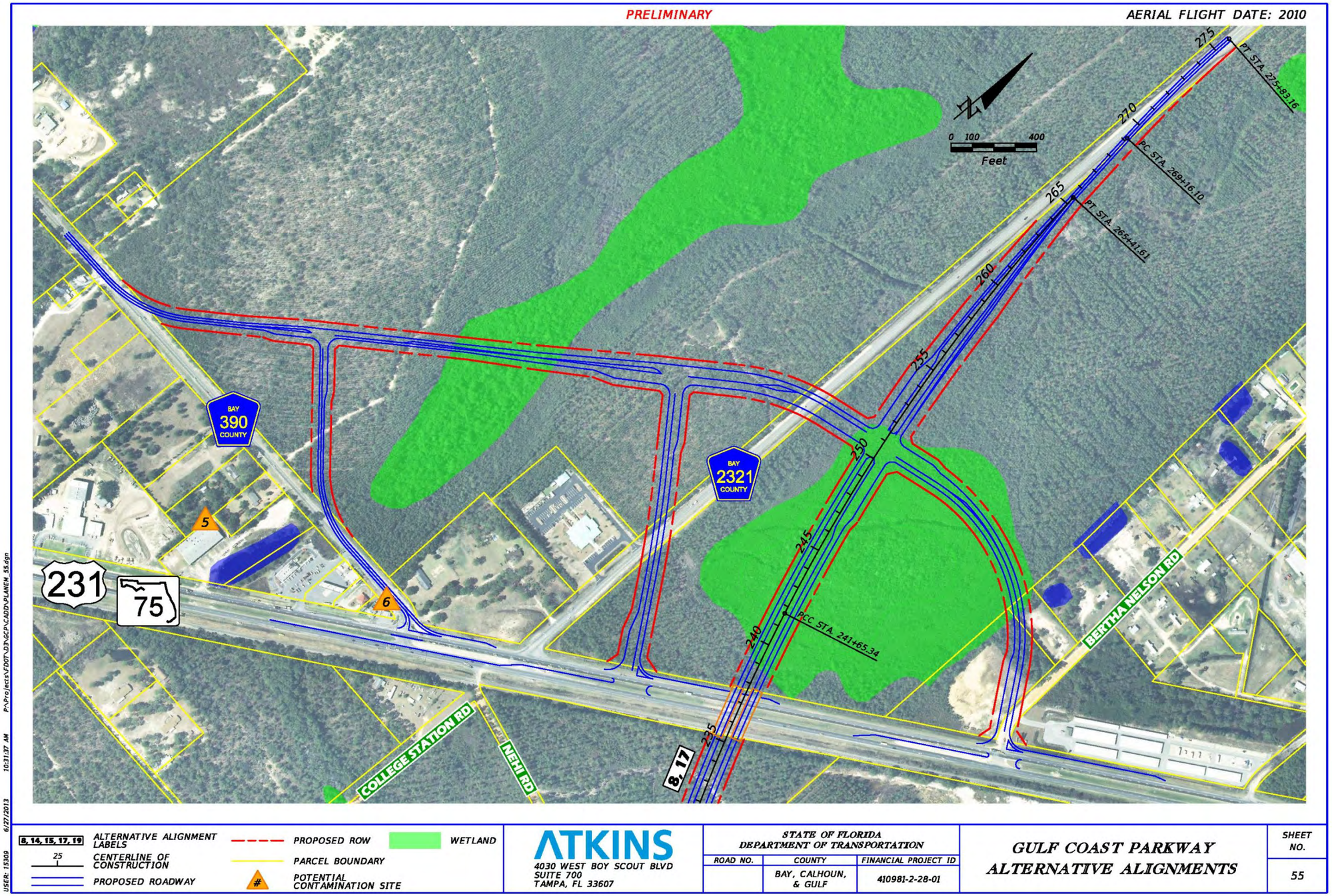
Alternatives									
8		14		15		17		19	
Bridge Length Feet (FT)	Water Body	Bridge Length (FT)	Water Body	Bridge Length (FT)	Water Body	Bridge Length (FT)	Water Body	Bridge Length (FT)	Water Body
58	Unnamed creek on CR 386	58	Unnamed creek on CR 386	58	Unnamed creek on CR 386	500	Cypress Creek	500	Cypress Creek
79	Cypress Creek on CR 386	79	Cypress Creek on CR 386	79	Cypress Creek on CR 386	68	Cooks Creek Oliver Bayou	68	Cooks Creek Oliver Bayou
84	Little Sandy Creek	84	Little Sandy Creek	84	Little Sandy Creek	1,000	Callaway Creek	1,000	Callaway Creek
82	Britt Branch	82	Britt Branch	82	Britt Branch			205	Bayou George & Island Br
47	Wildcat Swamp	47	Wildcat Swamp	47	Wildcat Swamp			70	Beefwood Branch
42	Unnamed Creek	42	Unnamed Creek	42	Unnamed Creek				
300	Sandy Creek on SR 22	300	Sandy Creek on SR 22	300	Sandy Creek on SR 22				
68	Olivers Creek on SR 22	68	Olivers Creek on SR 22	68	Olivers Creek on SR 22				
36	Cushion Creek	36	Cushion Creek	36	Cushion Creek				
1,000	Callaway Creek	1,000	Callaway Creek	1,000	Callaway Creek				
		205	Bayou George & Island Br	88	Tributary to Sandy Creek				
		70	Beefwood Branch	4,500	Tributary to Sandy Creek				
1,796		**2,071**		**6,384**		**1,568**		**1,843**	

8.5.3.3 US 231 Flyover

Clearance requirements for the proposed 250-foot long dual structure over the Bay Line Railroad and US 231 (shown in **Figure 8-9**) will be coordinated with the railroad company (Genesee and Wyoming Corporation of Rochester, NY); however, minimum horizontal clearance for a normal railroad crossing measured from the center of track is 18 feet with crash walls and 25 feet without crash walls1. This would be in addition to the clearance requirements for US 231, which is 24 feet from the edge of the auxiliary lane.2. Minimum vertical clearance measured from the bottom of the superstructure to the top of the highest rail should be 23.5 feet.

1 Florida Department of Transportation, *Plans Preparation Manual*, 2013, Chapter 6, Table 6.3.3, p. 6-5.
2 Florida Department of Transportation, *Plans Preparation Manual*, 2013, Figure 2.10.1, Table 2.11.11, & Figure 4.1.2.2

Figure 8-9: Alternatives 8 and 17 US 231 Flyover



8.5.4 Costs Analysis

The total project costs include right-of-way acquisition, design, road and bridge construction costs, construction engineering inspection (CEI), and mitigation costs. The design and CEI were calculated as percentages of the roadway and bridge construction costs. The roadway and bridge construction costs were calculated using FDOT Long Range Estimate (LRE) methodology of per lane mile costs for the roadways and per square foot costs for the bridges (**Tables 8-19 and 8-20**). The right-of-way costs were calculated using current market values and include land, site improvements, business damages, relocations, and other administrative costs. The estimated project costs of the Build Alternatives for 2 and 4 lanes are summarized **Tables 8-21** and **8-22**. Supporting documents for the construction costs and right-of-way costs are included in **Appendix J**.

Table 8-19: Roadway and Structure Cost Estimate for 2-Lane Roadway

Alternative	Length Miles (MI)	Roadway Cost ($mil)	Intersection Cost ($mil)	Low Level Bridge Cost ($mil)	High Level Bridge Cost ($mil)	Bridge Culverts Cost ($mil)	Total Cost ($mil)
8	34.74	$103.54	$15.26	$36.95	$34.65	$0.84	**$191.24**
14	41.66	$121.34	$2.57	$46.94	$34.65	$1.25	**$206.75**
15	45.02	$132.18	$2.57	$56.24	$34.65	$1.09	**$226.73**
17	30.21	$94.65	$15.26	$12.75	$68.08	$0.41	**$191.15**
19	35.61	$109.75	$2.56	$16.67	$68.08	$0.63	**$197.69**

Note: Estimates based on FDOT Long Range Estimate methodology

Table 8-20: Roadway and Structure Cost Estimate for 4-Lane Roadway

Alternative	Length (MI)	Roadway Cost ($mil)	Intersection Cost ($mil)	Low Level Bridge Cost ($mil)	High Level Bridge Cost ($mil)	Bridge Culverts Cost ($mil)	Total Cost ($mil)
8	34.74	$161.84	$15.26	$73.90	$69.29	$0.84	**$321.13**
14	41.66	$188.91	$2.56	$93.89	$69.29	$1.25	**$355.90**
15	45.02	$205.57	$2.57	$112.49	$69.29	$1.09	**$391.01**
17	30.21	$148.04	$15.26	$25.51	$136.16	$0.41	**$325.38**
19	35.61	$170.93	$2.55	$33.34	$136.16	$0.63	**$343.61**

Note: Estimates based on FDOT Long Range Estimate methodology

Table 8-21: Estimated Project Costs for 2-Lane Roadway

Alternative	ROW* Cost ($mil)	Design Cost ($mil)	Road Cost ($mil)	Intersection Cost ($mil)	Bridge Cost ($mil)	CEI Cost ($mil)	Mitigation Cost ($mil)	Estimated Total Cost
8	$42.70	$28.69	$103.54	$15.26	$72.44	$32.99	$16.96	$383.97
14	$46.60	$31.01	$121.34	$2.57	$82.84	$35.66	$25.18	$345.20
15	$48.35	$34.01	$132.18	$2.56	$91.98	$39.11	$25.41	$373.61
17	$44.70	$28.67	$94.65	$15.61	$81.24	$32.97	$21.94	$319.43
19	$47.90	$29.65	$109.75	$2.56	$85.38	$34.10	$28.76	$338.10

Note:
1. Design cost is 15 % construction cost.
2. CEI costs are 15% design and construction cost.

*Right-of-way

Table 8-22: Estimated Project Costs for 4-Lane Roadway

Alternative	ROW Cost ($mil)	Design Cost ($mil)	Road Cost ($mil)	Intersection Cost ($mil)	Bridge Cost ($mil)	CEI Cost ($mil)	Mitigation Cost ($mil)	Estimated Total Cost
8	$42.70	$48.17	$161.84	$15.26	$144.03	$55.39	$33.91	$501.30
14	$46.60	$53.39	$188.91	$2.56	$164.43	$61.39	$50.36	$567.63
15	$48.35	$58.65	$205.57	$2.57	$182.87	$67.45	$50.82	$616.28
17	$44.70	$48.81	$148.04	$15.26	$162.08	$56.13	$43.87	$518.89
19	$47.90	$51.54	$170.93	$2.55	$170.13	$59.27	$57.51	$559.84

Note:
1. Design cost is 15 % construction cost.
2. CEI costs are 15% design and construction cost.

8.5.5 Bicycle and Pedestrian Accommodations

All of the Build Alternatives would provide bicycle and pedestrian facilities for both the interim and the ultimate designs for the length of the project. The type of bicycle/pedestrian facilities depends on the typical section (refer to **Figures 8-1** through **8-4**).

The interim rural typical section includes a 12-foot wide multi-use trail along the initial two-lane roadway and the initial two-lane bridge. The interim urban typical section includes a six-foot six–inch bike lane and a five-foot sidewalk along the road. The interim bridge would provide a 10-foot shoulder and five-foot sidewalk. The ultimate rural roadway and bridge typical section would not add any additional pedestrian facilities. The ultimate urban roadway typical section provides a six-foot six-inch wide bike lane and a five-foot sidewalk in both directions and the urban bridge typical section includes a 10-foot shoulder with a five-foot wide sidewalk on each bridge.

8.5.6 Access Management

The SIS access management standards are applicable to this project. Access Class 3, as defined in FDOT *Access Management Guidelines* and the *Plans Preparation Manual,* is the appropriate classification for this facility. The road should have a restrictive median with minimum traffic signal, median opening, and connection spacing.

8.5.7 Intersection Layouts

A summary of the intersection analysis is presented in Section 6 of this report. Most of the intersections (shown in **Figure 8-10**) are new with the exceptions of the US 98 and CR 386 intersection in Mexico Beach, the SR 22 and Star Avenue intersection in Callaway, the Star Avenue and US 231 intersection, and the US 98 (Tyndall Parkway) and Tram Road intersection in Callaway. **Table 8-23** summarizes the intersections associated with each alternative.

Table 8-24 provides the results of the existing year (2012) and design year (2035) intersection analyses for all intersection locations except the Gulf Coast Parkway intersections with US 98 (Tyndall Parkway) and US 231. These two intersections were analyzed separately due to the need to reconfigure their geometric layout. For Tram Road and US 98 this required a new intersection configuration with improvement to US 98 (**Figure 8-11**). For the Nehi Road and US 231 intersection a new grade separated intersection was required (**Figure 8-12**).

Figure 8-10: Gulf Coast Parkway Intersection Locations

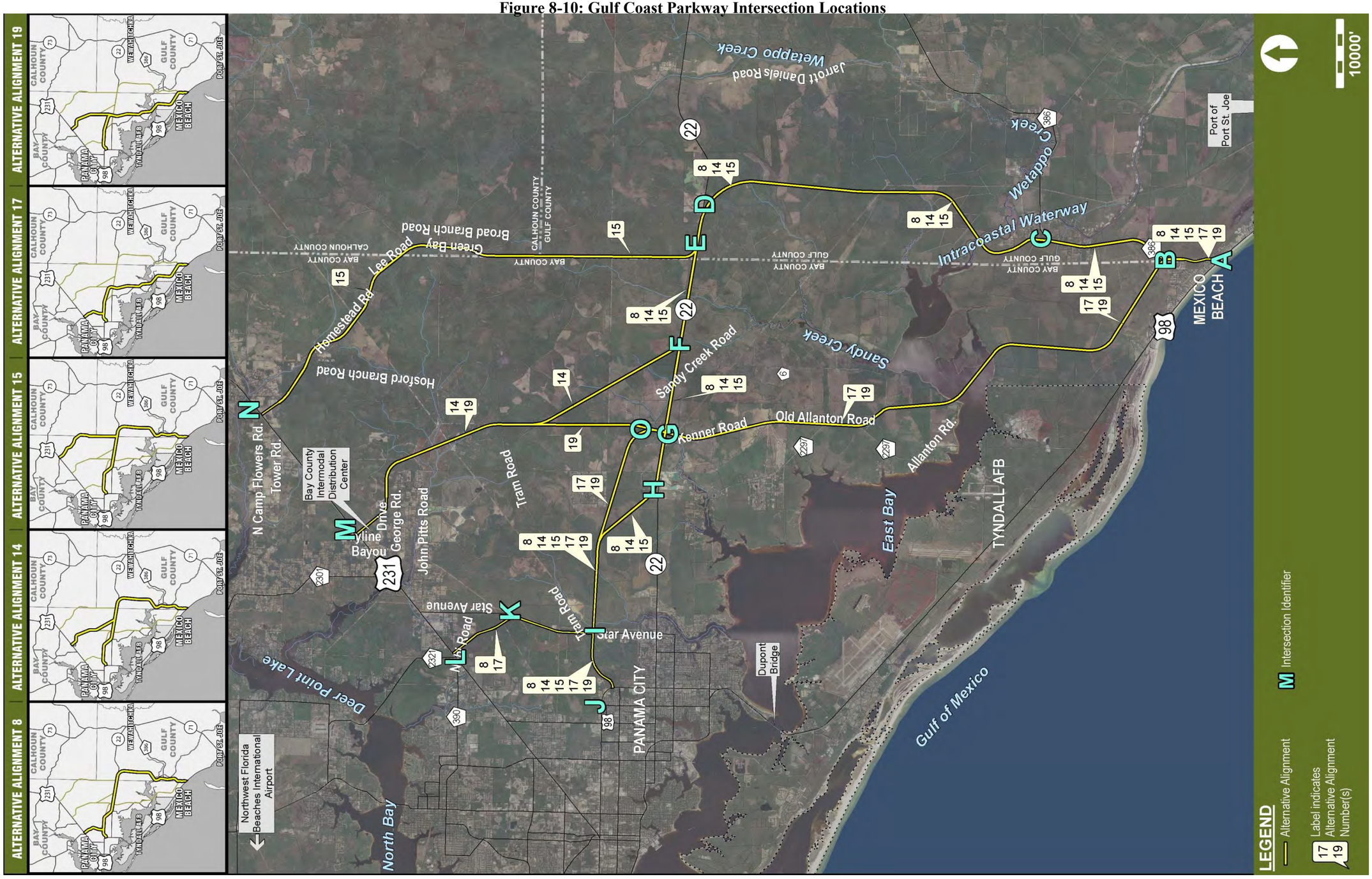


Table 8-23: Intersections Analyzed for Alternatives 8, 14, 15, 17 and 19

Intersection Type	Alternative 8	Alternative 14	Alternative 15	Alternative 17	Alternative 19
1	US 98 @ CR 386 (A)	US 98 @ CR 386 (A)	US 98 @ CR 386 (A)	US 98 @ CR 386 (A)	US 98 @ CR 386 (A)
2	CR 386@ Gulf Coast Parkway, Seg 3 (C)	CR 386 @ Gulf Coast Parkway. Seg 3 (C)	CR 386 @ Gulf Coast Parkway, Seg 3 (C)	CR 386 @ Gulf Coast Parkway, Seg 2 (B)	CR 386 @ Gulf Coast Parkway, Seg 2 (B)
3				Gulf Coast Parkway Seg 2, 16 @ SR 22 (G)	Gulf Coast Parkway Seg 2, 29 @ SR 22 (G)
4	Gulf Coast Parkway Seg 10 @ SR 22 (D)	Gulf Coast Parkway Seg 10 @ SR 22 (D)	Gulf Coast Parkway Seg 10 @ SR 22 (D)		
5	Gulf Coast Parkway Seg 15 @ SR 22 (H)	Gulf Coast Parkway Seg 15 @ SR 22 (H)	Gulf Coast Parkway Seg 15 @ SR 22 (H)		
5a		Gulf Coast Parkway Seg 30 @ SR 22 (F)	Gulf Coast Parkway Seg 12, 40 @ SR 22 (E)		
6					Gulf Coast Parkway Seg 16, 29 @ Gulf Coast Parkway Seg. 29 (G)
7		Gulf Coast Parkway Seg 21, 25 @ Star Avenue (I)	Gulf Coast Parkway Seg 21, 25 @ Star Avenue (I)		Gulf Coast Parkway Seg 21, 25 @ Star Avenue (I)
8	Gulf Coast Parkway Seg 21, 25 @ Star Ave Gulf Coast Parkway Seg.26 (I)			Gulf Coast Parkway Seg 21, 25 @ Star Ave Gulf Coast Parkway Seg.26 (I)	
9	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)	Gulf Coast Parkway Seg 25 @ US 98 Tyndall Parkway (J)
10	Gulf Coast Parkway Seg 26, 27 @ Star Ave (K)			Gulf Coast Parkway Seg 26, 27 @ Star Ave (K)	
12	Gulf Coast Parkway Seg 27 @ US 231 (L)			Gulf Coast Parkway Seg 27 @ US 231 (L)	
13		Gulf Coast Parkway Seg 30, 36-38 @ US 231 (M)			Gulf Coast Parkway Seg 30, 36-38 @ US 231 (M)
14			Gulf Coast Parkway Seg 40, 41 @ US 231 (N)		

Source: PBS&J
Note: Highlighted intersections are special cases, which were analyzed separately. Details in Appendices D and E of the *Traffic Report*
Letters in parenthesis designated the intersection shown on **Figure 8-10.**

Table 8-24: Future Year (2012 and 2035) Intersection LOS

Intersection Type 1: US 98 and Gulf Coast Parkway/CR386 (A)		
2012 DHV	***AM LOS***	***PM LOS***
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	B	B
Signalized with Improvements (EB LT, WB RT, Dual SB LT, SB RT)	A	A
2035 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**F**
Signalized with Improvements (EB LT, Dual EB TH, Dual WB TH/Shared RT, WB RT, Dual SB LT, SB RT)	B	B
Intersection Type 2: CR 386 at Gulf Coast Parkway Segment 2 (B) and CR 386 at Gulf Coast Parkway Segment 3 (C)		
2012 DHV		
Unsignalized with Existing Geometry	B	B
Signalized with Existing Geometry	B	B
Signalized with Improvements (EB: LT, TH, WB: TH, RT, SB: LT, RT)	A	A
2035 DHV		
Unsignalized with Existing Geometry	**E**	**F**
Signalized with Existing Geometry	B	C
Signalized with Improvements (Dual EB LT/Shared TH, EB TH, Dual WB TH/Shared RT, SB: LT, RT)	A	A
Intersection Type 3: SR 22 at Gulf Coast Parkway Segments 2, 16 (G) SR 22 at Gulf Coast Parkway Segments 2, 29 (G)		
2012 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**F**
Signalized with Improvements (WB: LT, TH, RT, NB RT, SB LT)	B	B
2035 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**F**
Signalized with Improvements (EB LT, 2 EB TH/Shared RT, WB: LT, 2TH, RT, SB: 2LT, Dual SB TH/Shared RT, NB: LT, 2TH/Shared RT)	C	C
Intersection Type 4: SR 22 at Gulf Coast Parkway Segment 10 (D)		
2012 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	B	B
Signalized with Improvement (EB RT)	B	A
2035 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	D	**E**
Signalized with Improvement (EB: TH, RT, WB TH, NB: 2 LT, RT)	A	A
Intersection Type 5: SR 22 at Gulf Coast Parkway Segment 15 (H)		
2012 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**E**
Signalized with Improvements (WB RT, Dual SB LT/Shared RT)	A	B
2035 DHV		
Unsignalized with Existing Geometry	**F**	**F**
Signalized with Existing Geometry	**F**	**F**
Signalized with Improvements (WB: RT, 2TH, Dual SB LT/ Shared RT)	A	B
Intersection Type 5A: SR 22 and Gulf Coast Parkway Segments 30 and SR 22 at Segment 12, 40(F)		
2012 DHV		
Unsignalized with Existing Geometry	C	D
Signalized with Existing Geometry	A	A
2035 DHV		
Unsignalized with Existing Geometry	C	D
Signalized with Existing Geometry	A	A
Signalized with Improvement (EB: LT, TH, WB TH, RT)	A	A

Intersection Type 6: Gulf Coast Parkway Segments 16, 29 at Gulf Coast Parkway Segment 29 (O)		
2012 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	D	C
Signalized with Improvements (EB: LT, NB: LT)	B	B
2035 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	**F**	**F**
Signalized with Improvements 4 lanes in each direction (EB: Shared LT/RT, RT, Dual NB LT and TH)	B	B
Intersection Type 7: Star Avenue at Gulf Coast Parkway Segments 21, 25 (I)		
2012 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	C	C
Signalized with Improvements (NB/SB/WB/EB: LT, TH/Shared RT)	B	B
2035 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	**F**	**F**
Signalized with Improvements 4 lanes in each direction (NB/SB: LT, Dual TH/Shared RT, EB/WB: LT, 2 TH, RT)	B	B
Intersection Type 8: Star Avenue, Gulf Coast Parkway Segment 26, at Gulf Coast Parkway Segments 17, 21, 25 (I)		
2012 DHV		
Unsignalized with 2 lanes in each direction	**F**	**F**
Signalized with 2 lanes in each direction	C	D
Signalized with Improvements (NB/SB/WB/EB: LT, TH/Shared RT)	B	B
2035 DHV		
Unsignalized with 2 lanes in all direction	**F**	**F**
Signalized with 2 lanes in all direction	**F**	**F**
Signalized with Improvements 4 lanes in each direction (NB/SB: LT, Dual TH/Shared RT, EB/WB: LT, 2 TH, RT)	B	B
Intersection Type 10: Gulf Coast Parkway Seg 26, 27 at Star Avenue (K)		
2012 DHV		
Unsignalized with 2 lanes in each direction	B	C
Signalized with 2 lanes in each direction	B	B
Signalized with Improvements (NB: LT, TH, SB: TH, RT, EB: LT, RT)	A	A
2035 DHV		
Unsignalized with 2 lanes in all directions	**F**	**F**
Signalized with 2 lanes in all directions	D	C
Signalized with Improvements (NB: LT, 2 TH, Dual SB TH/Shared RT, EB: LT, RT)	B	B
Intersection Type 13: US 231 at Gulf Coast Parkway Segments 30, 38 (M)		
2012 DHV		
Signalized with Existing Geometry (4 lanes US 231 with Interim scenario)	A	A
Signalized with improvements (6 lanes US 231 with Interim scenario)	A	A
2035 DHV		
Signalized with Existing Geometry (4 lanes US 231 with Full Buildout scenario)	B	B
Signalized with Existing Geometry (6 lanes US 231 with Full Buildout scenario)	A	B
Intersection Type 14: US 231 at Gulf Coast Parkway Segments 40, 41 (N)		
2012 DHV		
Signalized with Existing Geometry (4 lanes US 231 with Interim scenario)	A	A
Signalized with improvements (6 lanes US 231 with Interim scenario)	A	A
2035 DHV		
Signalized with Existing Geometry (4 lanes US 231 with Full Buildout scenario)	B	B
Signalized with Existing Geometry (6 lanes US 231 with Full Buildout scenario)	A	B

Note: Bold values indicate unacceptable conditions.
Letters in parenthesis indicate the location of the intersection as shown on Figure 8-9.

Figure 8-11: US 98 (Tyndall Parkway)/Gulf Coast Parkway (Tram Road) Intersection Configuration

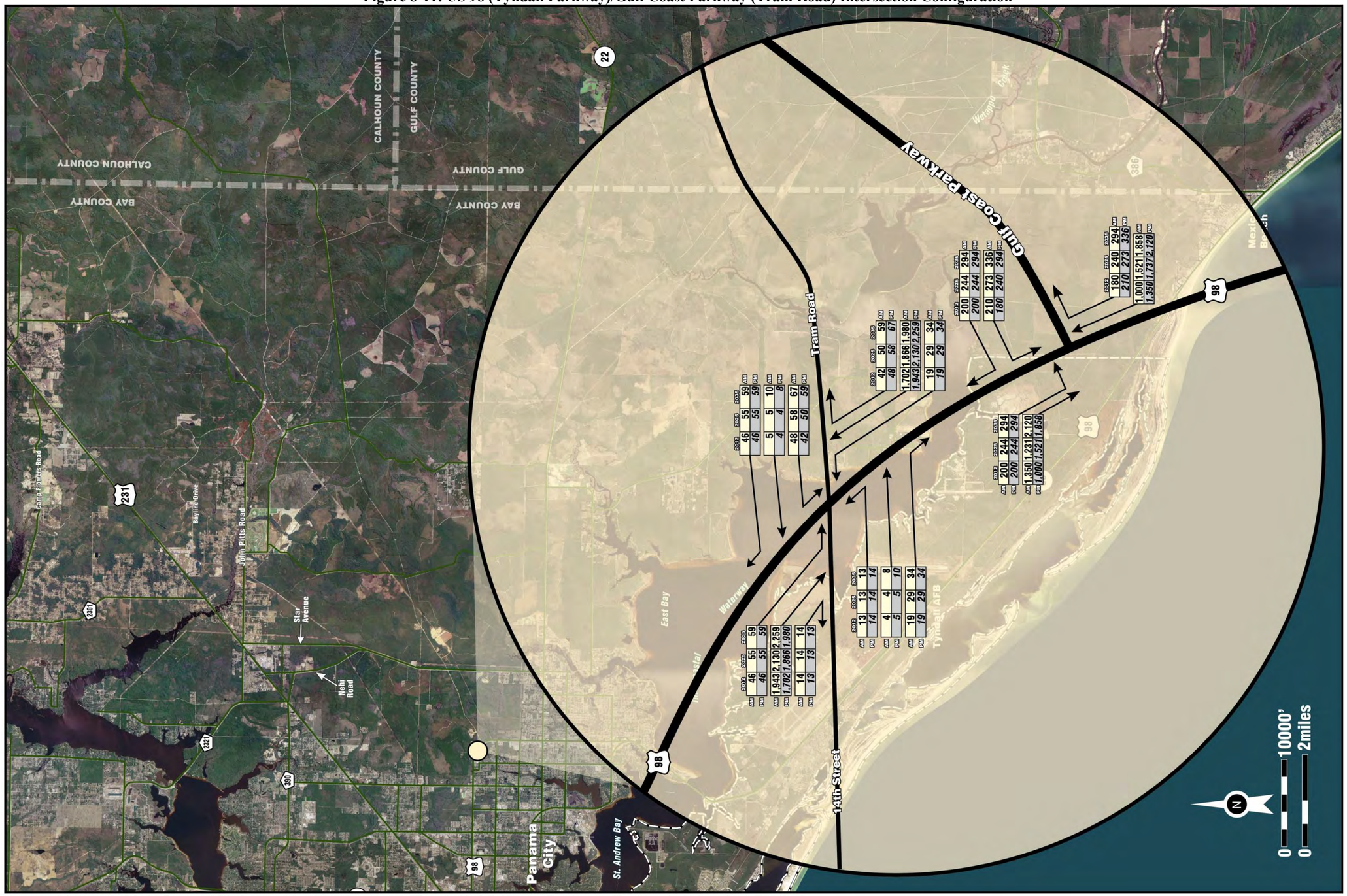
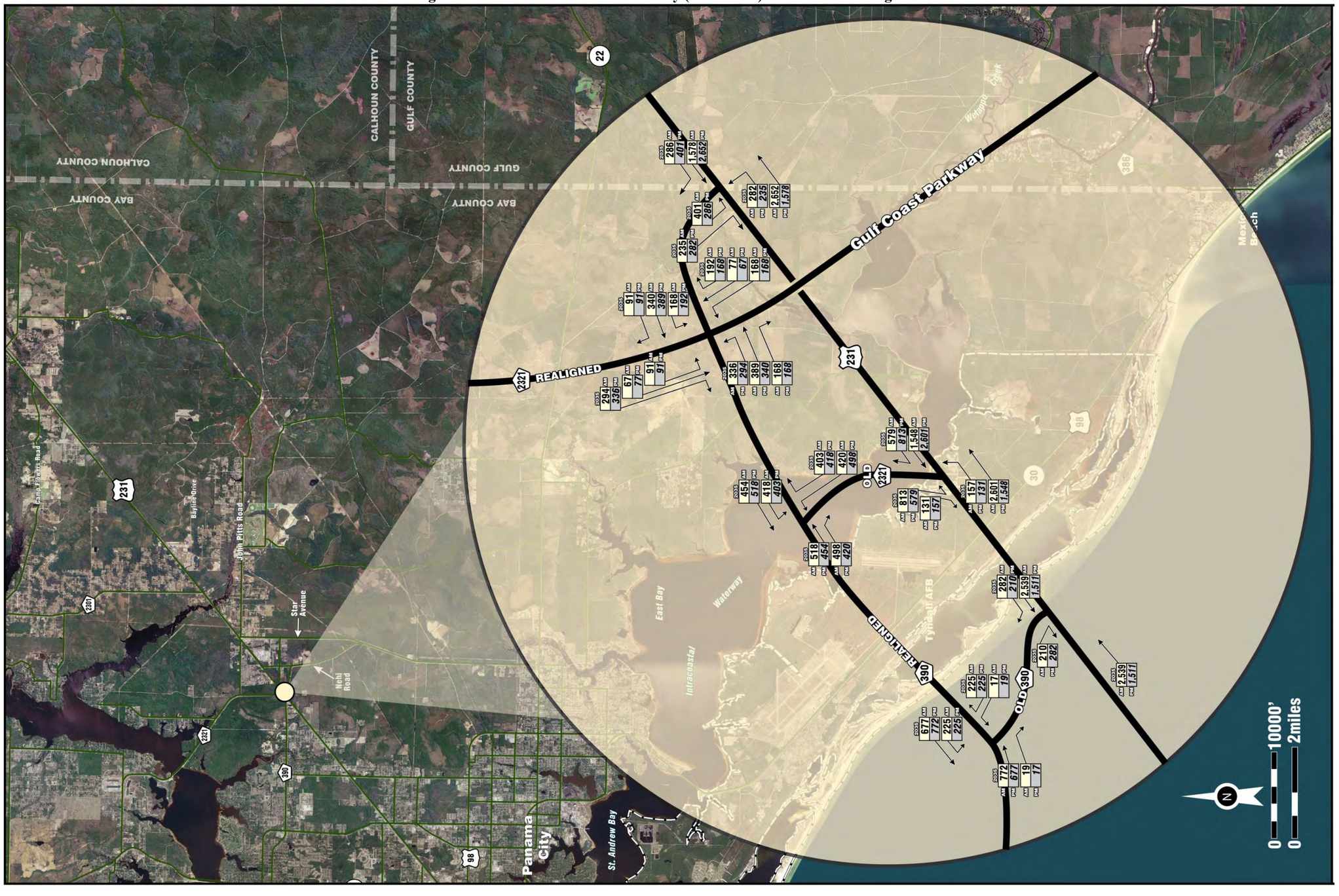


Figure 8-12: US 231/Gulf Coast Parkway (Nehi Road) Intersection Configuration



The results of the intersection analysis for the future Gulf Coast Parkway/US 231 and Gulf Coast Parkway/US 98 (Tyndall Parkway) intersections in existing year (2012) and design year (2035) are presented in **Tables 8-25** and **8-26**. The detailed analysis of the Gulf Coast Parkway @ US 231/CR 390/CR 2321 (Gulf Coast Parkway North Termini) intersection is included in the *Traffic Report*, Appendix D and the detailed analysis of the Gulf Coast Parkway @ US 98 / Tram Road (Tram Road Termini) intersection is included in the *Traffic Report*, Appendix E.

Table 8-25: Future Year LOS for US 231 @ Gulf Coast Parkway (Nehi Road)

Intersection Type 12: US 231 and Gulf Coast Parkway Segment 27		
2012 DHV	**AM LOS**	**PM LOS**
Signalized with Existing Geometry (4 lanes US 231 with Interim scenario)	C	C
Signalized with improvements (6 lanes US 231 with Interim scenario)	B	B
2035 DHV	**AM LOS**	**PM LOS**
Signalized with Existing Geometry (4 lanes US 231 with Full Buildout scenario)	**D**	C
Signalized with Existing Geometry (6 lanes US 231 with Full Buildout scenario)	A	B

Note: Bold values indicate unacceptable conditions.

The results of the 2012 scenario traffic condition analysis for US 231 and Gulf Coast Parkway indicate that the intersection LOS would operate at LOS C or better with the Interim Scenario. The 2035 scenario traffic conditions analysis indicates that US 231 and Gulf Coast Parkway with US 231 widened to 6 lanes and the full build-out intersection scenario, would operate at LOS B or better.

Table 8-26: Future Year LOS for US 98 (Tyndall Parkway) @ Gulf Coast Parkway (Tram Road)

Intersection Type 9: US 98 (Tyndall Parkway) and Gulf Coast Parkway Segment 25		
2012 DHV	**AM LOS**	**PM LOS**
Signalized with Existing Geometry (Initial Scenario)	**E**	**D**
Signalized with improvements (WB: Dual LT lane and a single RT lane with Initial scenario)	B	B
2035 DHV	**AM LOS**	**PM LOS**
Signalized with improvements (6 lanes US 98 with final scenario)	A	B

Note: Bold values indicate unacceptable conditions.

For the Interim Scenario, the existing signalized intersection of US 98 (Tyndall Parkway) and Tram Road/Gulf Coast Parkway was analyzed with only an additional northbound right turn lane on US 98. The results of the 2012 Interim Scenario traffic condition analysis indicate that US 98 (Tyndall Parkway) and Tram Road/Gulf Coast Parkway would operate with unacceptable LOS conditions during the AM peak hour under the existing intersection arrangement and number of lanes. With the Tram Road/Gulf Coast Parkway approach having dual left turn lanes and a single right turn lane, the intersection would operate at LOS B. Also, for the design year (2035), the intersection would have unacceptable LOS F conditions unless US 98 (Tyndall Parkway) is widened to six lanes. With a six-lane US 98 (Tyndall Parkway), the intersection would operate at LOS B or better.

The results of the future traffic analysis indicate that all of the proposed intersections will operate at an acceptable LOS with signalization and the proposed improvements.

8.5.8 Utilities

The No Build Alternative would have no involvement with utilities. Although much of the build alternatives are on new alignment, there are locations where the alternatives‟ alignments cross, or are parallel to, utility easements. The Build Alternatives involvement with utility easements is summarized in **Table 8-27** and shown on **Figure 8-13**).

Table 8-27: Build Alternatives' Involvement with Utility Easements

Alternatives	Other Utility Crossings (number)	Distance Parallel to Other Utility Easement (in feet)	Electrical Crossings (number)	Distance Parallel to Electrical Easement (in feet)	Oil, Water, or Gas Line Crossings (number)	Distance Parallel to Oil, Water or Gas Line Easement (in feet)	Notes
8	N/A	5,720	8	N/A	N/A	N/A	Power station adjacent to right-of-way parallel utilities 200 feet east of right-of-way
14	N/A	5,720	11	7,150	N/A	22,480	
15	N/A	5,720	7	N/A	N/A	N/A	
17	N/A	N/A	6	N/A	N/A	N/A	Power station adjacent to right-of-way; parallel utilities 200 feet east of right-of-way
19	N/A	N/A	8	20,070	1	N/A	

From **Table 8-27**, it is apparent that Alternative 14 has the most utility crossings and the most length of road right-of-way adjacent to utilities. Alternative 19 would have the second most length of road right-of-way shared with utilities and the second most utility crossings (nine). Alternatives 1 and 15 the same amount of right-of-way parallel to utilities, but Alternative 1 has one more utility crossings (eight) than Alternative 15 (seven). Alternative 17 has the least involvement with utilities, having no utility immediately adjacent and parallel to its right-of-way and the fewest number of crossings (six)/ Alternative 17 would be, along with Alternative 8, adjacent to a power substation that will have to be considered during construction.

Gulf Power Company has indicated they would consider the proposed project‟s crossings of their powerline easements as "routine". While there may be no particular problems with these crossings from the provider‟s perspective, there will be design considerations regarding how close the road should come to a power pole structure, provision of access to power substations, etc. As long as the proposed road is near grade there should be no vertical clearance issues. The only locations where the alternatives would not be near grade would at the proposed high-level bridge crossing of the ICWW and where Alternatives 8 and 17 would have a flyover structure across the Bay Line Railroad and US 231

In addition, there are areas where existing roads are incorporated into the project. In these areas existing utilities could be affected by some construction activities such as earth moving and pile driving. As a result, there may be a need to temporarily re-route utility lines or cables. At the project termini there may be the need to relocate utilities along the existing roads further back in the right-of-way to accommodate the intersection improvements. Such relocations may result in intermittent and short-term interruption of service. Prior to construction, coordination will be conducted with utility providers to minimize any disruption in service.

Table 8-13: Build Alternatives Involvement with Utility Easements

8.5.9 Railroads

The No Build Alternative would have no involvement with either the Bay Line Railroad or the Apalachicola Northern; however under the No Build Alternative those roads that would be utilized instead of the Gulf Coast Parkway would continue to have at-grade railroad crossings [US 98 (Tyndall Parkway, SR 22, Star Avenue, Nehi Avenue, etc.). Also, none of the Build Alternatives would have involvement with Apalachicola Northern Railroad which is located east of the study area. However, Build Alternatives 14, 15, and 19 would have involvement with the Bay Line Railroad where they cross the railroad tracks at grade to tie-in to US 231.

In addition, an at grade crossing will require traffic control devices be installed at these locations. Traffic control devices for railroad crossings consist primarily of signs, pavement markings, flashing light signals, and automatic gates. The type of warning device(s) to be installed depends on the type of highway, volume of vehicular traffic, volume of railroad traffic, speed of vehicular traffic, volume of pedestrian traffic, accident record, and geometrics of the crossings, among others. This is an issue that will be worked-out during the design phase of the project.

Although with only three to four trains running daily on the Bay Line railroad, the at-grade crossings should not create a substantial effect on traffic travel times, at least initially. However, the schedule of the trains vary throughout the day, with no set time, it makes it difficult for freight businesses to schedule travel to avoid waiting on trains. Further, if all the measures to stimulate economic development in the region are implemented and prove effective, the number of trains traveling the Bay Line railroad may increase. Alternately, the freight traffic utilizing the Gulf Coast Parkway could increase to the point that the conflicts with train traffic could affect delivery of goods and thereby the cost effectiveness of these alternatives in providing access to other intermodal facilities, potentially slowing economic growth.

Build Alternatives 8 and 17 would provide a flyover at US 231 that would avoid conflicts with the railroad, but will require a structure designed to meet the vertical and horizontal clearance requirements of the railroad as well as US 231. By avoiding conflicts with train traffic, Alternatives 8 and 17 would be the safer and more efficient alternatives.

Coordination with the Bay Line Railroad will be conducted during design to ensure that the Gulf Coast Parkway crossing of the railroad track meets clearances, geometrics, utilities, provisions for future tracks, and maintenance road requirements for off-track equipment. Depending on the timing of proposed track improvements, there could be potential for a conflict with the construction of the Gulf Coast Parkway.

8.6 ENVIRONMENTAL ANALYSIS

8.6.1 Social and Economic Considerations

The Gulf Coast Parkway alternatives have been evaluated for their potential impacts on the socioeconomic environment of the study area. These are summarized below.

8.6.1.1 Population

Because as much as half of the length of the Gulf Coast Parkway Build Alternatives are on new alignments, the potential to influence population growth in areas previously inaccessible has been evaluated. The first step was to project the future population for the study area and then determine the areas where the future population would most likely locate, depending on the alternative. The process for doing this is summarized in **Section 4** of the Draft EIS and is explained in greater detail in the *Indirect and Cumulative Effects Report* prepared for this project.

The Gulf Coast Parkway study area for the evaluation of social impacts encompasses a range of social environments, including rural; small communities; suburban; and urban. Due to the variety of social environments, the study area was divided into subareas with each subarea comprised of a relatively consistent social fabric. The subareas for the proposed Gulf Coast Parkway project are shown on **Figure 8-14** and are identified as: Bayou George, Panama City Incorporated, Tyndall, Mexico Beach, Wettapo, Wewahitchka, Unincorporated, and Enterprise Zones.

The future population in each of these subareas is shown in **Table 8-28** for each of the Gulf Coast Parkway Alternatives, including the No Build Alternative. According to **Table 8-28**, the population growth in the study area as a result of the Gulf Coast Parkway would exceed the growth without the Gulf Coast Parkway (the No Build) by 2,994 to 5,616 people, depending on alternative. Where that growth would occur varies also according to the alternative. But the single area expected to experience the most growth would be within the Panama City Incorporated subarea where the increase in population over the No Build ranges from 2,773 to 2,948. The second largest area for growth would be within the Enterprise Zone subarea, where the increase in population over the No Build is anticipated to range between 1,142 and 2,990.

Figure 8-14: Gulf Coast Parkway Socioeconomic Subareas

Table 8-28: Comparison of 2030 Subarea Populations for No Build and Build Alternatives

Project Areas of Potentially Affected Resource Area (PARA)	Alternatives										
	No Build	8		14		15		17		19	
	2030 Total PARA Population	2030 Total PARA Population	Difference Between No Build Population	2030 Total PARA Population	Difference Between No Build Population	2030 Total PARA Population	Difference Between No Build Population	2030 Total PARA Population	Difference Between No Build Population	2030 Total PARA Population	Difference Between No Build Population
Bayou George	1,957	2,040	83	2,040	83	2,404	447	2,065	108	2,065	108
Panama City Inc.	130,196	133,144	2,948	133,144	2,948	132,969	2,773	133,144	2,948	133,144	2,948
Mexico Beach	4,143	3,452	-691	3,452	-691	3,452	-691	3,280	-863	3,280	-863
Bay Co. Unincorporated	14,370	14,310	-60	14,444	74	14,777	407	14,444	74	13,990	-380
Wetappo	1,097	1,776	679	1,776	679	1,776	679	1,150	53	1,150	53
Wewahitchka	4,238	4,741	503	4,741	503	4,741	503	3,986	-252	3,986	-252
Gulf Co. Unincorporated	4,904	4,654	-250	4,654	-250	4,654	-250	5,142	238	5,142	238
Enterprise Zones	1,148	2,896	1,748	2,896	1,748	2,896	1,748	2,290	1,142	2,290	1,142
Totals	162,053	167,013	4,960	167,147	5,094	167,669	5,616	165,501	3,448	165,047	2,994

8.6.1.2 Social Environment

The proposed project alternatives were evaluated for the potential to affect community cohesion; community facilities and services; and low-income, minority and disadvantaged populations.

The project‟s Build Alternatives have been developed so as to not split or isolate any neighborhoods or communities. Where the alternatives follow existing CR 386, the wider typical section would increase the separation between the opposing sides of the road; however, this separation would be offset with the provision of signals and crosswalks at intersections and the provision of bicycle and sidewalk facilities along the proposed alignments.

The project‟s Build Alternatives have been developed to not impact community facilities and services. The only potential impact would be a temporary construction impact of the bridges over the ICWW and Wetappo Creek, depending on the alternative selected. Given that the ICWW would have to remain open to boat traffic, the potential impact to waterborne traffic would be mostly of a visual impact, but could involve delays due to construction activities occurring within or near the channel.

There are no low-income, minority or disadvantage populations affected by the Gulf Coast Parkway Build Alternatives. Further, this project has been developed in accordance with the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968, and in accordance with Executive Order 12898. The proposed project will not result in any disproportionate adverse impacts to any distinct minority, ethnic, elderly or handicapped groups and/or low-income households. Title VI information will be made available the public hearing.

8.6.1.3 Relocation and Displacement

The proposed project would require the acquisition of between 108 and 154 parcels, depending on the alternative. The potential for the relocation of residences and businesses was reviewed as part of the Sociocultural Effects (SCE). As stated previously, the majority of the Gulf Coast Parkway would be through rural, undeveloped land which allowed alternatives to minimize impacts to residential areas. However, where the Build Alternatives utilizes existing road alignments and the existing right-of-way is insufficient for the proposed improvements, acquisition of right-of-way from adjoining property would be necessary. In some cases, this acquisition would result in potential relocations. **Table 8-29** shows the number and type of relocations associated with each Build Alternative and **Table 8-30** provides the estimated right-of-way and relocation costs. The No Build Alternative would not require right-of-way acquisition; therefore, the No Build Alternative would have no relocations.

Table 8-29: Summary of Right-of-Way Acquisition and Relocations by Alternative

	Alternatives					
	No Build	8	14	15	17	19
Parcels Acquired						
Vacant	0	81	80	77	61	60
Residential	0	57	57	57	32	32
Commercial	0	16	17	15	15	16
Total Parcels Acquired	**0**	**154**	**154**	**149**	**108**	**108**
Relocation by Type						
Residential Owner	0	17	17	17	12	12
Residential Tenant	0	15	15	15	14	14
Business	0	3	4	3	3	4
Total Relocations	**0**	**35**	**36**	**35**	**29**	**30**

Table 8-30: Estimated Right-of-Way and Relocation Costs

Type of Cost	Alternatives					
	No Build	8	14	15	17	19
Business Relocation	$0	$150,000	$200,000	$150,000	$150,000	$200,000
Owner Relocation	$0	$527,000	$527,000	$527,000	$372,000	$372,000
Tenant Relocation	$0	$108,000	$108,000	$108,000	$100,800	$100,800
Right-of-way Acquisition	$0	$41,915,000	$45,765,000	$47,415,000	$44,077,200	$47,227,200
Total Cost	**$0**	**$42,700,000**	**$46,600,000**	**$48,350,000**	**$44,700,000**	**$47,900,000**

All of the Build Alternatives would require both residential and business relocations. Alternative 17 has the least number of relocations with 26 residential and three businesses. Alternative 19 has the next least relocations with 26 residential and four businesses. Alternative 8 and 15 have 32 residential relocations and three business relocations, while Alternative 14 would have the most displacements with 33 residential and four business relocations. The No Build Alternative would have no relocations.

This information has been documented in a Conceptual Stage Relocation Plan, which also provides data on replacement property and relocation assistance.

Comparable replacement housing for sale and rent is available in the study area. However, there may be some last resort rent supplements and last resort replacement housing payments necessary. Last resort housing payments would be used in order to place the relocates in decent, safe, and sanitary housing, if necessary. Should last resort housing be constructed, the housing would be available before the displacees are required to vacate their dwellings. There are numerous residential lots available for new construction within the study area.

In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, 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.

The FDOT provides advance notification of impending Right of Way acquisition. Before acquiring Right of Way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

No person lawfully occupying real property will be required to move without at least 90 days written notice of the intended vacation date, and no occupant of a residential property will be required to move until decent, safe and sanitary replacement housing is made available. "Made available" means that the affected person has either by himself obtained and has the right of possession of replacement housing, or that the FDOT has offered the relocate decent, safe and sanitary housing which is within his financial means and available for immediate occupancy.

At least one relocation specialist is assigned to each highway project to carry out the relocation assistance and payments program. A relocation specialist will contact each person to be relocated to determine individual needs and desires, and to provide information, answer questions, and give help in finding replacement property. Relocation services and payments are provided without regard to race, color, religion, sex, or national origin.

All tenants and owner-occupant displaces will receive an explanation regarding all options available to them, such as 1) varying methods of claiming reimbursement for moving expenses; 2) rental replacement housing, either private or publicly subsidized; 3) purchase of replacement housing; and 4) moving owner-occupied housing to another location.

Financial assistance is available to the eligible relocate to:

1) Reimburse the relocate for the actual reasonable costs of moving from homes, businesses, and farm operations acquired for a highway project.

2) Make up the difference, if any, between the amount paid for the acquired dwelling and the cost of a comparable decent, safe and sanitary dwelling available on the private market.

3) Provide reimbursement of expenses, incidental to the purchase of a replacement dwelling.

4) Make payment for eligible increased cost resulting from having to get another mortgage at a higher interest rate. Replacement housing payments, increased interest payments, and closing costs are limited to $22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed $5,250, to rent a replacement dwelling or room, or to use as down payment, including closing costs, on the purchase of a replacement dwelling.

The brochures that describe in detail the FDOT"s relocation assistance program and Right of Way acquisition program are "Your Relocation: Residential", "Your Relocation: Business, Farms and Nonprofit Organizations", "Your Relocations: Signs", and "The Real Estate Acquisition Process". These brochures are distributed at all public hearings and made available upon request to any interested persons.

8.6.1.4 Existing and Future Land Use

The Gulf Coast Parkway has the potential to affect land uses both directly and indirectly. Direct effects result from the acquisition of land not designated for transportation (such as farmland, commercial or residential) and converting it from its current usage to a transportation use. In some cases, even when the transportation improvement is a local goal, such a conversion may be inconsistent with other long-range

planning goals and policies of the local government, or regional and state planning agencies. Further, transportation projects, particularly improvements on new alignment, have the potential to influence the location and type of future development as occurs when a project makes previously isolated areas accessible. The discussion of indirect effects on land uses is provided in Section 4 of the EIS and in the *Indirect and Cumulative Effects Report* for this project.

8.6.1.5 Existing and Future Land Uses

Existing and future land uses were obtained in GIS format from Gulf and Bay counties and field verified. Existing land use is affected directly by the conversion of existing land uses to transportation use and indirectly when the newly converted transportation land use is adjacent to a land use that is incompatible with that transportation use.

Potential direct land use impacts were based on property acquisitions necessary for each alternative"s right-of-way needs. **Table 8-31** shows the acreage of the various land use types that potentially would be subject to conversion to transportation for each of the Build Alternatives. The No Build is not included as it is assumed no right-of-way acquisition would be required under the No Build.

Table 8-31: Comparison of the Conversion of Existing Land Uses to Transportation Use (in acres)

Land Uses*	Alternatives				
	8	14	15	17	19
Agricultural	729	977	1,092	698	726
Residential	53	57	52	8	12
Conservation/Preservation/Recreation	72	72	72	136	136
Commercial/ Industrial	0	17	0	0	17
Total Acres Converted to Transportation Use	854	1,123	1,216	842	891

* Since the project alternatives pass through multiple jurisdictions with varying land use categories and subcategories, to simplify the presentation of data, similar land use designations have been grouped into a generic category suitable for the land use type.

Each Build Alternative alignment was also evaluated for consistency with the land uses adjoining the alignments and the goals and policies of the comprehensive plans. Of the land use categories present within the study area only residential land uses would be inconsistent with a new major highway. Lands in the study area with a conservation land use designation are not incompatible with a new major highway because they are in a conservation subcategory known as conservation-habitation (which allows public/institutional uses, public utilities, residential uses, etc.) and are privately-owned and not being managed for conservation, recreation, or wildlife preservation.

For purposes of this evaluation, existing residential areas abutting highways that would be incorporated into the Gulf Coast Parkway alignment are not considered inconsistent. However, residential areas that currently do not abut a highway but, as a result of the project, would be adjacent to the Gulf Coast Parkway are considered indirectly impacted and the Gulf Coast Parkway would be considered inconsistent. In addition, where the Gulf Coast Parkway alignment would bisect any undeveloped area that has been designated residential, the proposed road is considered inconsistent (**Figure 8-15**). **Table 8-32** summarizes the potential indirect impacts to residential land uses.

Table 8-32: Miles of Incompatible Land Uses Adjacent to the Gulf Coast Parkway Build Alternatives

Incompatible Land Use	Alternatives				
	8	14	15	17	19
Residential	0.72	1.23	0.72	0	0.51

From **Table 8-31,** it is apparent that Alternative 17 has the least direct impacts to land use and from **Table 8-32**, it is apparent that Alternative 17 would have the least indirect involvement with incompatible land uses. Therefore, from a land use perspective, Alternative 17 provides the least negative effect on land use of all the Build alternatives.

Involvement with Conservation/Preservation Land Use

Lands having a designation of conservation/preservation land uses are not the same as lands in conservation, but are lands identified by the county in which they occur as having intrinsic value that, in accordance with the County"s policy, should not be subject to extensive development.

The No Build Alternative would have no involvement with lands identified as conservation/preservation land use, although there are segments of existing roads that travel through lands with a conservation land use designation. All of the Build Alternatives would have varying degrees of involvement with areas designated as conservation land use in the *Bay County Comprehensive Plan*[14]. Development in these areas is based on the different conservation categories. Conservation Preservation Zones (CSVP) are the most strict allowing only public utilities and infrastructure necessary to support conservation preservation uses and passive recreation. The clearing of land is prohibited, except as required by county-approved Preservation Management Plans. The Conservation Recreation Zone (CSVR) allows recreational uses. Residential and public/institutional uses may be allowed, if they are accessory to uses and structures within the zone. Clearing of land is prohibited except as required in accordance with county-approved Recreation Management, Fire Protection, and Security Management Plans. The Conservation Habitation Zone (CSVH) permits agricultural and silvicultural activities, recreation uses, public/institutional uses, and residential uses. Clearing of land is prohibited except as required in accordance with agricultural and silvicultural Best Management Practices (BMP), and as required in accordance with county-approved Fire Protection Plans and construction permits.

A comparison of the potential involvement of the Build Alternatives with conservation land uses is presented in **Table 8-33**. Please refer to **Figure 8-16** for the location of these conservation areas.

Table 8-33: Build Alternatives' Involvement with Conservation Land Uses

Alternative	Conservation Land Use* Impact Acres
No Build	0
8	72
14	72
15	72
17	136
19	136

*Bay County Comprehensive Plan Future Land Use Map (FLUM) identified as Conservation

Figure 8-15: Gulf Coast Parkway Alternatives Involvement with Incompatible Land Uses

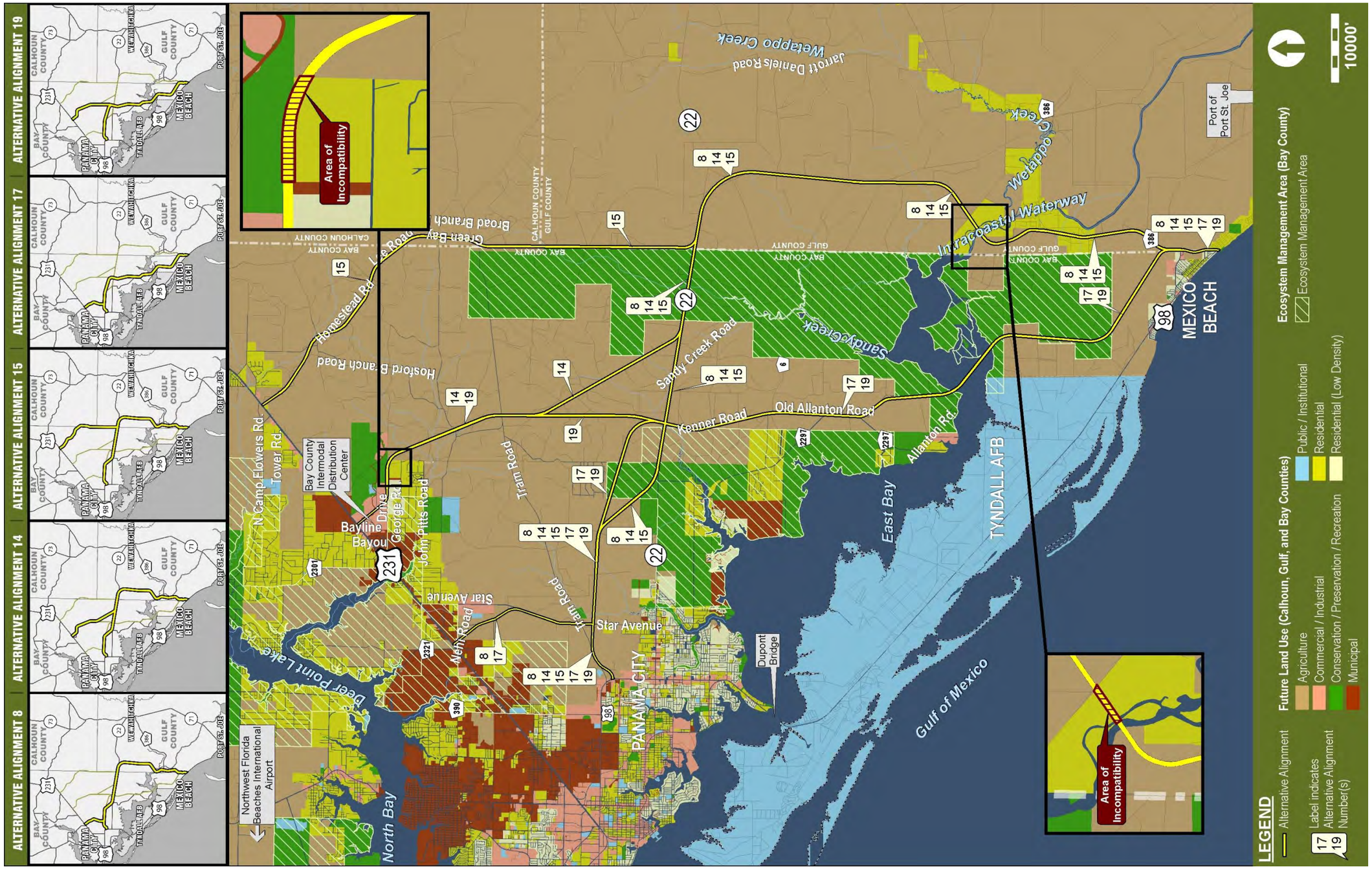
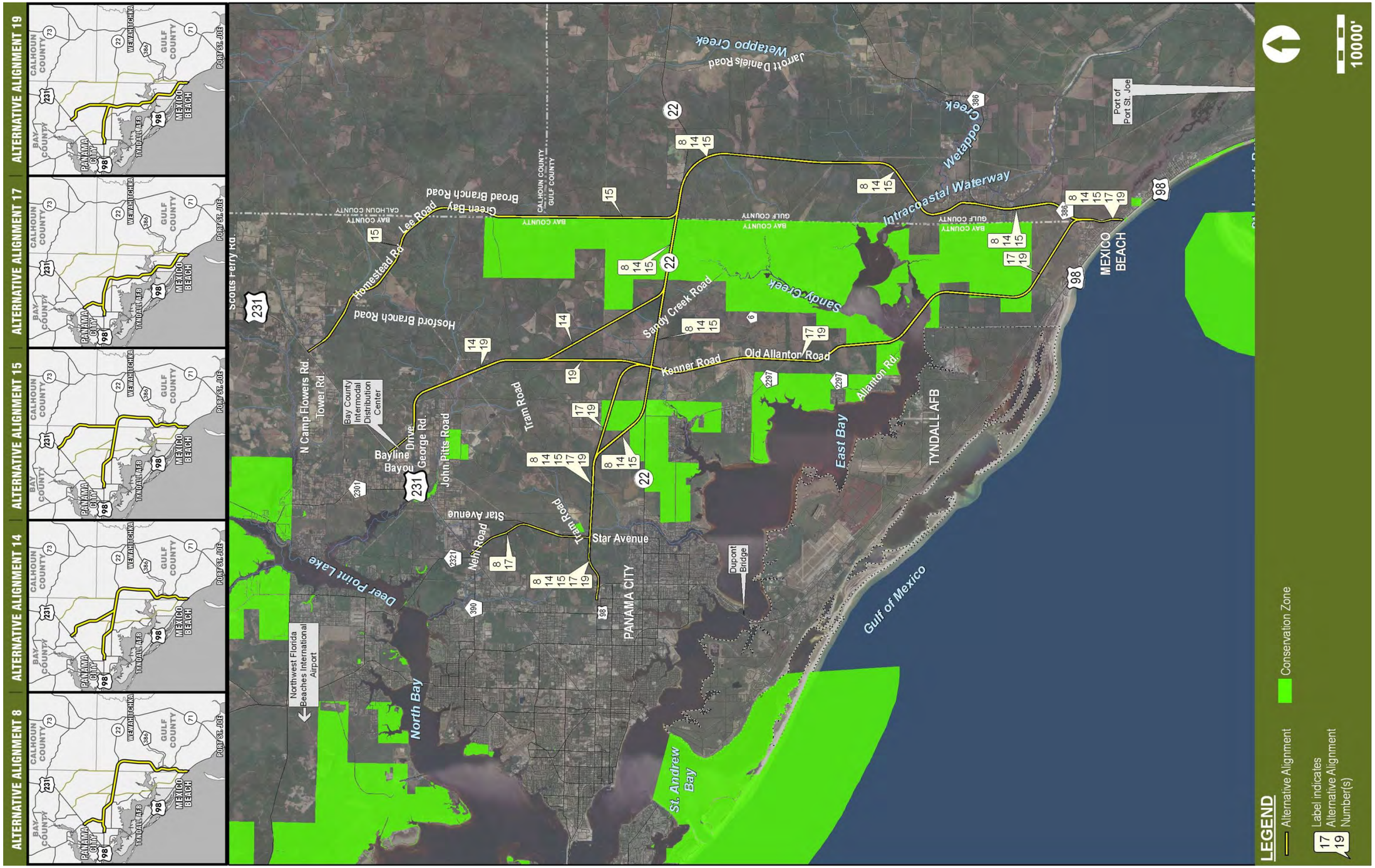


Figure 8-16: Areas Designated Bay County Conservation Zone Land Use



The Bay County Land Development Regulations specify allowable development in the Conservation Land Use categories. Allowable uses include agriculture (when BMPs are used), recreation, public/institutional, planned development unit, residential, optional sector plans, docks, piers, seawalls, public utilities, and other similar uses. The restrictions on developments on these lands are to be planned and built to minimize impacts to local significant environmental resources.

Alternatives 17 and 19 will impact more (136 acres) of the conservation land use acres than Alternatives 8, 14, and 15. As shown in **Figure 8-16**, Alternatives 17 and 19 impact most of the conservation land use acreage south of East Bay but impacts also occur approximately 1.2 miles north of SR 22. Alternatives 8, 14, and 15 impacts the majority of their conservation land use acreage along existing SR 22 and a minor amount of acreage impact occurs where the alternatives depart north of SR 22.

In addition to the Conservation land use category, Bay County has overlays to the FLUM designated Special Treatment Zones. Special Treatment Zones impose additional requirements above those required by the underlying land use categories. Unless it can be demonstrated that no locally significant natural resources exist on a parcel of land subject to development, or a developer can design and construct a development project such that locally significant natural resources are preserved, or impact minimized, the additional development restrictions apply. These restrictions include, among others, the treatment of stormwater runoff to OFW standards, or greater. Of the eight Special Treatment Zones identified in Land Development Regulations, Ecosystem Management Areas (EMA) is the zone most affected by the Gulf Coast Parkway Build Alternatives.

Since the No Build Alternative does not involve construction activities, there would be no involvement with the requirements for EMAs. However, all of the Build Alternatives have involvement with the area designated the East Bay EMA. The East Bay EMA overlays the lands designated conservation and some adjacent silvicultural lands, which accounts for the Build Alternatives‟ slightly greater involvement with the East Bay EMA than with the conservation lands. Alternatives 8, 14, and 15 would require 129 acres from the East Bay EMA and Alternatives 17 and 19 would require 157 acres. (**Figure 8-17)**

There is, however, a future Florida Forever land acquisition project in the study area. Florida Forever, Florida‟s conservation and recreation land acquisition program, currently has approximately 1.9 million acres targeted for purchase. The Florida Forever Project in the Gulf Coast Parkway study area, known as Bear Creek, is located north of SR 22 (see **Figure 8-18**). The Bear Creek Forest project is ranked number 21 on the Critical Natural Lands Projects list and has a Medium/Low Work Plan priority in the Five Year Work Plan (dated April 24, 2012). It consists of approximately 104,461 acres of mostly planted pine plantation that will require restoration efforts.

Alternatives 8 and 17 would have no involvement with the Bear Creek Forest land acquisition project. However, Alternatives 14, 15, and 19 would cross through the targeted lands (as currently conceived). However, since these lands are only listed for acquisition and remain in private ownership, there would be no involvement with conservation uses and, therefore, not subject to Section 4(f).

Figure 8-17: Bay County Ecosystem Management Area Special Treatment Zone

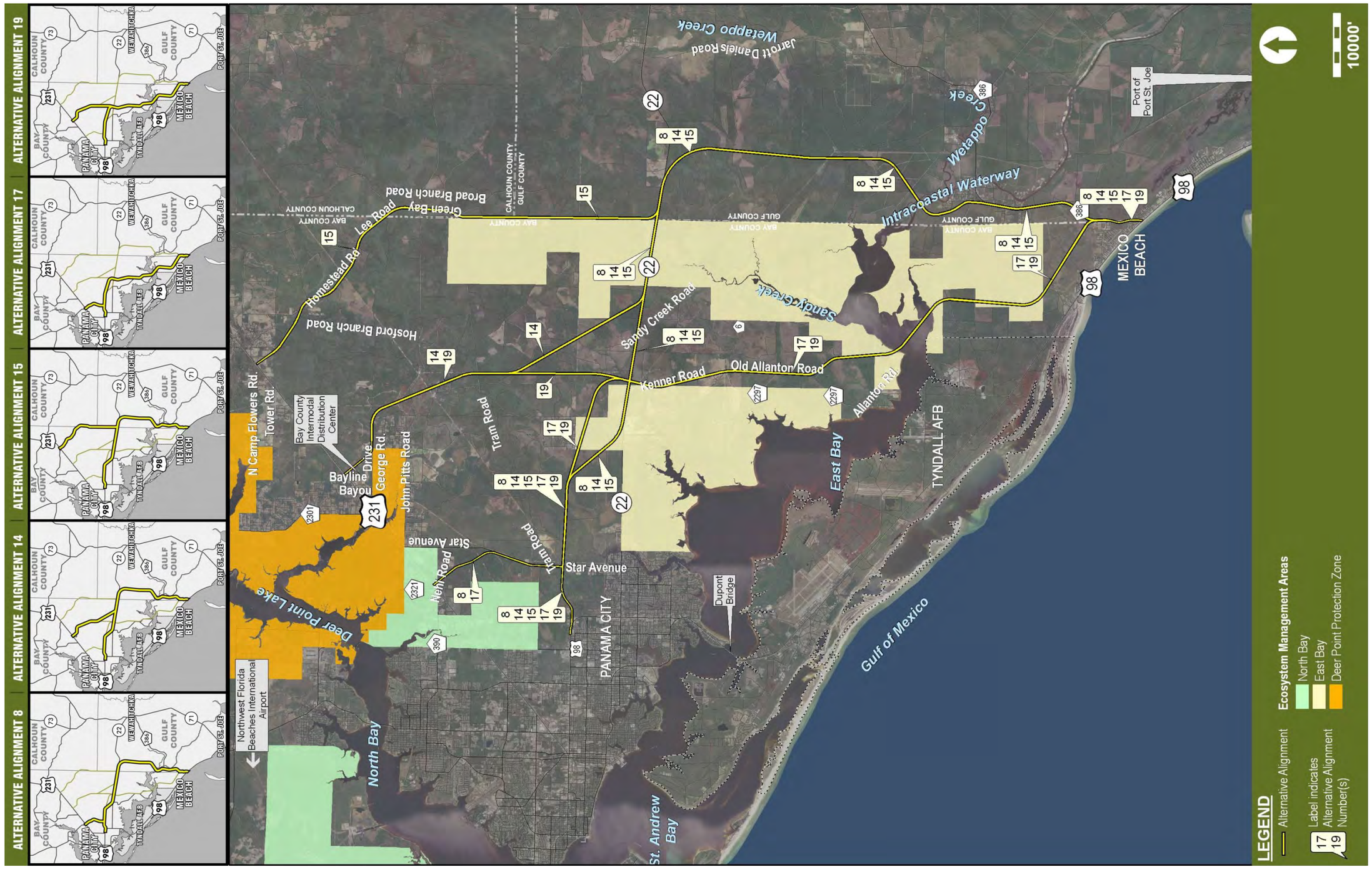


Figure 4-18: Florida Forever Bear Creek Forest Project

Consistency with Land Use Planning

Although the proposed project is not shown on Gulf County‟s adopted FLUM, or its Traffic Circulation Map, the Traffic Circulation Element of the *Gulf County Comprehensive Plan*[12] (revised 12/2009) Policy 1.2.3 states: "To improve hurricane evacuation, economic growth and reduce impacts to Tyndall AFB, Gulf County encourages the creation of a new north/south regional roadway to Interstate 10 commonly referred to as the "Gulf Coast Parkway" and "Gulf to Bay Highway". The Gulf County Planning Department has indicated that when a preferred alternative is selected, the traffic circulation map will be modified to include that portion of the Gulf Coast Parkway within Gulf County. The proposed project is also included in the FDOT‟s *Five-Year Work Program* for Gulf County. Therefore, the project is deemed to be consistent with Gulf County‟s future land use planning.

The project is not specifically identified in the *Bay County Comprehensive Plan*[14] Transportation Element; however, Objective 4.9 states that the county will "Establish and maintain LOS standards for concurrency management purposes, and for determining when roadway improvements may be warranted. The Gulf Coast Parkway would assist the County in meeting this strategy by relieving congestion on deficient roadways in the study area. Objective 4.10 states that the county will "Assist and support efforts by Florida Department of Community Affairs (FDCA) toward improving major State highway access to and exit from Bay County to provide more effective and efficient transportation movement and hurricane evacuation. The Gulf Coast Parkway would be consistent with this objective as it would improve the efficiency of the transportation network in eastern Bay County and as well as improve hurricane evacuation from the coastal areas of southeastern Bay County. Policy 4.7.1 of the *Bay County Comprehensive Plan*[14] (adopted 1999) Transportation Element states that the County will use the established Metropolitan Planning Organization (MPO) process to promote transportation improvements in Bay County. The MPO‟s, now the Bay County TPO‟s LRTP, Direction *2035-Shaping Our Future* [15] (adopted July 27, 2011) identifies the Gulf Coast Parkway in the *Cost Feasible Plan Report*[16] (January 25, 2012). It is also identified in the Bay County 2013-2017 *Transportation Improvement Program*[17] (adopted June 27, 2012, amended August 10, 2012). Therefore, the project is deemed consistent with the Bay County Comprehensive Plan.

The Bay County TPO and the counties of Gulf, Holmes and Washington became a new Regional Transportation Partnership (RTP) on September 28, 2005 by Interlocal Agreement using Chapter 163, F.S. This partnership was formed to implement regional coordination between the counties involved and to establish the regional partnership required under Section 339.2818 F.S. to be eligible for State Transportation Regional Incentive Program (TRIP) funding. The West Florida Regional Planning Council (WFRPC) serves as staff for the Bay, Gulf, Holmes, and Washington RTP. A regional network criteria and a regional transportation network map were adopted April 2006 and revised September 2007. The Gulf Coast Parkway project is shown on the Regional Transportation Network Map for the Bay, Gulf, Holmes, and Washington RTP.

Bay and Gulf Counties are under jurisdiction of different Regional Planning Council (RPC). Bay County is part of the WFRPC and Gulf County is part of the Apalachee RPC. The Gulf Coast Parkway is consistent with both of the RPC‟s goals.

One of the issues in the *Strategic Regional Policy Plan* (SRPP) *of the Apalachee RPC*[18] is to provide more travel choices. The Gulf Coast Parkway was not identified in the SRPP which was prepared in 1996. However, the Gulf Coast Parkway would provide more travel choices and accommodate bicyclists and pedestrians. This is important to ensure a wider range of access to the users of the Gulf Coast Parkway, while also improving the overall transportation system in the jurisdiction and adjacent jurisdictions.

The *Comprehensive Economic Development Strategy for the Apalachee Region of Florida*[8] published by the Apalacee RPC in 2007 notes the FDOT planning section had recently completed a long range corridor analysis to 2050 to better focus on long range planning efforts. Among the key policies utilized by the FDOT in their analysis was providing access to economically-distressed areas. Among the proposed corridor improvements identified for this policy was the link the Gulf Coast Parkway would provide between US 231 in Bay County and US 98 in Gulf County. This project was identified as key policy objective in supporting choices about future growth and development.

Two segments of the Gulf Coast Parkway are also included in the FDOT *2013-2017 Five-Year Work Program*[17].

8.6.1.6 Economic

Since one of the primary purpose and need criteria for the Gulf Coast Parkway is economic development, the project has been analyzed for its potential of improving prospects for economic development within the study area, especially for Gulf County which is part of a Rural Area of Critical Economic Concern. Because economic potential is difficult to quantify, the presentation in Section 4 of the EIS is primarily a qualitative discussion. It is even more difficult to quantify differences among the build alternatives. Therefore, the discussion presented here is limited to the impact of the conversion of land to transportation uses on tax revenues for each alternative. For a detailed discussion of all the economic issues please refer to Section 4.1.2 of the Draft EIS.

The No Build Alternative does not change the current conditions and, therefore, would have no effect on tax revenues. All of the Build Alternatives require right-of-way acquisition which would remove property from the tax rolls. However, much of this land is in agricultural use, which receives agricultural tax exemptions, reducing the revenue the counties receive from this type of land use. **Table 8-34** shows the acreage to be converted to public use in each county for each alternative.

Table 8-34: Acres of Taxable Property Converted to Public Use for Each Build Alternative

County	Alternatives				
	8	14	15	17	19
Gulf	504	509	747	33	33
Bay	352	614	360	809	858
Calhoun	0	0	109	0	0
Total	854	1,123	1,216	842	891

Alternatives 17 and 19 not only remove the least amount of land from the tax rolls they remove the least amount of land from Gulf County which is the county with the least economic resources. Further, since the project is anticipated to stimulate the local economy, the initial loss of revenue due to the conversion of taxable lands to public use, could be expected to be at least partially offset by increases in property values, conversion of agricultural lands to greater taxable uses, additional sales taxes from increased tourism, and taxes from new businesses locating to the area.

An estimate for the amount of taxable value that will be lost due to each alternative‟s conversion of private land into public right-of-way, as well as loss in taxes collected, is shown in **Table 8-35**, below:

Table 8-35: Taxable Value Lost Due to Conversion of Land to Transportation Use

Alternative	Taxable Value Lost	Taxes Lost
8	$105,574.00	$444.60
14	$97,709.70	$453.18
15	$148,612.00	$723.20
17	$93,672.50	$349.59
19	$92,818.80	$346.53

Each of the proposed alternatives will be placed mostly on large, agriculturally zoned parcels which are uninhabited, or tie-in to pre-existing roadways. Most developed areas, where land values are greater, will be avoided. Considering the limited monetary value of most of these parcels, the comparatively small amount of land needed for the roadway, the increase in taxable value of properties adjoining the new road, and the expected economic benefits the presence of the proposed project will provide, the loss in taxable value of land converted to transportation use is of little concern. This has been evidenced by Gulf County"s strongly stated preference that any alternative selected remain within Gulf County for as long as possible.

8.6.2 Mobility and Accessibility

Improvements in mobility and accessibility of a project the size and scope of the Gulf Coast Parkway must be considered from various perspectives. From a freight transport concept, a mobility improvement would provide a decrease in the cost and time it takes to travel, while at the community level a mobility improvement may be achieved with the addition of bicycle and pedestrian facilities.

8.6.2.1 Mobility

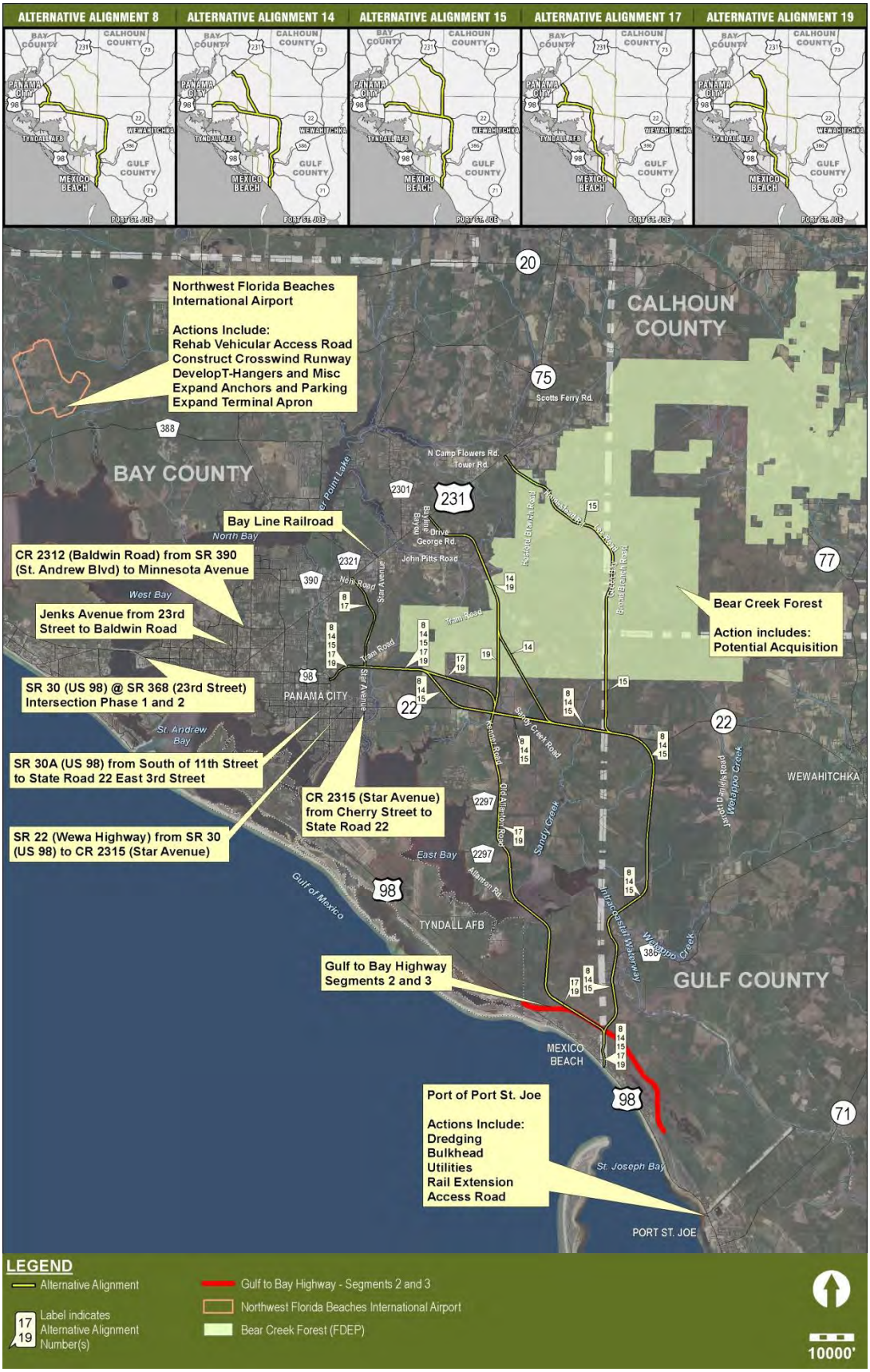
Whether it is people or goods being moved, mobility is frequently quantified in terms of the time and cost required for travel. Therefore, a transportation improvement that reduces the time it takes to travel between locations and/or the cost of the transport of goods would be seen as providing an improvement in mobility. Mobility improvements may consist of providing choices in different transportation modes (such as adding buses or rail) or improving the operation of existing modes (such as reducing congestion or increasing connectivity through new routes).

The No Build Alternative does not change the existing condition and would not provide any improvements in mobility beyond projects that are already under construction or identified in planning documents for implementation. **Table 8-36** provides a list of planned improvements in the study area (shown on **Figure 8-19**). This list includes one environmental project: Bear Creek Forest. The Bear Creek Forest Florida Forever project has been included because, if it is implemented as envisioned, it has the potential to greatly affect future development in the region and the ability to meet mobility needs.

Table 8-36: Other On-going or Proposed Governmental Actions in the Gulf Coast Parkway Study Area

Project Name	Location	Description	Responsible Agency
CR 2312 (Baldwin Road) from SR 390 (St. Andrew Blvd) to Minnesota Avenue.	Bay County	Add lanes and reconstruct	FDOT
CR 390 from SR 77 (Ohio Avenue) to SR 75 (US 231)	Bay County	Preliminary Engineering for future capacity	FDOT
SR 22 (Wewa Highway) from SR 30 (US 98) to CR 2315 (Star Avenue)	Bay County	Preliminary Engineering for future capacity	FDOT
SR 30 (US 98) @ SR 368 (23rd Street) Intersection Phase 1	Bay County	Preliminary Engineering for future capacity	FDOT
Jenks Avenue from 23 rd Street to Baldwin Road	Bay County	Widen to four lanes	FDOT
Port of Port St. Joe Access Road	Gulf County	Seaport Capacity Project	FDOT
Gulf to Bay Highway Phase 3	Bay County	New highway construction	FDOT
Gulf to Bay Highway Phase 2	Gulf County	New highway design and permitting	FDOT
SR 30A (Tyndall Parkway)	Bay County	Add sidewalk from 11th Street to SR 22	FDOT
CR 2315 *Star Avenue)	Bay County	Add sidewalk from Cherry Street to SR 22	FDOT
Port of Port St. Joe	Gulf County	Dredging Ship Channel to 35 feet	Port Authority
Port of Port St. Joe	Gulf County	Infrastructure for Manufacturing Sites	Port Authority
Port of Port St. Joe	Gulf County	Dredging 39 feet	USACE*
Port of Port St. Joe	Gulf County	Extension of bulkhead	Port Authority
Port of Port St. Joe	Gulf County	Acquisition of future growth properties	Port Authority
Port of Port St. Joe	Gulf County	Rail Extension	Port Authority
Port of Panama City	Bay County	Maintenance dredging	Port Authority
Port of Panama City	Bay County	Berth 3 Dredging	Port Authority
Port of Panama City	Bay County	Container Terminal Expansion	Port Authority
Port of Panama City	Bay County	Relocate & Expand Truck Staging	Port Authority
NWFBIA	Bay County	Rehab Vehicular Access Road	NWFBIA
NWFBIA	Bay County	Construct Crosswind Runway	NWFBIA
NWFBIA	Bay County	Develop T-Hangers and Miscellaneous	NWFBIA
NWFBIA	Bay County	Expand Anchors and Parking	NWFBIA
NWFBIA	Bay County	Expand Terminal Apron	NWFBIA
Bay Line Railroad	Bay County	Track Upgrade	Bay Line Railroad
Bear Creek Forest	Bay County Gulf County Calhoun County	Acquisition of 100,424 acres	FDEP

Figure 4-19: Other On-going or Proposed Governmental Actions



All the Build Alternatives offer mobility improvements that can be measured in terms of reduced travel times or added connectivity; although, there is variability among the Build Alternatives in providing these improvements. Connectivity can be accomplished by simply connecting to a new location or it can be achieved by increasing the choice of routes to travel to a destination. Further, it also would reduce congestion on existing routes such as US 98 (Tyndall Parkway), thus improving travel times on these routes. Providing increased opportunities to reach a destination is a benefit for those who previously found it difficult to reach that destination, but it can also be less efficient (in terms of travel time and cost) than a direct route with a limited number of intersections. However, a direct route may serve fewer users than one with multiple connections.

Therefore, the connectivity provided by the Build Alternatives was evaluated in two ways: estimate the number of connections each alternative would provide with existing network roads and determine whether or not an alternative would provide a direct connection to a planned route (A planned route is a transportation improvement project in the Bay County *2035 LRTP*.

As shown in **Table 8-37**, all Build Alternatives would provide new connections to SR 22, US 231, CR 2315, and US 98 (Tyndall Parkway). Alternatives 8 and 17 would also provide a new connection with CR 390 and CR 2321. Therefore, Alternatives 8 and 17 would have more connections to network roadways than Alternatives 14, 15, or 19. Alternative 8 and 17 are also the only alternatives with a direct connection to a planned transportation project at the intersection of US 231 and CR 2321. Therefore, Alternatives 8 and 17 perform better than Alternatives 14, 15, or 19 by providing more connections to existing roads and by connecting directly with a planned transportation project.

Table 8-37: Connectivity of the Gulf Coast Parkway Build Alternatives

	Network Roadways						
Alternative	SR 22	US 231	US 98 (Tyndall Parkway)	CR 2315 (Star Avenue)	CR 390	CR 2321	Planned Routes
8	X	X	X	X	X	X	X
14	X	X	X	X			
15	X	X	X	X			
17	X	X	X	X	X	X	X
19	X	X	X	X			

The Build Alternatives were also evaluated in the reduction in travel time to locations that are of economic importance to the area. Actual travel times to the identified destinations were established by traveling the existing routes during morning and afternoon peak-hour traffic times, using an accepted traffic engineering methodology. Once the time to travel the existing routes was established, these amounts were given a value of 1.

Travel times for each of the build alternatives were calculated and compared to the actual travel time for the existing routes. Each alternative‟s time to reach the respective destinations was then calculated as a percentage of the existing routes. **Table 8-38** shows the reduction in travel time of each alternative as a percentage of 1.

Table 8-38: Comparison of Travel Times of the Gulf Coast Parkway Alternatives

Alternative	Reduction in Travel Time to Freight Transfer Facilities	Reduction in Travel Time for Tourists to Coastal Gulf County	Improves Travel Time to NWFBIA
No Build	1.00	1.00	1.00
8	0.83	0.83	0.80
14	0.67	0.67	0.84
15	0.78	0.78	0.91
17	0.71	0.67	0.76
19	0.65	0.67	0.84

In order to determine which of the Build Alternatives performed best in providing mobility improvements, the alternatives‟ performances in each category were compared and the alternatives scored. The scores for each category were totaled to obtain a mobility performance score. The mobility performance scores were then ranked to determine how well an alternative performed in comparison with the other alternatives in terms of mobility

Table 8-39 provides the comparison of the mobility factors and the ranking of the alternatives for mobility.

Table 8-39: Comparison of Mobility Factors of the Gulf Coast Parkway Alternatives

	Reduction in Travel Time to Freight Transfer Facilities		Reduction in Travel Time for Tourists to Coastal Gulf County		Improves Travel Time to NWFBIA*		Provides New Connections to Network Roadways		Provides Connection to Future Planned Projects		Mobility Performance Score	Mobility Performance Rank
Alternative	%	Score	%	Score	%	Score	#	Score	Yes/No	Score		
No Build	1.00	6	1.00	6	1.00	6	0	6	N	6	30	6
8	0.83	5	0.83	5	0.80	2	5	1	Y	1	14	2
14	0.67	2	0.67	1	0.84	3	4	3	N	6	15	4
15	0.78	4	0.78	4	0.91	5	4	3	N	6	22	5
17	0.71	3	0.67	1	0.76	1	4	1	Y	1	7	1
19	0.65	1	0.67	1	0.84	3	5	3	N	6	14	2

From **Table 8-39**, it is apparent that of all the alternatives, Alternative 17 is the most efficient in maximizing mobility. It scores best in all categories except reduced travel time to freight transfer facilities, due to the extra leg trucks must travel to reach the Bay County IDC. Alternatives 8, 14, and 19, all have nearly the same performance scores, but for different reasons. Alternative 8 is equally as good as Alternative 17 in providing connections to the roadway network and to future planned transportation projects, but performs the worst in providing reduced travel times to freight transfer facilities and for tourists. Alternative 14 is tied with Alternatives 17 and 19 for reduction in travel times for tourists, is second in reducing travel time to freight transfer facilities, but is tied with Alternatives 15 and 19 for worst in providing a connection to future planned transportation projects. Alternative 19 is best in reducing travel time to freight transfer facilities due to the direct connection it provides to the Bay County IDC, and is tied with 14 and 17 for the best travel times for tourists. It is tied for worst with Alternatives 14 and 15 in providing connections to future planned projects. Alternative 15 scores last or next to last in all categories.

8.6.2.2 Accessibility

Accessibility is the ability to get to a destination; however, in the transportation profession there are at least two different uses for the term. There is access between the transportation system and adjacent property (which may be affected by access management measures used to control traffic flow for improved operation of the facility and the safety of pedestrians and motorists) and there is access to a desired destination (which is achieved through one or more transportation modes).

Under the No Build Alternative there would be no change in accessibility. The Build Alternatives will be designed to meet the criteria for an Access Management Class III facility which includes restrictions such as 660 feet between driveways. The use of access management measures to improve safety and enhance traffic operations under the Build Alternatives could be perceived by property owners adjoining the roadway as affecting access to their properties. This is more likely to occur in developed areas where access is currently unrestricted. None of the Build Alternatives would prevent access to properties adjacent to the roadway; although access to these properties may be changed by the placement of medians. The only notable difference among the alternatives is that Alternatives 17 and 19 would travel the shortest distance along CR 386 and, therefore would have slightly less opportunity to affect left turning movements to the adjoining properties on CR 386 north of 15th Street.

The Build Alternatives would improve accessibility in another sense. In some areas, the Build Alternatives would divert through traffic from existing roads. The reduction in congestion on those roads within developed areas would result in an improvement in accessibility. The Build Alternatives have been compared by determining the number of neighborhood areas where a reduction in traffic would improve accessibility for each alternative. In the case of St. Joe Beach, this is only accomplished in combination with the implementation of Segment 2 of the Gulf to Bay Highway. See **Table 8-40** for a summary of areas that would benefit from traffic reductions provided by the build alternatives.

Table 8-40: Gulf Coast Parkway Alternatives' Reduction in Traffic in Developed Areas

Alternative	US 98 in Mexico Beach	US 98 in St. Joe Beach (with Gulf to Bay Highway)	CR 386 in Overstreet	Residential Area in Vicinity of US 231 and Star Avenue
No Build	No	No	No	No
8	Yes	Yes	No	No
14	Yes	Yes	No	Yes
15	Yes	Yes	No	Yes
17	Yes	Yes	Yes	No
19	Yes	Yes	Yes	Yes

All Build Alternatives would divert through traffic away from Mexico Beach and, with the implementation of Segment 2 of the Gulf to Bay Highway, from St. Joe Beach, as well. Alternatives 17 and 19 would route high-speed, through traffic heading north and west away from the Overstreet community, while Alternatives 14, 15, and 19 would avoid the neighborhoods in the vicinity of US 231 and Star Avenue. From Table 8-28, it is apparent that Alternative 19 provides more benefit than the other alternatives by reducing traffic in all four neighborhoods. Alternatives 14, 15, and 17 improve traffic in three of four neighborhood areas, while Alternative 8 improves traffic in two neighborhood areas.

8.6.2.3 Non-Motorized Transportation Improvements

Although the primary purpose of the Gulf Coast Parkway is not the provision of non-motorized forms of transportation; all the Build Alternatives include the provision of bicycle and pedestrian facilities for the length of the project (see Section 4.3.1 for a description of those facilities), including a shared-use path. The inclusion of these facilities is consistent with Florida Statute 335.065 which states "Bicycle and pedestrian ways shall be given full consideration in the planning and development of transportation facilities …. Bicycle and pedestrian ways shall be established in conjunction with the construction, reconstruction, or other change of any state transportation facility". Gulf County does not have a policy regarding bicycle and pedestrian facilities other than to assess the need to accommodate pedestrian and bicycle traffic on all existing and future road construction project; however, Bay County requires newly created roads to conform to design/construction criteria in their Land Development Regulations, which specifies the installation of sidewalks and/or bikeways in the Urban Service Area when sidewalks and/or bikeways provide or complete a "link" in an existing or planned sidewalk or bikeway system.. The No Build adds no such improvements beyond those currently planned.

The addition of non-motorized means of transportation is another form of mobility improvement. While sidewalks and bicycle lanes rarely reduce travel time, they do offer an alternative mode of transport, reduce travel costs, and provide health benefits. Therefore, the proposed project will be designed and constructed in accordance with the Americans with Disabilities Act Accessibility Guidelines to ensure accessibility of pedestrians and other non-motorized populations have access to the proposed facility

8.6.3 Cultural Resources

The cultural resources section addresses the project"s effects on archaeological and historic resources, parks/recreation, and conservation lands.

8.6.3.1 Archaeological and Historic

A Cultural Resources Assessment Survey (CRAS), including background research and a field survey, have been completed in accordance with the procedures contained in 36 CFR, Part 800. **Table 8-41** lists the historic sites within the vicinity of the project of that assessment.

Table 8-41: Historic Sites within the Vicinity the Gulf Coast Parkway Build Alternatives

Site Number	Name	Site Type	Alternatives Involved	National Register of Historic Place (NRHP) Eligible	Direct Impact
8BY1348	Allanton Farmstead	Resource Group	17, 19	Eligible	No
8BY1349	1011 CR 386	Structure	8, 14, 15	Not Eligible	No
8BY1362	Kent Cemetery	Cemetery	14, 19	Not Eligible (Protected)	No
8BY1364	Kent/Majette	Archaeological Site	14, 19	Not Eligible	Yes
8BY1365	Tram Road	Linear (Resource Group)	8, 14, 15, 17, 19	Not Eligible*	Yes
8BY1386	Atlanta and St. Andrews Bay Railroad	Linear (Resource Group)	8, 14, 15, 17, 19	Not Eligible*	Yes
8BY1515	Kent/Majette Tram	Linear (Resource Group)	8, 14, 15, 17, 19	Not Eligible*	Yes
8CA212	Lloyd Hall Homestead	Archaeological Site	15	Not Eligible	Yes
8GU186	130 Post Office Lane (Overstreet)	Structure	14, 15	Not Eligible	No
8GU187	Overstreet Firetower	Structure	14, 15	Eligible	No
8GU188	280 N. Canal Drive (Overstreet)	Structure	14, 15	Not Eligible	No
8GU189	280 N. Canal Drive (Overstreet)	Structure	14, 15	Not Eligible	No
8GU190	445 Floating Bridge Road (Overstreet)	Structure	14, 15	Not Eligible	No
8GU191	3320 CR 386	Structure	8, 14, 15	Not Eligible	No
8GU192	3417 CR 386	Structure	8, 14. 15	Not Eligible	No
8GU193	Old Overstreet Church/ School	Structure	14, 15	Eligible	No

*Refers to the portion of the resource directly impacted by the proposed project alternative.

The CRAS report[24] concluded that potential involvement with a cultural resource site-listed or eligible for listing on the National Register of Historic Places (NRHP) would occur to the Allanton Farmstead (8BY1348) under Alternatives 17 and 19, and the Atlanta and St. Andrews Bay Railroad (8BY1366) under any Build Alternative. Neither Alternative would require right-of-way from the sites; however, due to the location of Allanton Farmstead (8BY1348) on the end of Allanton Point near where the proposed high-level bridge across East Bay under Alternatives 17 and 19 would start its return to grade, the project could create a potential visual impact on the setting of the Farmstead. Meetings were held with State Historic Preservation Officer (SHPO) staff to discuss potential visual effects to the Allanton Farmstead (8BY1348). In June 2012, SHPO determined the project would have no effect on significant historic properties (see Appendix J of the Draft EIS). However, they did request further consultation after a preferred alternative has been identified to address potential effects to submerged resources at the East Bay crossing. The SHPO also indicated that there is insufficient information available to determine the significance of the Kent Cemetery (8BY1362) and Kent/Majette (8BY1364). The Kent Cemetery is over 400 feet from a project alternative and will not be affected by project activities. Please note that the cemetery is protected under Florida Statute. No conclusive evidence or intact cultural deposits related to this historic town of Kent/Majette (8BY1365) were located in the project alternatives" alignments during the cultural resources field survey. This site, as it exists within the proposed alternatives, is not significant. SHPO determined that this project would have no effect to historic properties. None of the remaining alternatives, including the No-Build Alternative, have involvement with cultural resources.

The CRAS report identified four historic sites [Allanton Farmstead (8BY1348), Atlanta and St. Andrews Bay Railroad (8BY1366), Overstreet Firetower (8GU187), and Old Overstreet Church/School (8GU193)] that have been determined eligible for listing on (or listed on) the NRHP. Through the application of the Criteria of Adverse Effect, the Federal Highway Administration (FHWA), in consultation with the SHPO, determined that the proposed high level bridge crossing East Bay under Alternatives 17 and 19 did not constitute an adverse effect on the Allanton Farmstead (8BY1348), nor did the crossing of the Atlanta and St. Andrews Bay Railroad (8BY1366) by all build alternatives, constitute an adverse effect on the Atlanta

and St. Andrews Bay Railroad (8BY1366). The SHPO also requested further consultation regarding underwater historic properties when a preferred alternative is selected. In October 2012, Southeastern Archaeological Research, Inc. (SEARCH) completed a maritime archaeology desktop evaluation for this project. SEARCH‟s study area consisted of a 1,000-foot buffer at locations where the project alternatives crossed a perennial water body. Based on the results of this assessment, Alternatives 8, 14, and 15 were determined to have a low potential for submerged cultural resources. Alternatives 17 and 19 have a moderate probability due their crossing at East Bay and the history of marine traffic in the area. SEARCH concluded that if Alternative 17 or 19 were selected as the preferred alternative, a remote-sensing survey should be conducted of the corridor over East Bay. No further investigations were recommended for Alternatives 8, 14 and 15. The complete technical memorandum for the desktop assessment is available in **Appendix O.** Since Alternative 17 is being recommended as the preferred alternative, FDOT is currently conducting the underwater field investigation of the East Bay crossing.. The results of this investigation and coordination with the SHPO will be documented in the Final EIS.

8.6.3.2 Recreational/Parkland

Recreation facilities and parklands in the study area are listed in Section 4. None of the alternatives, including the No Build Alternative, would have any effect on recreation facilities or parklands. Although the Environmental Planning Screen, Environmental Screening Tool (EST) identified a canoe trail in the ICWW, and although there is nothing to prevent canoeists from paddling on the ICWW, the FDEP Office of Greenways and Trails (OGT) has confirmed there is no designated ICWW Canoe Trail in the study area. A review of the interactive map, *2008 Prioritized Multi-use and Paddling Trails Opportunity Map*[25], shows as a long-term goal a potential paddling trail along the ICWW.

The crossing of the ICWW by the Gulf Coast Parkway, whether at East Bay or at Wetappo Creek, would be on a high level bridge, therefore, the Gulf Coast Parkway would have no affect the use of the ICWW by canoeists except as another element in the visual environment, similar to the Du Pont and Overstreet bridges. There could be some disruption of boat traffic on the ICWW during construction of the bridge, but this would be coordinated with United States Coast Guard (USCG) and a notice to mariners would be made in advance of any conflicts with usage of the waterway. These conflicts, should they occur, would be short-term in duration and minimized to the extent feasible.

8.6.3.3 Section 4(f)

Since the proposed alternatives would have no involvement with any publicly owned parks, recreation areas, wildlife or waterfowl refuges nor any adverse effect on historic properties listed on or determined eligible for listing on the NRHP, no Section 4(f) evaluation is required.

8.6.4 Natural and Physical Impacts

8.6.4.1 Pedestrian and Bicycle Facilities

The only existing bicycle and pedestrian facilities in the study area are paved shoulders along US 231, US 98 and SR 22. The Bay County Comprehensive Plan Policy has two policies regarding bicycle and pedestrian ways: to work through the TPO to implement and maintain recommendation and projects set forth in the Panama City Metropolitan Organization Bicycle/Pedestrian Plan and to establish priorities for the location of bicycle/pedestrian facilities. The Gulf County Comprehensive Plan Chapter 2 Policy 1.1.1states that “The County will assess the need to accommodate pedestrian and bicycle traffic on all existing and future road construction projects” and Chapter 7 Policy 3.2 states: “The expansion of recreation and open spaces to include the expansion and development of green spaces and

trails…ultimately linking together the preservation and recreations spaces of Gulf County within the scope of financial and physical resources".

The analysis of bicycle and pedestrian facilities has been conducted in accordance with 23 United States Code (USC) 109(n) which requires any project for resurfacing, restoring, or rehabilitating any highway, other than a highway access to which is fully controlled, in which Federal funds participate shall be constructed in accordance with standards to preserve and extend the service life of highways and enhance highway safety. Therefore, the proposed bicycle/pedestrian facilities will be designed in accordance with the *Florida Bicycle Facilities Planning and Design Handbook* and the standards of the American Association of State Highway Transportation Officials. Further, the proposed project will be designed and constructed in accordance with the Americans with Disabilities Act Accessibility Guidelines to ensure accessibility of pedestrians and other non-motorized populations have access to the proposed facility.

The No Build Alternative would not provide any bicycle or pedestrian facilities beyond those currently planned. All of the Build Alternatives would provide bicycle and pedestrian facilities for both the interim and the ultimate designs for the length of the project. The type of bicycle/pedestrian facilities depends on the typical section at a particular location along the project"s alignment (refer to **Figures 8-1** through **8-4**).

The interim rural typical section includes a 12-foot wide multi-use trail along the initial two-lane roadway and the initial two-lane bridge. The interim urban typical section includes a six-foot six–inch bike lane and a five-foot sidewalk along the road. The interim bridge would provide a 10-foot shoulder and five-foot sidewalk. The ultimate rural roadway and bridge typical section would not add any additional pedestrian facilities. The ultimate urban roadway typical section provides a six-foot six-inch wide bike lane and a five-foot sidewalk in both directions and the urban bridge typical section includes a 10-foot shoulder with a 5-foot wide sidewalk on each bridge.

Table 8-42 lists those bicycle and pedestrian projects identified in the *Bay County Bicycle and Pedestrian Program* that have direct or indirect connections to the Gulf Coast Parkway Build alternatives. **Figure 8-20** shows the locations of these projects in relation to the proposed project"s alternatives.

Where the project alternatives overlap the existing paved shoulder of SR 22 (Alternatives 8, 14, 15, and 17) it would provide an improvement to the existing pedestrian/bicycle facility by providing a shared-use path offset at a distance from the roadway. The project alternatives" interaction with other existing bicycle/pedestrian facilities (the paved shoulders of US 231 and US 98) would be limited to the intersection improvements provided by the Gulf Coast Parkway intersection with those roadways.

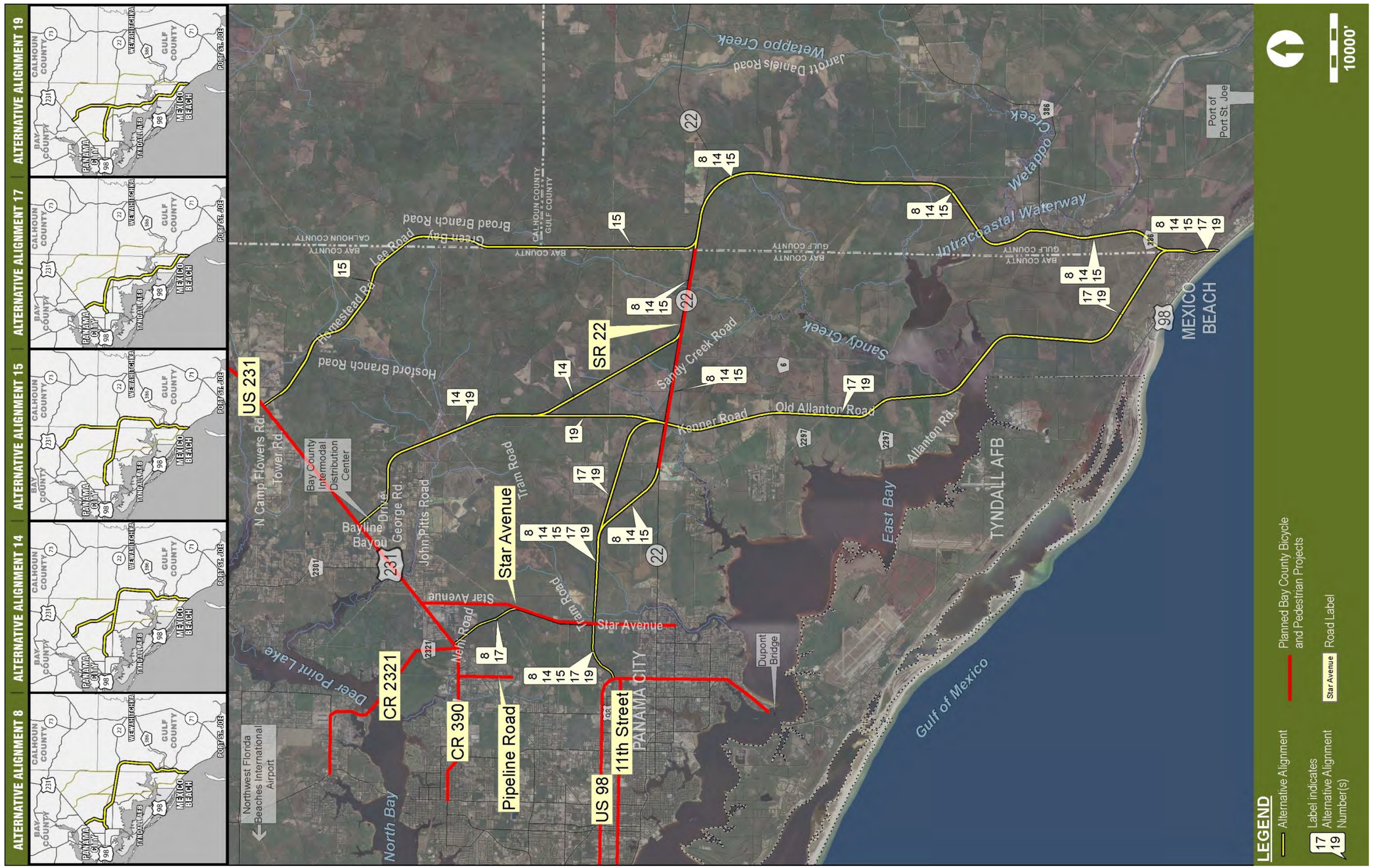
The connections created by the Gulf Coast Parkway would improve the overall connectivity of the bicycle and pedestrian system. Although all Gulf Coast Parkway alternatives would provide direct connections to two planned bicycle and pedestrian projects and indirect connections to two other planned projects, Alternative 8 and 17 provide three additional direct connections (one of which is two projects connecting at US 231) and two additional indirect connections to planned bicycle and pedestrian projects. Further, the connections provided by Alternatives 8 and 17 connect the area on the southeast side of US 231 with the area on the northwest side of US 231, whereas Alternatives 14, 15 and 19 connections to planned bicycle and pedestrian projects are located solely on the southeast side of US 231 and mostly within the Tyndall Parkway area. Therefore, Alternatives 8 and 17 provide not only more connections to planned bicycle and pedestrian projects but improve the network by connecting different areas.

Table 8-42: Connections to Planned Bay County Bicycle and Pedestrian Projects

Bay County Bicycle/ Pedestrian Project	Proposed Improvement	Alternative				
		8	14	15	17	19
US 98 from Hathaway Bridge to Du Pont Bridge	Bike Lanes & Sidewalks	X	X	X	X	X
11th Street from Beck Avenue to Tyndall Parkway	Bike Lanes	X	X	X	X	X
CR 390 from SR 77 to US 231	Bike Lanes & Sidewalks	X			X	
CR 2321 from SR 77 to US 231	Bike Lanes	X			X	
11th Street from Sherman Avenue to Tyndall Parkway	Sidewalks	X	X	X	X	X
Star Avenue from Cherry Street to United States 231	Bike Lanes & Sidewalks	X	X	X	X	X
Crayfish Trail from United States Air Force Petroleum Depot to US 231	Bike Lanes & Sidewalks	X			X	
Cato Road from US 231 to CR 390	Bike Lanes & Sidewalks	X			X	
Crayfish Trail from US 231 to Hilltop Lane	Bike Lanes & Sidewalks	X			X	
Pipeline Road from Country Lake Drive to CR 390	Bike Lanes & Sidewalks	X			X	
Bay County 2035 LRTP	**Proposed Improvement**	**Alternative**				
		8	14	15	17	19
SR 30A/US 98 (15th Street) from Transmitter Road to SR 22	Bike Lanes & Sidewalks	X	X	X	X	X
SR 75 (US 231) from CR 390 to Star Avenue	Bike Lanes & Sidewalks	X			X	
SR 75 (US 231) from Star Avenue to Jonny Lane	Bike Lanes & Sidewalks		X			X
SR 75 (US 231) from Jonny Lane to Jadewood Circle	Bike Lanes & Sidewalks			X		
CR 2315 (Star Ave) from Wewa Highway to US 231	Bike Lanes & Sidewalks	X			X	
SR 22 from Bay County Urbanized Boundary to the Gulf County Line	Bike Lanes & Sidewalks	X	X	X		

Notes: Projects in blue font do not connect directly with the facilities provided by Gulf Coast Parkway but are in the vicinity of project, and through other existing or planned improvements contribute to the overall network of pedestrian and bicycle facilities.

Figure 8-20: Build Alternatives' Relationship to Bicycle and Pedestrian Projects in the Study Area



8.6.4.2 Air Quality

An air quality evaluation, specifically an analysis of carbon monoxide (CO) concentrations, was performed in accordance with FDOT"s *PD&E Manual,* Part 2, Chapter 16. The air quality analysis is documented in the *Air Quality Analysis for the Gulf Coast Parkway, Bay County*[28] and *the Air Quality Analysis for the Gulf Coast Parkway, Gulf County*[29] (both dated 10/16/12).

Carbon Monoxide Screening

The project alternatives were subjected to the FDOT screening model, CO Florida 2012 (released April 2013) model that makes various conservative worst-case assumptions related to site conditions, meteorology, and traffic. The predicted CO concentrations for the Build conditions during the project"s opening year (2012) and design year (2035) are provided in **Table 8-43**.

Table 8-43: Predicted Worst-Case CO Concentrations at Key Intersections

Year	Condition	Intersection	Co Concentration (Parts Per Million)	
			1-Hour Averaging Time	8-Hour Averaging Time
2025	No Build	CR 386/US 98	5.0	3.0
	Build		5.0	3.0
2035	No Build	CR 386/US 98	5.1	3.1
	Build		5.4	3.3
2025	No Build	US 98/Tram Road Intersection	6.6	4.0
	Build		6.7	4.0
2035	No Build	US 98/Tram Road Intersection	6.9	4.2
	Build		7.1	4.3

All predicted CO concentrations for the opening and design years are below the 1-hour National Ambient Air Quality Standards (NAAQS) of 35 parts per million and the 8-hour NAAQS of 9 parts per million.

The project is in an area that has been designated by the United States Environmental Protection Agency (USEPA) as attainment for all the NAAQS. Therefore, the transportation conformity rule (40 CFR Part 93) does not apply.

Mobile Source Air Toxics

In addition to the criteria air pollutants for which NAAQS have been promulgated, the USEPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g. air planes), area sources (e.g. dry cleaners) and stationary sources (e.g. factories and refineries). Mobile Source Air Toxics (MSAT) are a subset of the 188 air toxics defined in the Clean Air Act (CAA). The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The USEPA is the lead Federal agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The USEPA issued a Final Rule on Controlling Emissions of

Hazardous Air Pollutants from Mobile Sources 66 Federal Regulations (FR) 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the CAA. In its rule, the USEPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and\gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, even with a predicted 64 percent increase in vehicle miles traveled (VMT) on FHWA projects, on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde are expected to be reduced by 57 to 65 percent. In addition, on-highway diesel Particulate Matter (PM) emissions are expected to be reduced by 87 percent. As a result, the USEPA concluded that no additional motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(1) that will address these issues and could make adjustments to the full 21 and/or the six primary MSATs.

According to traffic data presented in the project‟s traffic analysis report, Build Alternative Average Annual Daily Traffic (AADT) traffic volumes on the existing road segments analyzed are predicted to range from slightly lower to somewhat higher than the No Build levels, depending on the Build Alternative under consideration. In addition, some Build Alternative traffic speeds on some road segments are predicted to be higher than the No Build Alternative speeds during the same period. For the sixteen road segments analyzed in the Design Year (2035), under Alternatives 8 and 17, 87.5 percent of the road segments would be at LOS C or above while under Alternatives 14, 15, and 19, 56.3 percent of the road segments would operate at LOS C or above. In comparison, in the Design Year (2035) under the No Build Alternative only 25 percent of the road segments analyzed would operate at LOS C or better. Based on this data, the project is expected to result in reduced congestion levels.

For alternatives presented in the EIS, the amount of MSATs emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT of the Build Alternatives is expected to be only slightly higher than that for the No Build Alternative, because additional capacity increases the efficiency of the roadways, reduces congestion and increases vehicle speeds. This increase in VMT would normally lead to higher overall Build Alternative MSAT emissions along the highway corridor. However, this overall increase is expected to be somewhat offset by lower MSAT emission rates due to increased vehicle speeds since emissions of all of the priority MSATs except for diesel PM decrease as speed increases, according to the USEPA‟s MOBILE 6.2 model. The extent to which these speed-related emissions decreases will offset increases related to higher VMTs cannot be reliably projected due to the inherent deficiencies of available technical models. Because the estimated VMT of the No Build and Build Alternatives are nearly the same, it is expected there would be no appreciable difference in overall MSAT emissions between the alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of the USEPA‟s national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby air quality receptors; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher with the Build Alternative than the No Build Alternative. The localized increases in MSAT concentrations at air quality receptors along the alternative alignments would likely be most pronounced along roadway sections that would be built along CR 386 in Mexico Beach and Overstreet areas and in the vicinity of the project termini at US 98 (Tyndall Parkway) and US 231 at Nehi Road, US 231 at Bayline Drive, and US 231 at North Camp Flowers Road.

However, the magnitude and the duration of these potential increases compared to the No Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In summary, when transportation capacity improvements are made, the localized level of MSAT emissions for the Build Alternatives could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT levels will be lower in other locations when traffic shifts away from them. However, on a regional basis, USEPA‟s vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Unavailable Information for Project Specific MSAT Impact Analysis

The overall lack of available technical tools to enable prediction of the project-specific health impacts of the emission changes associated with the alternatives in this EIS limits the assessment of the potential for MSAT emission impacts due to this project to the basic analysis presented above. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality (CEQ) regulations [40 CFR 1502.22(b)] regarding incomplete or unavailable information:

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentration,, and then final determination of health impacts based on estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

- Emissions: The USEPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model – emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest =-scale projects, and cannot adequately capture emissions effects of shorter length, smaller scale projects. For PM, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, emission rates used in MOBILE 6.2 for both PM and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, the USEPA has identified problems with MOBILE 6.2 as an obstacle to quantitative analysis.

  These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects (AADT is projected to range from 140,000 to 150,000 or greater in the design year), but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations. The USEPA‟s Office of Transportation and Air Quality (OTAQ) is developing the Motor Vehicle Emission Simulator (MOVES) software model to estimate emissions for on-road and nonroad mobile sources. Although not released yet, when fully implemented, MOVES will provide a far better solution for developing projected emissions inventories applicable to MSAT analyses.

- **Dispersion:** The tools to predict how MSATs disperse are also limited. The USEPA‟s current regulatory models, CALINE 3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of CO to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program (NCHRP) is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work will also focus on identifying appropriate methods of documenting and communicating MSAT impacts in the National Environmental Policy Act (NEPA) process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project–specific MSAT background concentrations.

- **Exposure Levels and Health Effects:** Finally, even if emission levels and concentrations of MSATS could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emission rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating impacts. Consequently, the results of such assessments would not be useful to decision-makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses. Exposure to toxics has been a focus of a number of USEPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The USEPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The USEPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris. The following toxicity information for the six prioritized MSATs was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from the USEPA‟s IRIS database and represents the Agency‟s most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel PM and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by the USEPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes – particularly respiratory problems. These studies include: the South Coast Air Quality Management District‟s *Multiple Air Toxic Exposure Study – II* (2000); the Sierra Club‟s *Highway Health Hazards* (2004) that summarized 24 studies on the relationship between health and air quality; and, the Environmental Law Institutes‟ *NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles – 35 Environmental Law Review (ELR) 10273* (2005) including health studies cited therein. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable the FHWA to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based upon Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community.

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger project, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment".

8.6.4.3 Noise

Seven noise sensitive areas (NSA) were analyzed for potential impacts from the proposed project. The seven NSA include: Mexico Beach, Overstreet, Star Avenue at Tram Road, Nehi/Cherokee Heights, Tyndall Parkway, Lee Road, and US 231 Vicinity of North Camp Flowers Road. Thirty three receptors within the seven NSA are located along the project‟s five alternatives and, therefore, potentially subject to noise impacts.

Noise Prediction

Traffic Noise Model (TNM) Version 2.5, noise levels were predicted for the No Build and all Build alternatives for the existing (2011) and the future (2035) traffic conditions at 33 receptor locations representing the seven NSA: 10 receptors located in Mexico Beach, 11 receptors located in the Overstreet community, one receptor in close proximity to Star Avenue at Tram Road, seven receptors in the Nehi/Cherokee Heights area, one receptor in the Tyndall Parkway area, one receptor in the Lee Road area, and two receptors along US 231 in the vicinity of North Camp Flowers Road. The predicted noise levels are presented in **Table 8-44.**

Table 8-44: Predicted Noise Levels at Receptors Representing Sensitive Sites

Receptor Identification (ID)	Noise Abatement Criteria (NAC) Activity Category*	Alternative Involved	2011 Existing (dB(A))	2035 No-Build (dB(A))	2035 Build (dB(A))	Difference between Existing and Build (dB(A))	Is the Site Impacted?
Mexico Beach							
1	B	8,14,15,17,19	52.4	56.2	62.7	10.3	No
2	B	8,14,15,17,19	53.6	57.3	63.2	9.6	No
3	B	8,14,15,17,19	59.5	63.3	62.6	3.1	No
4	B	8,14,15,17,19	58.1	61.9	61.8	3.7	No
5	B	8,14,15,17,19	57.0	60.8	60.9	3.9	No
6	B	8,14,15,17,19	58.0	61.8	61.1	3.1	No
7	B	8,14,15,17,19	60.6	64.4	62.3	1.7	No
8	B	8,14,15,17,19	60.0	63.8	68.1	8.1	Yes
9	B	8,14,15,17,19	60.0	63.8	62.9	2.9	No
10	B	8,14,15,17,19	62.2	66.0	64.1	1.9	No
Overstreet Area							
11	B	8,14,15	51.3	55.0	61.9	10.6	No
12	B	8,14,15	53.6	57.4	57.7	4.1	No
13	B	8,14,15	51.6	55.4	55.7	4.1	No
14	B	8,14,15	56.6	60.4	60.4	3.8	No
15	B	8,14,15	53.1	56.8	57.3	4.2	No
16	B	8,14,15	54.4	58.2	58.7	4.3	No
17	B	8,14,15	54.3	58.1	58.5	4.2	No
18	B	8,14,15	51.4	55.2	55.4	4.0	No
19	B	8,14,15	51.8	55.6	55.8	4.0	No

Receptor Identification (ID)	Noise Abatement Criteria (NAC) Activity Category*	Alternative Involved	2011 Existing (dB(A))	2035 No-Build (dB(A))	2035 Build (dB(A))	Difference between Existing and Build (dB(A))	Is the Site Impacted?
20	B	8,14,15	47.8	51.6	56	8.2	No
21	B	8,14,15	46.8	50.5	54.3	7.5	No
Star Avenue at Tram Road							
22	B	8,17	42.1	45.1	48.8	6.7	No
Nehi/Cherokee Heights							
23	B	8,17	42.2	43.4	45.5	3.3	No
24	B	8,17	42.2	43.3	46.5	4.3	No
25	B	8,17	58.8	61.0	62.0	3.2	No
26	B	8,17	55.0	57.2	57.6	2.6	No
27	B	8,17	59.4	61.4	61.5	2.1	No
28	B	8,17	59.2	61.1	61.3	2.1	No
29	B	8,17	64.9	66.9	66.9	2.0	Yes
Tyndall Parkway							
30	C*	8,14,15,17,19	48.3	48.3	49.6	2.7	No
Lee Road							
31	C*	14,19	42.7	42.7	45.2	2.5	No
US 231 Vicinity of North Camp Flowers Road							
32	B	15	58.6	60.8	63.1	4.5	No
33	B	15	61.4	63.6	65.6	4.2	No

*Both Activity Categories B and C have a approach noise abatement levels criterion of 66 dB (A)

Noise Impacts

The predicted noise levels at the aforementioned receptors were evaluated against the NAC for noise impacts. Under the No Build Alternative, one receptor (29) experienced noise levels in excess of the NAC due to its proximity to US 231. Under the Build Alternatives, the NAC was exceeded at two receptors (8 and 29). Receptor 8 would be impacted by all Build Alternatives. The noise levels at receptor 29 (which meet the 66 dB(A) threshold for approaching the Category B NAC) are the same under Alternatives 8 and 17 as under the No Build Alternative since the source for noise impacts is traffic on US 231 rather than that on the Gulf Coast Parkway. None of the receptors experienced noise impacts as a result of substantial increases in noise levels (increases in excess of 15 decibels (A-weighting) (dB(A)). The predicted noise levels and impacted receptors by alternative are summarized below.

No Build Alternative, predicted noise levels would range from 43.3 dB(A) to 66.9 dB(A) in the Design Year (2035). There is one receptor (29) that would exceed the NAC.

For Alternative 8, predicted traffic noise levels would range from 45.5 dB(A) to 68.1 dB(A) in the Design Year (2035). There are two total receptors that approach or exceed the applicable levels of the NAC. These impacted receptors are 8 and 29.

For Alternative 14, predicted traffic noise levels would range from 45.2 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

For Alternative 15, predicted traffic noise levels would range from 49.6 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

For Alternative 17, predicted traffic noise levels would range from 45.5 dB(A) to 68.1 dB(A) in the Design Year (2035). There are two total receptors that approach or exceed the applicable levels of the NAC. These impacted receptors are 8 and 29.

For Alternative 19, predicted traffic noise levels would range from 45.2 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

The location of the noise sensitive receptors along with the 66 A Weighted Decibel (dB(A)) isopleths can be seen on **Figures 8-21A to 8-21G**.

Figure 8-21A: Locations of Noise Sensitive Receptors in the Mexico Beach Noise Sensitive Area

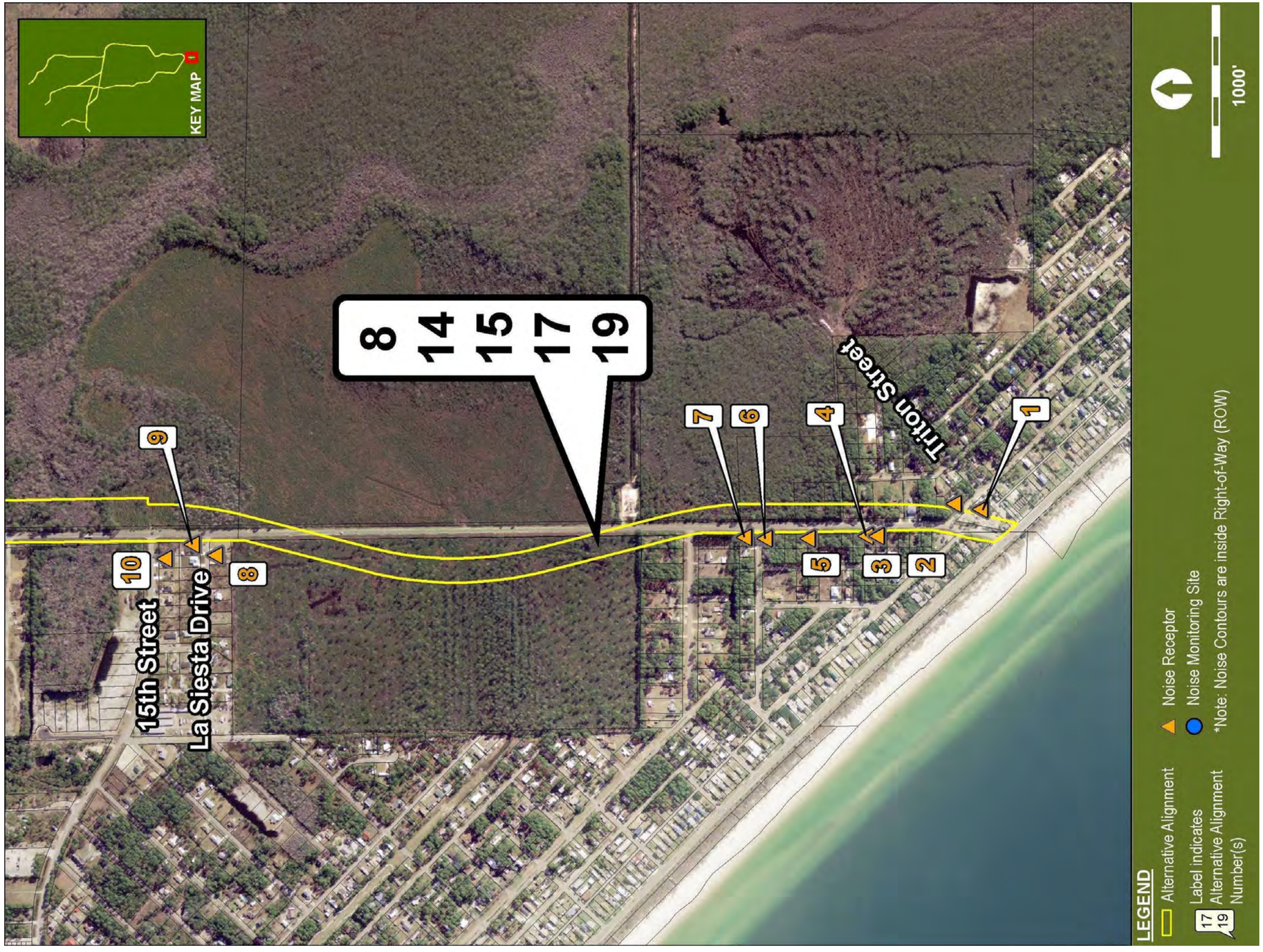


Figure 8-21B: Locations of Noise Sensitive Receptors in the Overstreet Noise Sensitive Area

Figure 8-21C: Locations of Noise Sensitive Receptors in the Star Avenue at Tram Road Noise Sensitive Area

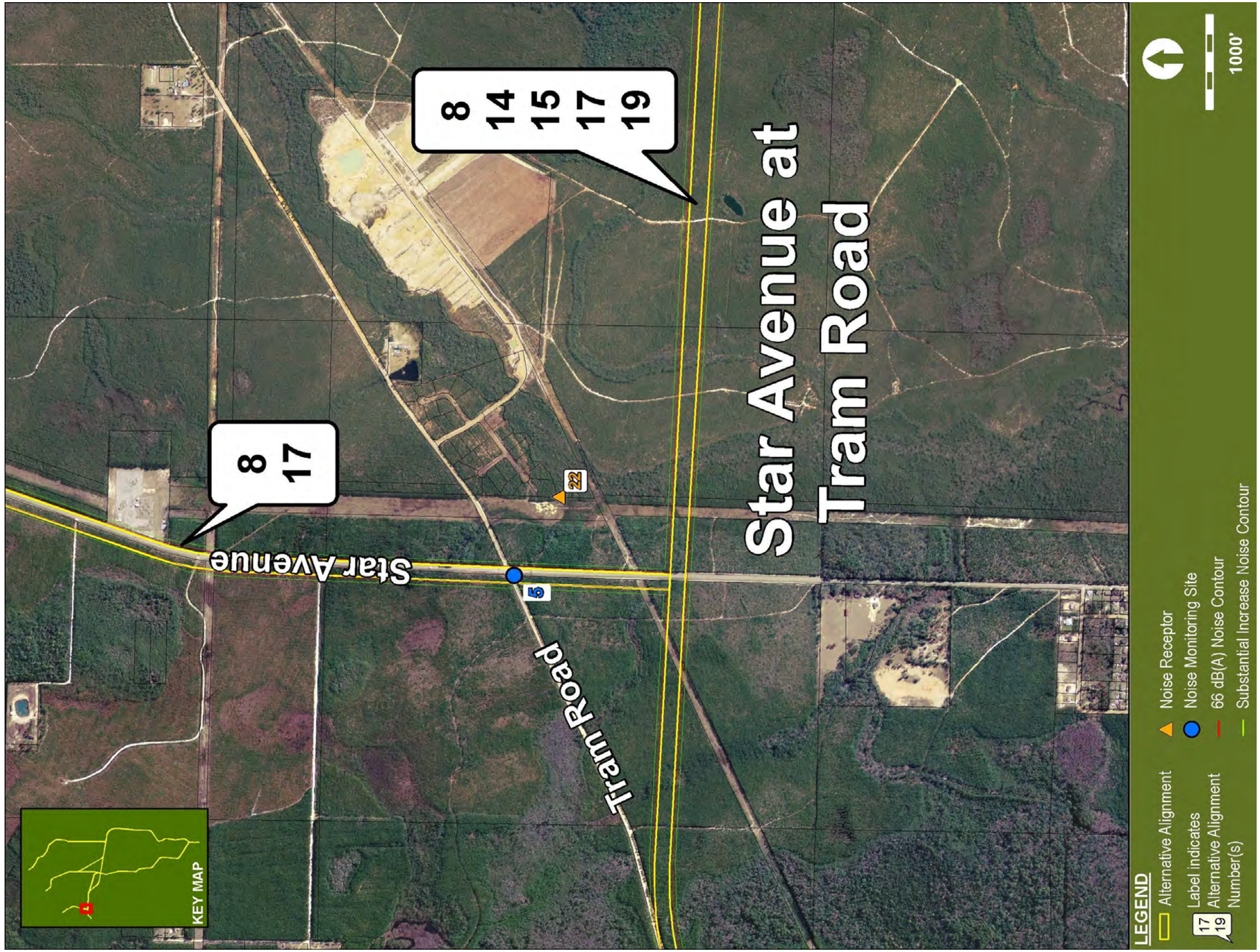


Figure 8-21D: Locations of Noise Sensitive Receptors in the Nehi/Cherokee Heights Noise Sensitive Area

Figure 8-21E: Locations of Noise Sensitive Receptors in the Tyndall Parkway Noise Sensitive Area

Figure 8-21F: Locations of Noise Sensitive Receptors in the Lee Road Noise Sensitive Area

Figure 8-21G: Locations of Noise Sensitive Receptors in the North Camp Flowers Road Noise Sensitive Area

Noise Abatement Conclusions

Noise abatement measures were considered for the two receptors predicted to experience traffic noise levels that approach or exceed the NAC. An evaluation of traffic system management techniques, alignment modifications, and property acquisition were evaluated as possible abatement measures. A noise barrier does not appear to be a reasonable solution available to abate noise at the two impacted noise sensitive sites (Receptors 8 and 29). Noise barrier feasibility could not be achieved at both of the receptors as neither met the achievement of at least a five decibel reduction at two or more impacted receptors. Based on the noise analyses performed to date, an alignment modification will be required to mitigate noise levels at 8. However, there appears to be no apparent solution available to mitigate the noise impacts at 29.

Noise and vibration effects may result from heavy equipment movement and construction activities, such as bridge pile driving and vibratory compaction of embankments. Construction noise and vibration sensitive sites adjacent to the project include: schools, churches, eye centers, medical centers, and residences. For these sensitive sites the application of the FDOT *Standard Specifications for Road and Bridge Construction* will minimize or eliminate most potential construction noise and vibration impacts. However should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in concert with the District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

Noise and vibration effects on fish from pile driving may be managed with one of the following measures,

1) Use of wood or concrete piles instead of hollow steel piles.
2) If using hollow steel piles, restrict their installation to a time of year when larval and juvenile stages of fish species with designated Essential Fish Habitat (EFH) are not present; drive piles during low tide periods when located in intertidal and shallow subtidal areas; use a vibratory hammer as much as possible; monitor peak Sound Pressure Level (SPLs) during pile driving to ensure that they do not exceed the 190 dB re 1PA threshold for injury to fish; employ measures to attenuate sound should SPLs exceed 180 dB re 1 PA (i.e. air bubble curtain system or air-filled coffer dam, use of a smaller hammer, and use of a hydraulic hammer if impact driving cannot be avoided); and drive piles when the current is reduced in areas of strong current.
3) Use of the construction technique called "ramping up" which requires the contractor to use soft-start procedures where the hammer is not used at full strength at the start of a pile driving session.

The need for these measures will be further evaluated during the project‟s design and special provisions may be added to the project‟s construction specifications, as appropriate.

A land use review will also be implemented during the design phase to identify noise sensitive receivers that may have received a building permit after October 10, 2012 but prior to the date of public knowledge (i.e., date that the environmental document is approved by FHWA). If the review identifies noise sensitive receivers that have been permitted prior to the date of public knowledge, then those noise sensitive receivers will be evaluated for traffic noise impacts and abatement considerations..

8.6.5 Wetlands

The No Build Alternative would not have any wetland impacts that can be forecasted. Wetland involvement across the Build Alternatives ranges from 35 percent (339 acres) for Alternative 8 to 55 percent (575 acres) for Alternative 19. Combined acreage (wetlands and uplands combined) ranged from 734 acres (Alternative 8) to 1,080 acres (Alternative 15) (**Table 8-45**).

Table 8-45: Total Wetland and Upland Acreage Impacted by Gulf Coast Parkway Build Alternatives

	Alternative				
Land Type	8 (Acres)	14 (Acres)	15 (Acres)	17 (Acres)	19 (Acres)
Wetlands	339.3	503.6	508.2	438.7	575.1
Uplands	394.9	478.3	571.6	288.8	366.6
Total Acreage	**734.2**	**981.9**	**1079.8**	**727.5**	**941.7**

Direct involvement with wetlands and surface waters (creeks, streams, ditches) will occur as a result of roadway construction activities in all the Build Alternatives since a significant amount of each alternative involves new alignment and right-of-way that must be acquired. Indirect wetland effects are a by-product of direct effects or impacts. Indirect wetland effects are manifested in the reasonably foreseeable future or some distance away from the location of the direct impact. Indirect effects could include future development, changes in land use, and/or changes in population dynamics that as a result, have the potential to affect natural resources. In this region of Florida, regulatory agencies commonly request that indirect effects for wetlands be assessed within 300 feet of alignment boundaries. The relative percentage of wetlands found at the alignment level is consistent with that occurring when the 300-foot buffer is considered (**Table 8-46)** and range from approximately 2,083 to approximately 3,041 acres.

Table 8-46: Total Wetland and Upland Acreage Impacted by Gulf Coast Parkway Build Alternatives with 300-Foot Buffer

	Alternative				
Land Type	8 (Acres)	14 (Acres)	15 (Acres)	17 (Acres)	19 (Acres)
Wetlands	1,064.90	1,430.60	1,506.10	1,237.20	1,541.70
Uplands	1,237.90	1,380.10	1,535.00	845.50	926.30
Total Acres	**2,302.80**	**2,810.70**	**3,041.10**	**2,082.70**	**2,468.00**

8.6.5.1 Gulf Coast Parkway Alternatives' Involvement with Wetlands

Wetlands were classified according to the FDOT"s *Florida Land Use, Cover and Forms Classification System*[21] (FLUCFCS). Section 8.6.6 describers the wetlands associated with EFH.

Direct wetland involvement per FLUCFCS type for each alternative is presented in **Table 8-47**. Wetland FLUCFCS types are grouped into low or high quality categories based on the degree of disturbance typically associated with each FLUCFCS type. Wetland involvement described in this section is based on methods described in the *Wetland Evaluation Report* (WER).

Table 8-47: Comparison of Potential Direct Wetland Involvement (per FLUCFCS Code and Wetland Quality) by Gulf Coast Parkway Build Alternatives

	Alternative 8			Alternative 14			Alternative 15			Alternative 17			Alternative 19			
FLUCFCS Type	Area Acres	No. Areas	Avg. Size	Area Acres	No. Areas	Avg. Size	Area Acres	No. Areas	Avg. Size	Area Acres	No. Areas	Avg. Size	Area Acres	No. Areas	Avg. Size	Composite/ Merged Total Acres
530	0.2	1	0.2	0.6	2	0.3	0.4	2	0.2				0.4	1	0.4	0.2
210W							1.4	1	1.4	19.8	13	1.5	19.8	13	1.5	
441W	208.6	89	2.3	279.4	113	2.5	336.5	108	3.1	238.2	86	2.8	306.4	95	3.2	208.6
443W	0.3	1	0.3	0.3	1	0.3	0.3	1	0.3							0.3
510D				1.7	3	0.6	1.0	3	0.3	1.7	9	0.2	3.7	13	0.3	
814W										1.0	1	1.0	1.0	1	1.0	
817W				16.1	12	1.3										
832W	0.4	1	0.4	5.3	4	1.3	0.4	1	0.4	0.4	1	0.4	2.7	4	0.7	0.4
Low Quality	209.5	92	2.3	303.4	135	2.2	340	116	2.9	261.1	110	2.4	334.0	127	2.6	209.5
510	7.1	15	0.5	12.8	22	0.6	7.1	16	0.4	2.3	4	0.6	5.4	8	0.7	7.1
541										50.8	1	50.8	50.8	1	50.8	
614				6.3	6	1.1	11.9	6	2.0				3.6	3	1.2	
620	18.3	7	2.6	18.3	7	2.6	19.0	7	2.7	7.1	3	2.4	7.1	3	2.4	18.3
621	3.2	4	0.8	3.6	5	0.7	3.7	5	0.7	1.2	2	0.6	1.2	2	0.6	3.2
626	13	2	6.5	13.0	2	6.5	13.0	2	6.5							13
630	81.6	75	1.1	139.6	96	1.5	106.9	93	1.2	110.4	66	1.7	167.2	83	2.0	81.6
640	0.1	4	0	0.1	3	0	0.1	3	0	5.8	3	1.9	5.8	2	2.9	0.1
642	6.5	6	1.1	6.5	6	1.1	6.5	6	1.1							6.5
High Quality	129.8	113	1.2	200.2	147	1.4	168.2	138	1.2	177.6	79	2.3	241.1	102	2.4	129.8
Total Acres Direct Impacts	**339.3**	**205**	**1.7**	**503.6**	**282**	**1.8**	**508.2**	**254**	**2.0**	**438.7**	**189**	**2.3**	**575.1**	**229**	**2.5**	**339.3**

Alternative 8

The estimated total acreage (wetlands, uplands, water, and developed land) comprising Alternative 8 is approximately 960 acres. Wetlands account for approximately 339 acres or 35% of the total acreage; of which 210 acres (or 62% of total wetland acreage) are classified as low quality (**Table 8-47**). Potentially, 205 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 1.7 acres). Among all five alternatives, this alternative had the lowest amount of wetland involvement in terms of total acres.

Approximately 99% of the low quality wetlands within the alternative consist of hydric pine plantation. High quality wetlands within this alternative include the crossing of 13 named streams and creeks: Calloway Creek, a small tributary of Calloway Creek, Cushion Creek, Cooks Bayou/Olivers Creek, Sandy Creek, Little Sandy Creek, Horseshoe Creek, Lamb Branch, Cypress Creek, and Panther Swamp. Additionally, this alternative crosses Wetappo Creek/ICWW just north of the Overstreet community.

Alternative 14

The estimated total area (wetlands, uplands, water, and developed land) comprising Alternative 14 is approximately 1,207 acres. Wetlands account for approximately 503 acres or 41% of the total acreage; of which 303 acres (or 60% of total wetland acreage) are classified as low quality (**Table 8-47**). Potentially, 282 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 1.8 acres). Approximately 279 acres (92%) of the low quality wetlands within this alternative consist of hydric pine plantation. The majority of the remaining low quality habitat (5%) is associated with hydric utility transmission corridors. Among all five alternatives, the amount of wetland involvement (total acres) for this alternative was intermediate.

Alternative 14 also involves the crossing of 17 streams and creeks (the highest number across all alternatives). These water bodies include: Callaway Creek, Cushion Creek, Beefwood Branch, Bayou George/Island Branch, Horseshoe Creek, Lamb Branch, Big Branch, Cooks Bayou/Olivers Creek, Sandy Creek, Little Sandy Creek, Bear Swamp, Cypress Creek, and Panther Swamp. Big Branch, Island Branch and Beefwood Branch are all tributaries to Bayou George, which is a tributary to Deer Point Lake – a designated Class I water body and major potable water source for Bay County. Additionally, this alternative crosses Wetappo Creek/ICWW just north of the Overstreet community.

Alternative 15

The estimated total acreage (wetlands, uplands, water, and developed land) comprising Alternative 15 is approximately 1,318 acres. Wetlands account for approximately 508 acres or 39 percent of the total acreage; of which 340 acres (or 66 percent of total wetland acreage) are classified as low quality (**Table 8-47**). Potentially, 254 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 2.1 acres per polygon). Approximately 336.9 acres (99 percent) of the low quality wetlands within the alternative consist of hydric pine plantation. Among all five alternatives, the amount of wetland involvement (total acres) for this alternative was intermediate.

Alternative 15 involves the crossing of 15 named stream and creek crossings. These systems include: Callaway Creek, Cushion Creek, Big Branch, Cooks Bayou/Olivers Creek, Gude Branch, Horseford Branch Sandy Creek, Bear Swamp, Little Sandy Creek, Horseshoe Creek, Lamb Branch, Cypress Creek, and Panther Swamp. Alternative 15 crosses Horseford Creek a tributary to the South Fork of Bear Creek along with several small unnamed tributaries to the South Fork of Bear Creek. Bear Creek is significant in that it is a tributary to Deer Point Lake, which is designated a Class I water body and is a major potable water source for Bay County. Additionally, this alternative crosses Wetappo Creek/ICWW just north of the Overstreet community. In this area, the ICWW is in the channel of Wetappo Creek.

Alternative 17

Alternative 17 is the shortest alternative with an estimated total area (wetlands, uplands, water, and developed land) comprising approximately 835 acres. Wetlands account for approximately 439 acres or 52% of the total acreage; of which 261 acres (or 59% of total wetland acreage) are classified as low quality (**Table 8-47**). Potentially, 189 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 2.3 acres). Approximately 238 acres (91%) of the low quality wetlands within the alternative consist of hydric pine plantation. The majority of the remaining low quality habitat (7%) is comprised of hydric cropland and pastureland (FLUCFCS 210W). Among all five alternative alignments, the amount of wetland involvement (total acres) for this alignment was intermediate.

Alternatives 17 and 19 both involve crossing the open water estuarine habitat of East Bay. Approximately 50.8 acres of open water embayment habitat would be crossed (FLUCFCS 541) by this alternative. Additional high quality wetlands within this alternative include five named stream and creek crossings that include: Calloway Creek and a small tributary of Calloway Creek, Cushion Creek, Cooks Bayou/Olivers Creek and two small tributaries of Cooks Bayou, Cypress Creek, Bear Swamp and Panther Swamp. Alternative 17 involves the fewest named stream and creek crossings when compared to all other alternatives.

Alternative 19

The estimated total area (wetlands, uplands, water, and developed land) comprising Alternative 19 is approximately 1,057 acres. Wetlands account for approximately 575 acres or 55% of the total acreage; of which 334 acres (or 58% of total wetland acreage) are classified as low quality (**Table 8-47**). Potentially, 229 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 2.5 acres). Approximately 306.3 acres (92%) of the low quality wetlands within the alignment consist of hydric pine plantation. The majority of the remaining low quality habitat (7%) is comprised of hydric cropland and pastureland (FLUCFCS 210W). Among all five alternatives, this alignment had the highest amount of wetland involvement in terms of total acres.

Both Alternative Alignments 17 and 19 involve crossing the open water estuarine habitat of East Bay. Approximately 50.8 acres of open water embayment habitat would be crossed (FLUCFCS 541) with this alternative. Additional high quality wetlands within this alternative include nine named stream and creek crossings that include: Beefwood Branch, Bayou George/Island Branch, Big Branch, Boggy Creek, Cooks Bayou/Olivers Creek, Cushion Creek, Cypress Creek, Bear Swamp, and Panther Swamp.

8.6.5.2 Uniform Mitigation Assessment Method (UMAM)

A UMAM analysis was performed for each FLUCFCS wetland type within each alternative alignment. The UMAM is currently used by the State of Florida to assess wetland condition as established by the Florida Administration Code (FAC), Chapter 62-345. UMAM was also accepted as the wetland assessment methodology of the Jacksonville District of the USACE via a Public Notice dated August 18, 2005. The primary purpose for UMAM is to determine the amount of compensatory mitigation required by the appropriate regulatory agency. This wetland assessment methodology has replaced the Wetland Rapid Assessment Procedure (WRAP) previously utilized.

The UMAM is a rating index that assists in evaluating the functions and values of a wetland system. It establishes a numerical score for a wetland based on various ecological or anthropogenic variables known to influence the functional value of wetlands. UMAM scores are based on the total of three categories, scored from zero (lowest) to 10 (highest), divided by the total maximum score for the variables (30). The UMAM score is expressed as a number between zero and one, with one being assigned to the highest valued/functioning wetlands. The three criteria scored are: Location and Landscape support, Water Environment, and Community Structure.

Due to the size of the area under review, the number of alternatives under consideration, and access issues concerning some private landowners, each wetland FLUCFCS polygon was not independently assessed for functional value. Instead, the UMAM was used to evaluate representative wetlands of each FLUCFCS type (per PD&E Manual) within the alternatives‟ alignments. UMAM scores were developed for these wetlands based on desktop and field assessments and observed conditions of similar wetlands within the region.

UMAM scores were derived at the FLUCFCS level and not for individual assessment areas or wetland polygons within the alternatives. As such, the resultant UMAM scores approximate mitigation needed to offset wetland impacts. More accurate UMAM scores (specific to each wetland area/polygon) will be derived during the design/permitting phase of the project. UMAM scores for the various FLUCFCS types ranged from 0.40 (443W) to 0.83 (541). Scores were lower for artificial and altered wetlands such as, but not limited to hydric pine plantations, ditches, fire suppressed titi systems, and manmade ponds. Hydric powerline and natural gas transmission corridors generally had UMAM scores that were "intermediate". These scores were driven by relatively high community structure scores (species richness) resulting from routine maintenance practices that can mimic periodic fire. However, these systems are also subject to abrupt changes in community structure from expansion projects, road installation or pipeline/powerline infrastructure maintenance. The UMAM scores for each FLUCFCS type were multiplied by the acreage of that FLUCFCS type within a proposed alternative alignment to generate the functional wetland loss per alternative alignment (**Table 8-48**). Functional loss scores are used to determine the amount of mitigation required to offset the estimated functional loss of the impacted wetlands.

Potential functional loss based on UMAM scores for the five alternatives ranged between 203.1 (Alternative 8) to 348.7 (Alternative 19). The functional loss scores tended to correspond with the wetland involvement acreages identified in **Table 8-48**. For example, Alternative 19 had the highest wetland involvement (575.1 acres) and also the highest functional loss score (348.7). Likewise, Alternative 8 had the lowest amount of wetland involvement (339.1 acres) and the lowest functional loss score (203.1). Alternatives 14, 15, and 17 also showed a corresponding decrease in functional loss with decreasing amounts of wetland involvement. These results suggest that the ratio of high quality to low quality wetlands is relatively consistent across all the alternatives. However, this general assessment assumes that all impacts will result in direct or complete loss of wetlands where in the case of a potential bridge crossing across East Bay (Alternatives 17 and 19), the impacts may not result in direct or complete loss of wetlands. Wetland-specific and project specific UMAM assessments will be required during the permitting/design phase of this project.

In addition to direct impacts to wetlands, the project could have indirect effects. Examples of potential indirect effects associated with this project could include water quality degradation from stormwater runoff or roadway spills, changes in hydrology (alteration of hydroperiods due to more impervious surfaces), edge effect impacts from filling wetlands, habitat fragmentation and potential changes in wildlife utilization, increased constraints on implementing prescribed burning management plans, and creation of a conduit/corridor (roadway) for exotic/invasive species range expansion.

In this region of Florida, the regulatory agencies require an assessment of indirect effects within 300 feet of an alternative‟s boundaries. A conservative approach was taken in identifying the amount of indirect effects the project would have on wetlands by including the total wetland area within the 300-foot buffer area of each alternative (**Table 8-49**). Not surprisingly, the potential indirect wetland effects follow the same pattern that was found for potential direct effects. Alternative 8 had the least amount of indirect wetland involvement (1,067.1 acres) and Alternative 19 (1,543.8 acres) had the most.

As previously noted, UMAM functional loss scores tended to correspond with wetland involvement acreages, suggesting that the ratio of high quality to low quality wetlands is relatively constant across all the alternatives. When functional loss scores were applied to indirect wetland involvement (**Table 8-50)**, the same trend existed.

Table 8-48: UMAM Functional Loss Values per Wetland FLUCFCS Type for Gulf Coast Parkway Build Alternatives

FLUCFCS	Average UMAM Score	Alternative 8		Alternative 14		Alternative 15		Alternative 17		Alternative 19	
		Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss
530	0.43			0.6	0.3	0.4	0.2			0.4	0.2
210W	0.47					1.4	0.7	19.8	9.3	19.8	9.3
441W	0.56	208.6	116.8	279.4	156.5	336.5	188.4	238.2	133.4	306.4	171.6
443W	0.40	0.3	0.1	0.3	0.1	0.3	0.1				
510D	0.47			1.7	0.8	1.0	0.5	1.7	0.8	3.7	1.7
814W	0.43							1.0	0.4	1.0	0.4
817W	0.67			16.1	10.8						
832W	0.67	0.4	0.3	5.3	3.6	0.4	0.3	0.4	0.3	2.7	1.8
510	0.77	7.1	5.5	12.8	9.9	7.1	5.5	2.3	1.8	5.4	4.2
541	0.83							50.8	42.2	50.8	42.2
614	0.53			6.3	3.3	11.9	6.3			3.6	1.9
620	0.73	18.3	13.4	18.3	13.4	19.0	13.9	7.1	5.2	7.1	5.2
621	0.70	3.2	2.2	3.6	2.5	3.7	2.6	1.2	0.8	1.2	0.8
626	0.63	13.0	8.2	13.0	8.2	13.0	8.2				
630	0.63	81.6	51.4	139.6	87.9	106.9	67.3	110.4	69.6	167.2	105.3
640	0.70	0.1	0.1	0.1	0.1	0.1	0.1	5.8	4.1	5.8	4.1
642	0.80	6.5	5.2	6.5	5.2	6.5	5.2				
Direct Totals		**339.2**	**339.1**	**203.1**	**503.6**	**302.5**	**508.2**	**299.2**	**438.7**	**267.8**	**575.1**

Table 8-49: Potential Indirect Wetland Involvement by Alternative

FLUCFCS Type	Alternative 8			Alternative 14			Alternative 15			Alternative 17			Alternative 19		
	Area Acres	No. of Areas	Ave. Size	Area Acres	No. of Areas	Ave. Size	Area Acres	No. of Areas	Ave. Size	Area Acres	No. of Areas	Ave. Size	Area Acres	No. of Areas	Ave. Size
210W							5.1	1	5.1	54.5	15	3.6	54.5	15	3.6
441W	630.1	141	4.5	827.6	155	5.3	978.9	173	5.7	664.5	124	5.4	792.6	128	6.2
443W	2.7	1	2.7	2.7	1	2.7	2.7	1	2.7						
510D	0.2	1	0.2	2.1	4	0.5	2.7	9	0.3	4.4	9	0.5	7.3	13	0.6
524	0.4	1	0.4	0.4	1	0.4	0.4	1	0.4	0.4	1	0.4	0.4	1	0.4
530	0.6	7	0.1	0.6	7	0.1	1.2	10	0.1	0.2	3	0.1	0.2	3	0.1
817W													0.5	1	0.5
832W	3.6	11	0.3	21.3	14	1.5	1.3	4	0.3	3.8	10	0.4	41.9	18	2.3
Low Quality	637.6	162	3.9	854.7	182	4.7	992.3	199	5.0	727.8	162	4.5	897.4	179	5
510	20.3	20	1.0	33.3	28	1.2	20.2	21	1.0	7.6	6	1.3	16.7	10	1.7
541										120.9	1	120.9	120.9	1	120.9
614				19.8	8	2.5	15.9	15	1.1	1.7	1		17.4	7	2.5
620	58.1	11	5.3	59.3	12	4.9	58.6	11	5.3	17.0	8	2.1	18.3	9	2.0
621	3.4	6	0.6	6.6	10	0.7	4.9	7	0.7	4.2	6	0.7	4.9	6	0.8
626	33.1	3	11.0	33.1	3	11.0	33.1	3	11.0						
630	293.3	145	2.0	405.5	161	2.5	362.8	160	2.3	342.1	125	2.8	451.0	138	3.3
640	3.5	7	0.5	2.7	5	0.5	2.7	5	0.5	15.2	4	3.8	14.4	2	7.2
641										0.1	1	0.1	0.1	1	0.1
642	15.6	6	2.6	15.6	6	2.6	15.6	6	2.6	0.6	3	0.2	0.6	3	0.2
High Quality	427.3	198	2.2	575.9	233	2.5	513.8	228	2.3	509.4	155	3.3	644.3	177	3.7
Total Indirect Wetland Acres	**1,064.9**	**360**	**3.0**	**1,430.6**	**415**	**3.5**	**1,506.1**	**427**	**3.5**	**1,237.2**	**317**	**3.9**	**1,541.7**	**356**	**4.3**

Table 8-50: Indirect Involvement and Potential Functional Loss per FLUCFCS Wetland Type for Build Alternatives

FLUCFCS	Average UMAM Score	Alternative 8		Alternative 14		Alternative 15		Alternative 17		Alternative 19	
		Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss
210W	0.47					5.1	2.4	54.5	25.6	54.5	25.6
441W	0.56	630.1	352.9	827.6	463.5	978.9	548.2	664.5	372.1	792.6	443.9
443W	0.4	2.7	1.1	2.7	1.1	2.7	1.1				
510D	0.47	0.2	0.1	2.1	1.0	2.7	1.3	4.4	2.1	7.3	3.4
524	0.63	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3
530	0.43	0.6	0.3	0.6	0.3	1.2	0.5	0.2	0.1	0.2	0.1
817W	0.67									0.5	0.3
832W	0.67	3.6	2.4	21.3	14.3	1.3	0.9	3.8	2.5	41.9	28.1
510	0.77	20.3	15.6	33.3	25.6	20.2	15.6	7.6	5.9	16.7	12.9
541	0.83							120.9	100.3	120.9	100.3
614	0.53			19.8	10.5	15.9	8.4	1.7	0.9	17.4	9.2
620	0.73	58.1	42.4	59.3	43.3	58.6	42.8	17.0	12.4	18.3	13.4
621	0.70	3.4	2.4	6.6	4.6	4.9	3.4	4.2	2.9	4.9	3.4
626	0.63	33.1	20.9	33.1	20.9	33.1	20.9				
630	0.63	293.3	184.8	405.5	255.5	362.8	228.6	342.1	215.5	451	284.1
640	0.70	3.5	2.5	2.7	1.9	2.7	1.9	15.2	10.6	14.4	10.1
641	0.73							0.1	0.1	0.1	0.1
642	0.80	15.6	12.5	15.6	12.5	15.6	12.5	0.6	0.5	0.6	0.5
Indirect Totals		**1,064.9**	**637.9**	**1,430.6**	**855.0**	**1,506.1**	**888.5**	**1,237.2**	**751.9**	**1,541.7**	**935.6**

8.6.5.3 Avoidance and Minimization

Avoidance and minimization of potential wetland and surface water involvement was central to both corridor and alternative development. Direct involvement with wetlands and surface waters (creeks, streams, ditches) will occur as a result of roadway construction activities. Recognizing this, efforts have been made throughout the PD&E process via desktop analyses and subsequent field surveys to identify routes that may result in fewer wetland impacts – especially those potentially involving higher quality wetlands. During the project design phase, jurisdictional wetlands will be field-delineated resulting in a more detailed assessment of wetland involvement (quantity and quality) for the Preferred Alternative. These detailed field assessments may facilitate further reductions in potential wetland involvement through minor shifts of the Preferred Alternative, if practicable. Further temporary direct and indirect wetland impacts will be minimized through compliance with FDOT *Standard Specifications for Road and Bridge Construction*[44], and utilization of BMP at wetland, bay, and stream crossings (especially East Bay and Wetappo Creek) during construction.

8.6.5.4 Mitigation and Commitments

Mitigation will be required for direct and indirect wetland impacts. At this point in project development, FDOT is not prepared to state definitely how impacts to wetlands will be mitigated due to the varying types and locations of resources that could be impacted. It is unknown as to the degree, type, or location of mitigation that will be required until permitting requirements for the Preferred Alternative are evaluated. However, wetland impacts which result from the construction of this project will be mitigated pursuant to Section 373.4137, Florida Statutes (FS) to satisfy all mitigation requirements of Part IV. Chapter 373, FS and 33 U.S.C. s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements. As mitigation methods pursuant to Section 373.4137, FS have been approved by the permitting agencies as an accepted mitigation process, the following discussions are provided to illustrate that at a conceptual mitigation level all alternatives for the Gulf Coast Parkway project have an acceptable and available means for mitigating their wetland impacts.

A critical aspect of securing wetland mitigation concerns the amount, type, and timing of wetland impacts. Wetland involvement associated with the Gulf Coast Parkway project is contained within the St. Andrews-St. Joseph Bays watershed (hydrologic unit = 03140101; "subject watershed"). At this stage of the project, i.e., PD&E level, potential wetland involvement has been estimated based upon desktop analyses and field reconnaissance/assessments (UMAM functional loss scores ranged between 203 and 349). As mentioned above, several mitigation options are currently available to FDOT. According to data housed and maintained by the USACE Regulatory In-lieu fee and Bank Information Tracking System (http://geo.usace.army.mil/ribits/index.html; accessed March 9, 2012) and the NWFWMD Wetland Programs websites (http://www.nwfwmdwetlands. com/index.php?Page=11; accessed March 9, 2012), it appears that four existing private mitigation banks (Breakfast Point, Devils Swamp, Sweetwater, Nokuse) and seven NWFWMD/umbrella bank sites (Sandhill Lakes, Wards Creek, Wards Creek West, Cat Creek, Devil"s Hole, Point Washington, Lynn Haven,) have service areas that include the subject watershed. In addition, one proposed private mitigation bank (Bear Creek) includes the subject watershed in its service area. As of March 9, 2012, the 11 existing mitigation banks/sites identified above collectively have approximately 600 palustrine wetland credits currently available. None of these existing banks/sites appear to provide estuarine credits.

It is important to recognize the temporal nature of mitigation credits and how inventories are affected by demand. While the availability of credits "today" is noteworthy, it is unclear as to the actual time they will be needed for this project. It is possible that credits available today from existing mitigation banks and sites may still be available at the time needed - the opposite situation is also possible for some or all of the banks and mitigation sites active "today". However, new banks may come on line between now and the time credits are actually needed (design and permitting phase) for this project. Given the high percentage of undeveloped land in this part of Florida, it is also clear that numerous opportunities for future mitigation sites exist. Finally and in the event

that this project results in impacts to estuarine wetlands and estuarine credits are not available, available out-of-kind credits may be utilized for such wetlands per regulatory agency approval.

8.6.6 Essential Fish Habitat

Coastal and marine environments in the Gulf Coast Parkway study area include the eastern section of East Bay and creeks, swamps, and bayous that contain salt marsh habitats or that empty into estuarine habitats in East Bay. These include Sandy Creek, California Swamp, Laird Bayou, Boggy Creek, Callaway Creek, and other smaller creeks, swamps, and bayous that are used by managed fish species and their prey. The National Marine Fisheries Service (NMFS), during their field review of the study area, found EFH for postlarval penaeid shrimp; post larval/juvenile, subadult, and adult red drum; juvenile Spanish and king mackerel; juvenile and adult gray snapper; and juvenile gag grouper. In addition, the NMFS expressed concern about the project‟s potential impact on maintenance of the area‟s natural hydrology and freshwater inflow to the estuarine environment and the effects of increased traffic in the area, especially automobile associated pollutants carried by stormwater runoff from the road‟s impervious surface.

An *EFH Assessment Report* has been prepared and consultation with the NMFS is on-going in accordance with the **Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)**. The EFH Assessment has determined that the Build Alternatives would have involvement with EFH and that there is potential for adverse effects to EFH. All of the Build Alternatives surveyed appear to have some potential direct effects on EFH (emergent marsh, bivalves, or marine benthic sediments). For further information refer to the *Gulf Coast Parkway EFH Assessment Report* completed for the project.

8.6.6.1 Alternatives Involvement with EFH

Figure 8-22 shows Alternatives 17 and 19 involvement with EFH in East Bay and **Figure 8-23** shows the involvement of Alternatives 8, 14, and 15 with EFH in the Wetappo Creek/ICWW. Descriptions of EFH in these locations is provided in the *Gulf Coast Parkway EFH Assessment Report* and Section 4 of the EIS.

Figure 8-22: EFH Locations Associated with Alternative 17 and 19

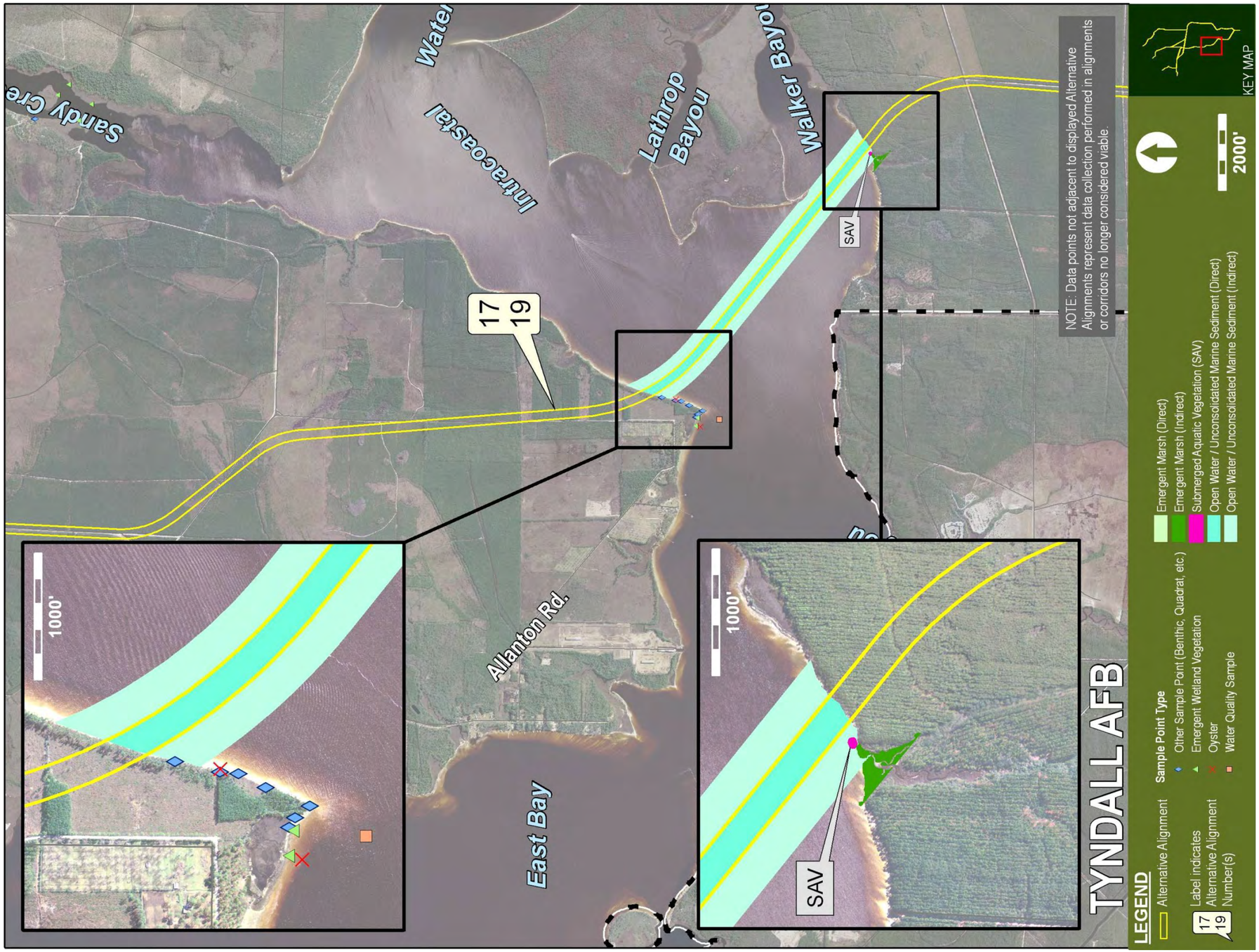
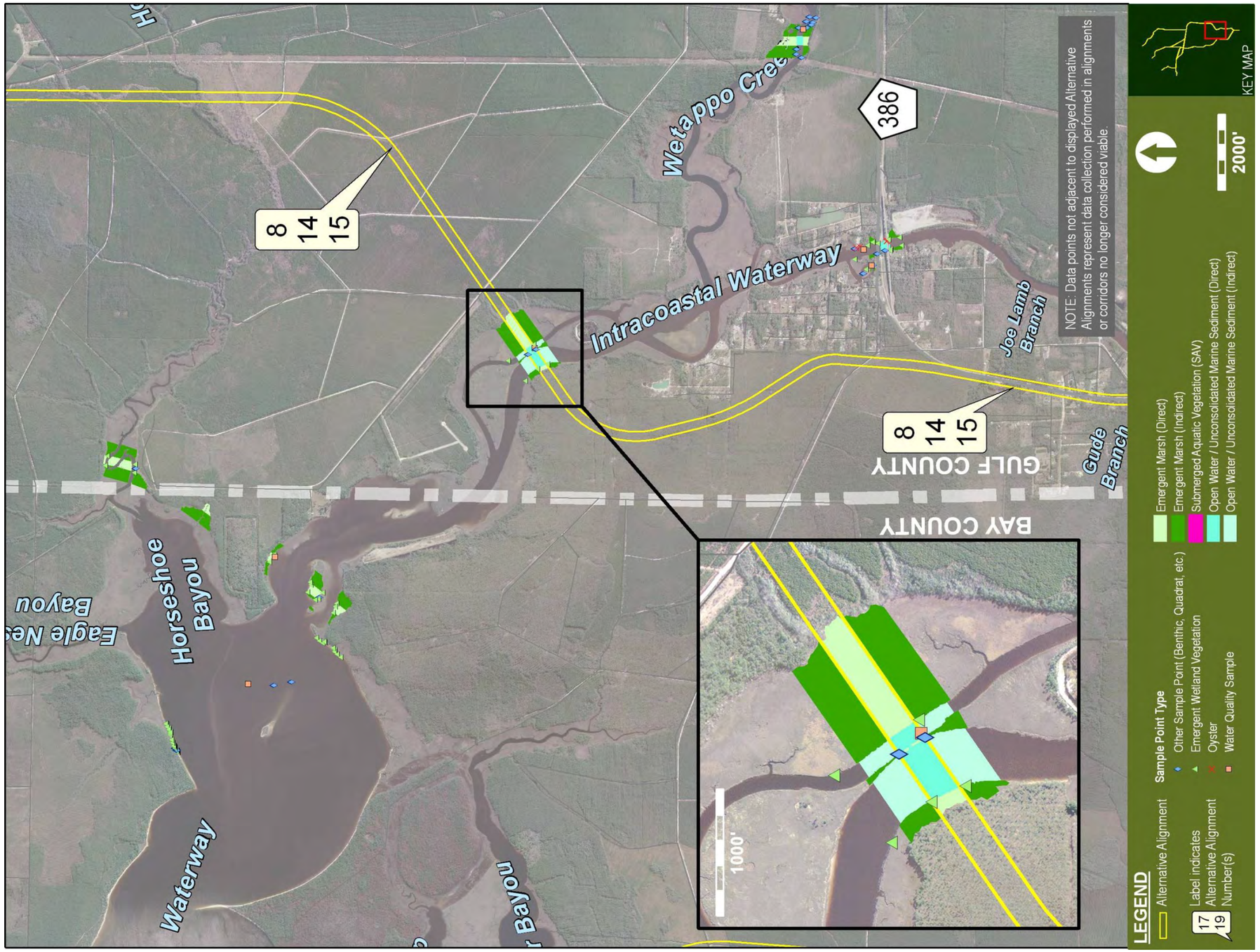


Figure 8-23: EFH Locations Associated with Alternatives 8, 14, and 15



Data collected during the EFH assessment survey was subject to weather conditions, tidal events and other various environmental factors. The area within the EFH survey limits is subject to frequent disturbance by commercial and recreational vessels. The regular maintenance dredging of the navigational channel of the ICWW could potentially have effects on water quality and marine sediments. The FDEP issued a permit on October 10, 2012 to the USACE for maintenance dredging of the Gulf ICWW in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, and Franklin Counties, as necessary, until October 10, 2022.

The majority of potential impacts to EFH will likely occur to emergent marsh and open water/unconsolidated marine sediment habitats. Most emergent marsh habitat (especially large expanses) observed was of relatively high quality. A limited amount of shoreline habitat exhibited varying degrees of erosion. Based on aerial photo interpretation and field survey data, the following potential direct impacts to emergent marsh and open water/unconsolidated marine sediment habitats were estimated (**Table 8-51**). This conservative approach assumes that the entire right-of-way (not the width of the bridge) will result in direct impacts where in actuality the permanent direct impacts are likely confined to the area of the pilings.

Table 8-51: Potential Direct Impacts to Emergent Marsh and Open Water Habitats

Alternative	Potential Emergent Marsh Impacts (acres)	Potential Open Water/Unconsolidated Marine Sediment Impacts (acres)	Total EFH (acres)
Alignments 17/19 (East Bay)	0	50.8	50.8
Alignments 8/14/15 (ICWW/Wetappo Creek)	6.2	3.4	9.6

There appears to be no direct impact to Submerged Aquatic Vegetation (SAV) within the alternatives. The overall assessment of potential impacts to oysters for all the alternatives appears to be minimal. Impacts to bivalves (mussels) and other benthic resources (tube worms) are likely to occur with all alternatives

Potential indirect effects to EFH associated with this project could include water quality degradation from stormwater runoff or roadway spills, changes in hydrology, edge effect impacts from filling wetlands, habitat fragmentation and potential changes in wildlife utilization, increased constraints on implementing prescribed burning management plans, and creation of a conduit/corridor (roadway for exotic/invasive species range expansion. Potential indirect involvement with EFH was determined by calculating the EFH area within the 300-foot buffer (indirect impacts) associated with the alternatives. (**Table 8-52**)

Table 8-52: Potential Indirect Impacts to Emergent Marsh, Open Water, and Submerged Aquatic Vegetation Habitats

Alternative	Potential Emergent Marsh Impacts (acres)	Potential Open Water/ Unconsolidated Marine Sediment Impacts (acres)	Potential SAV Impacts (acres)	Total EFH (acres)
Alternatives 17/19 (East Bay)	0.10	120.90	0.06	121.06
Alternatives 8/14/15 (ICWW/Wetappo Creek)	8.10	16.90	0.00	25.00

When comparing both direct and indirect EFH involvement across Alternatives, Alternative 17/19 involves fewer acres of emergent marsh habitat than Alterative 8/14/15. Conversely, Alternative 17/19

involves significantly more open water habitat than Alterative 8/14/15. For both Alternatives, potential involvement with SAV is negligible.

Effects on Essential Fish Habitat

Pursuant to the methodology chosen for construction of new structures there may be permanent and temporary effects to EFH in the study area. Permanent and/or widespread effects would depend on the particular type of impacts and the resource impacted.

Effects on Habitat Areas of Particular Concern (HAPC)

There are no HAPCs present in the vicinity of the study area.

Effects on Managed and Associated Fisheries Species

While the EFH review indicates that eighteen (19) of the representative managed species and 13 highly migratory species have a potential (low or medium) for occurrence in waters associated with the project alternatives, *the anticipated impact to these species and EFH is not significant*. A total of 50.8 acres of open water estuarine habitat (Alternatives 17 and 19) and 3.4 acres (Alternatives 8, 14 and 15) estuarine/creek habitat EFH are located within the respective alternatives. Additionally, there are a total of 6.2 acres of estuarine emergent marsh EFH located within Alternatives 8, 14, and 15. This represents a small percentage of the total amount of EFH present within the regional landscape including all of East Bay and Wetappo Creek. It is anticipated that the potential impact to this habitat will be greatly minimized and in some cases eliminated with further modifications during design. The remaining impacts will be mitigated

Most of the managed species determined to have potential involvement with the alternative alignments only utilize the associated EFH for a portion of their lifecycle. Juvenile and adult fish species which might visit the area are mobile and would not be affected by the project. Slower moving species, such as shrimp and crab, would not be affected due to the relatively small amount of habitat impact compared to the available habitat present within the immediate surrounding area. *Therefore, the proposed project is not anticipated to have a significant effect on the lifecycle of these species. The proposed project will have minimal adverse effect on EFH.*

In addition, there may be temporary impacts to EFH during construction. These temporary impacts can vary depending on the type of construction equipment used. Examples of temporary construction impacts to EFH include increased sediment loads in stormwater runoff from the construction site and increased turbidity during in-water work. Both of these contribute to impacts on benthic aquatic habitats. Specific construction impacts will not be known until the construction methodology has been coordinated. However, these impacts are temporary and with the utilization of construction controls and BMP during construction these impacts should be minimized. In addition, any EFH impacts will be mitigated

Proposed Conservation Efforts

The proposed conservation efforts shall utilize information provided in the EFH assessment, guidance from state and federal agencies, and BMPs associated with work of this nature. Recommendations to conserve natural resources in the area should include, but not be limited to: working within adjacent areas devoid of marine resources, avoid placing equipment and debris in adjacent marine resource areas, incorporating turbidity controls, utilizing vessels that can operate in depths adequate to not scour or propscar marine resources, and removal of all construction debris and equipment at completion of the project. Monitoring for marine resources during all phases of the construction project should be

implemented to identify potential impacts and remedy any impacts that may occur during construction, permitted and otherwise.

Avoidance and Minimization Measures

Avoidance and minimization measures have been implemented during the development of alternatives, by shifting alignments to avoid and/or minimize involvement with EFH and by proposing that the bridges span the entire EFH associated with East Bay and Wetappo Creek, eliminating significant potential fill areas. It is further anticipated that only bridge pilings will be located within the estuarine emergent and open water/unconsolidated marine sediment habitats. However, as requested by the NMFS, if Alternatives 17 or 19 are selected as the preferred alternative, an additional seagrass survey during the June-August prime growing season will be completed prior to construction.

Avoiding and minimizing impacts to marine resources during construction will require implementing BMP associated with works in waters of the state. Different seasonal conditions will relate to various species presence and water depths available for construction activities. Adequate water depths should be ensured during the proper use of appropriate construction vessels and equipment for this operation. Specific protocol will be developed to ensure adequate demobilization and stabilization or removal of debris when possible during potentially damaging tropical storm weather.

A stormwater collection and treatment system will be provided as part of the project to protect surface water quality.

The contractor shall be required to develop, implement and adhere to a "marine resource protection plan" to ensure that marine resources within and outside of the right-of-way are not damaged by construction activities. This plan may involve strategies such as marking off adjacent marine resources outside of the proposed project"s alignment with buoys, so that construction related boat traffic does not affect adjacent marine resources, i.e., emergent vegetation, seagrass, etc., and barges are not moored directly on or over marine resources. Consideration should be taken to implement strategies to reduce impacts to the existing EFH resources, where possible. For instance, depending on the specific construction activities chosen for this area, some debris (concrete and woody debris) associated with oyster resources may need to be removed for public safety considerations. Impacts such as these should be considered in the overall proposed methodology.

Best Management Practices

Construction activities could have short-term, temporary impacts on EFH, such as increased sediment loads in stormwater runoff from the construction site and increased turbidity during in-water work. Both of these contribute to impacts on benthic aquatic habitats.

Appropriate construction controls and BMP will be implemented to ensure protection of marine resources. Construction BMP should incorporate, but not be limited to: working within adjacent areas devoid of marine resources, instituting BMP to reduce direct impacts to emergent marsh systems, adequate turbidity controls, utilizing vessels that can operate in depths adequate enough to not scour or prop scar the marine sediments/resources, continual monitoring for presence of wildlife species in the work area, and removal of all construction debris and equipment at completion of the project.

Although not anticipated, if explosives should be utilized during construction activities, then the *Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* should be implemented. The Manatee Construction Conditions set forth by the Florida Fish and Wildlife Conservation Commission (FFWCC) and the United States Fish and Wildlife

Service (USFWS) must be followed throughout a construction process. Monitoring for such species shall be conducted throughout the construction process to ensure BMP are being followed.

Identification of Unavoidable Effects

It is expected that unavoidable effects will be limited to minor direct impacts to individuals of some managed or associated fish and invertebrate species. Potential direct impacts to the various EFH resources associated with the project area are likely to occur.

Communication with appropriate resources agencies will be important as the project develops through further phases of study and/or design. Impacts to emergent marsh are likely to be the most significant for consideration when assessing the various alternatives . As requested by the NMFS, if Alternatives 17 or 19 are selected an additional seagrass survey during the June-August prime growing season will be completed prior to construction.

Mitigation Strategies

Mitigation will be required for direct and indirect impacts to wetlands associated with EFH (emergent marsh). At this point in project development, FDOT is not prepared to state definitely how impacts to these wetlands will be mitigated due to current lack of any existing mitigation banks with estuarine credits. However, if at the time of permitting there are still no mitigation banks with estuarine credits, out-of-kind credits will be utilized with regulatory agency approval. Therefore, it is anticipated that EFH impacts which result from the construction of this project will be mitigated pursuant to Section 373.4137, FS to satisfy all mitigation requirements of Part IV. Chapter 373, FS and 33 U.S.C. s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements.

It is important to recognize the temporal nature of mitigation credits and how inventories are affected by demand. While the availability of credits "today" is noteworthy, it is unclear as to the actual time they will be needed for this project. It is possible that credits available today from existing mitigation banks and sites may still be available at the time needed - the opposite situation is also possible for some or all of the banks and mitigation sites active "today". However, new banks may come on line between now and the time credits are actually needed (design and permitting phase) for this project. Given the high percentage of undeveloped land in this part of Florida, it is also clear that numerous opportunities for future mitigation sites exist. In the event that this project results in impacts to estuarine wetlands and estuarine credits are not available, available out-of-kind credits may be utilized for such wetlands per regulatory agency approval. Any "mitigation for EFH" would be addressed by virtue of compensating for project-related wetland impacts.

Since it has been determined the project "may affect" EFH resources, the FDOT intends to reinitiate consultation with NMFS for these resources after the public hearing and during development of the final NEPA document (or final design and permitting of the project) once all agency and public comments have been received and evaluated and a preferred alternative has been selected. At that time NMFS will work with the FDOT to minimize the projects impacts to EFH resources. If for some reason consultation must be reinitiated during final design and permitting, FDOT will complete all consultation and document compliance in a subsequent project reevaluations prior to the project beginning construction. Consistent with 23 CFR 771.133, completion of consultation at a later phase of project development is a commitment by FDOT.

8.6.7 Special Designations

Special designations are resources that have special protection through their identification as a resource within one of several special designation categories, such as: Outstanding Florida Waters (OFW), aquatic preserves, wild and scenic rivers, coastal barrier resource units, and scenic highways.

There are no wild and scenic rivers or scenic highways in the study area, but there are aquatic preserves, OFW, and coastal barrier resource units. Neither of the two aquatic preserves, St. Joseph Bay Aquatic Preserve and St. Andrew Aquatic Preserve, would experience a direct adverse effect from any of the project alternatives due to their location beyond the study area boundaries (**Figure 8-24**).

Four OFW are present near the project study area: St. Andrews State Recreation Area in Bay County, and T.H. Stone Memorial St. Joseph Peninsula State Park and Dead Lakes Recreation Area in Gulf County. None of the project alternatives would have direct involvement with any of these OFW (**Figure 8-25**).

There are two coastal barrier resource units in the vicinity of the project, but as shown in **Figure 8-26**, none of the proposed alternatives would have direct involvement with these resources.

Figure 8-24: Aquatic Preserves in the Vicinity of the Gulf Coast Parkway Alternatives

Figure 8-25: Outstanding Florida Waters in the Vicinity of the Gulf Coast Parkway Study Area

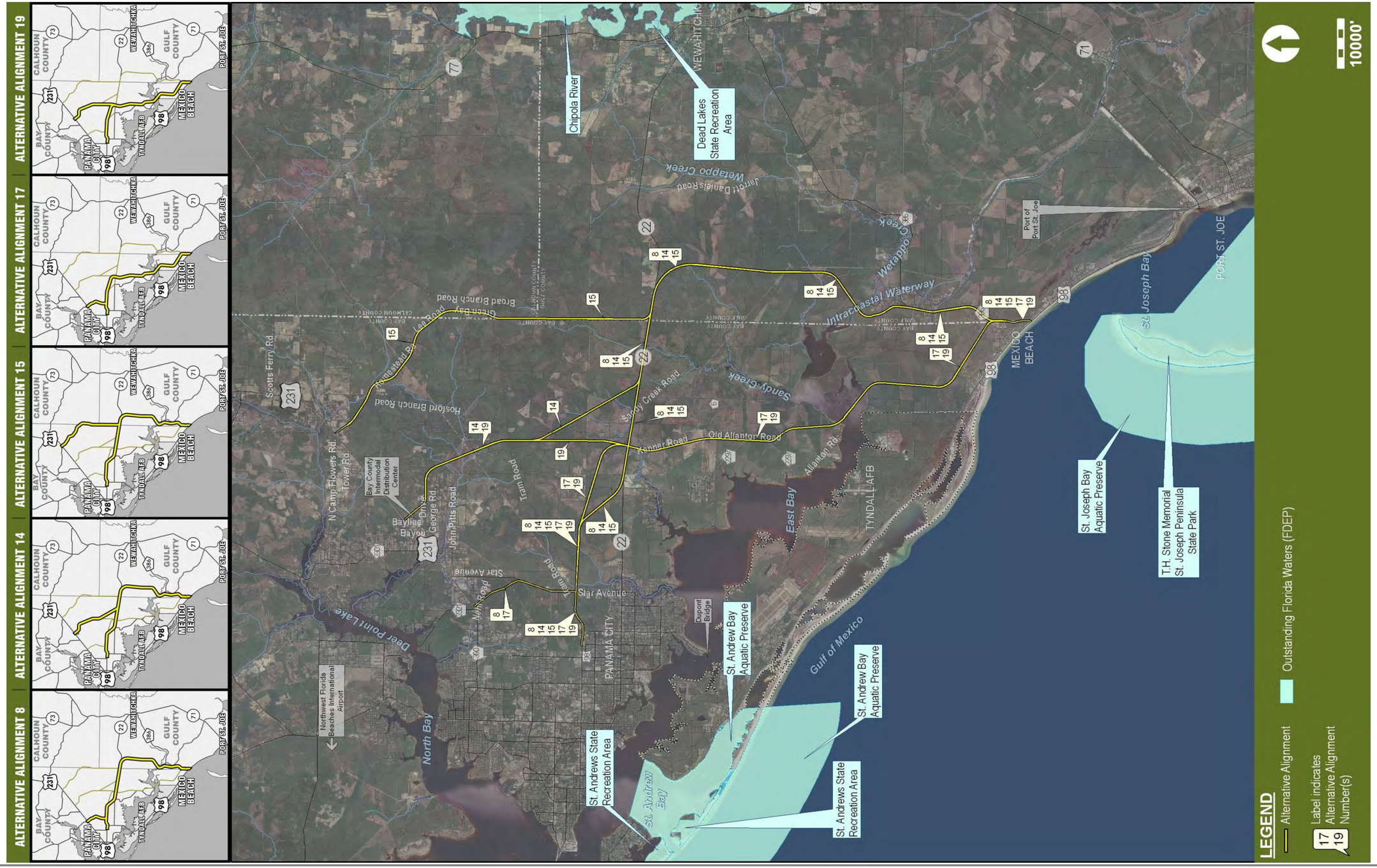


Figure 8-26: Coastal Barrier Resource Units

8.6.8 Water Quality

Surface waters and their classifications have been presented in Section 4 of this report. **Table 8-53** summarizes the alternatives involvement with named surface waters. Some of these are new and some will involve the replacement of an existing structure, as indicated in the table.

Table 8-53: Surface Water Crossings by Alternative

Surface Water	Alternative				
	8	14	15	17	19
Cypress Creek	79 ft. low level bridge	79 ft. low level bridge	79 ft. low level bridge	New 500 ft. bridge	New 500 ft. bridge
East Bay	-	-	-	New 9100 ft. high level bridge	New 9100 ft. high level bridge
Cook/Olivers Creek	-	-	-	New 68 ft. bridge replacing existing bridge	New 68 ft. bridge replacing existing bridge
ICWW/Wetappo Creek	New 7000 ft. high level bridge	New 7000 ft. high level bridge	New 7000 ft. high level bridge	-	-
Horseshoe Creek	New culvert	New culvert	New culvert	-	-
Horseshoe Creek	New culvert	New culvert	New culvert	-	-
Little Sandy Creek	New 84 ft. bridge	New 84 ft. bridge	New 84 ft. bridge	-	-
Britt Branch	New 82 ft. bridge	New 82 ft. bridge	New 82 ft. bridge	-	-
Wildcat Swamp	New 47 ft. bridge replacing existing culvert	New 47 ft. bridge replacing existing culvert	New 47 ft. bridge replacing existing culvert	-	-
Sandy Creek	Replacement of existing 227 ft. bridge	Replacement of existing 227 ft. bridge	Replacement of existing 227 ft. bridge	-	-
Olivers Creek	New 68 ft. bridge replacing existing culvert	New 68 ft. bridge replacing existing culvert	New 68 ft. bridge replacing existing culvert	-	-
Cushion Creek	New 36 ft. bridge replacing existing culvert	New 36 ft. bridge replacing existing culvert	New 36 ft. bridge replacing existing culvert	-	-
Callaway Creek	New 1000 ft. bridge	New 1000 ft. bridge	New 1000 ft. bridge	New 1000 ft. bridge	New 1000 ft. bridge
Big Branch	-	New culvert	-	New culvert	-
Bayou George & Island Branch	-	New 205 ft. bridge	-	-	New 205 ft. bridge
Beefwood Branch	-	New 70 ft. bridge	-	-	New 70 ft. bridge
Sandy Creek	-	-	New 4,500 ft. bridge	-	-
Headwaters Bayou George	-	-	New culvert	-	-

There are also crossings of unnamed drainageways under each alternative. **Table 8-54** provides the total number of bridges and culverts required for each alternative and the approximate total length of bridges. **Figure 8-27** shows the locations of proposed bridges and culverts. Replacement structures have been sized to perform in a manner equal to or better than existing structures, and backwater elevations are not expected to increase. The hydraulic structures proposed along new alignments will be designed to cause minimal changes in flood stages and flood limits. These changes will not result in any significant impacts on the natural and beneficial floodplain values or any significant changes in flood risk or damage. Please

refer to the Location Hydraulic Report prepared for this project for a detailed discussion of the location and sizing of bridges and culverts.

Table 8-54: Proposed Bridges and Culverts by Alternative

Alternative	Number of High Level Bridges	Approximate Length of High Level Bridge (in feet)	Number of Low Level Bridges	Approximate Length of Low Level Bridges (in feet)	Number of Box Culverts	Number of Small Culverts
8	1	7,000	10	1,796	12	19
14	1	7,000	12	2,071	16	24
15	1	7,000	12	6,384	14	26
17	1	9,100	4	1,626	3	13
19	1	9,100	6	1,903	5	19

Involvement with Water Quality Classifications

There is potential for some of the Build Alternatives to have involvement with the drainage basins of Class I and Class II surface waters**.** Those alternatives potentially involved with Class I waters include Alternatives 14, 15, and 19. The northern extent of Alternative 15 crosses the south fork of Bear Creek (Class I) just prior to intersecting US 231. Alternatives 14 and 19 cross the upper reaches of Bayou George Creek (Class I) near Old Majette Tower Road. All alternatives have potential for involvement with the drainage basins to Class II and Class III waters.

Involvement with Impaired Waters

The FDEP is implementing a statewide watershed management approach for restoring and protecting the water quality of Florida surface waters. Under Section 303(d) of the 1972 Federal Clean Water Act and the 1999 Florida Watershed Restoration Act (Chapter 92-223, Laws of Florida), Total Maximum Daily Loads (TMDL) must be developed for all waters that do not meet their designated uses[32].

Figure 8-28 shows the current water body segments in the study area that have been designated as impaired. **Table 8-55** identifies the potentially affected Waterbody Identification (WBIDs) by name, lists the parameter(s) for which each has been identified as impaired, associates each alternative with the affected WBID, and identifies the area of involvement.

All the Gulf Coast Parkway project alternatives have involvement with five of the same water body drainage basins (WBIDs 1238, 1127, 1110, 1141A and 1142). Because all alternatives begin at the intersection of US 98 and CR 386 and then follow CR 386 to the north, all have involvement with the Panther Swamp basin (WBID 1238); and because of their Tram Road connection to US 98 (Tyndall Parkway), all alternatives have the potential for involvement with the Calloway Creek basin (WBID 1110), the Parker Creek basin (WBID 1141A); the Boggy Creek basin (WBID 1142), and Laird Bayou basin (WBID 1127). While all alternatives have potential involvement with the Laird Bayou basin (WBID 1127), the extent of their involvement varies, depending on the alternative, from a minimum of 119 acres under Alternative 17 to a maximum of 215 acres under Alternative 14.

Alternatives 17 and 19 have additional potential involvement with three other drainage basins that Alternatives 8, 14, and 15 do not. These are WBID 1061F [East Bay (East Segment)], WBID1171 (California Bayou), and WBID 1230 (Walker Bayou), Alternatives 8, 14, and 15 have involvement with four drainage basins that Alternatives 17 and 19 do not. These are WBID 1111 (Sandy Creek), WBID 1162 (Mule Creek), and WBID 1155 (Little Sandy Creek). The only other difference among the alternatives is that Alternatives 8 and 17 also have involvement with WBID 1086 (Mill Bayou)

Figure 8-27: Proposed Locations of Build Alternatives' Bridges and Culverts within Class I, Class II and Class III Drainage Basins.

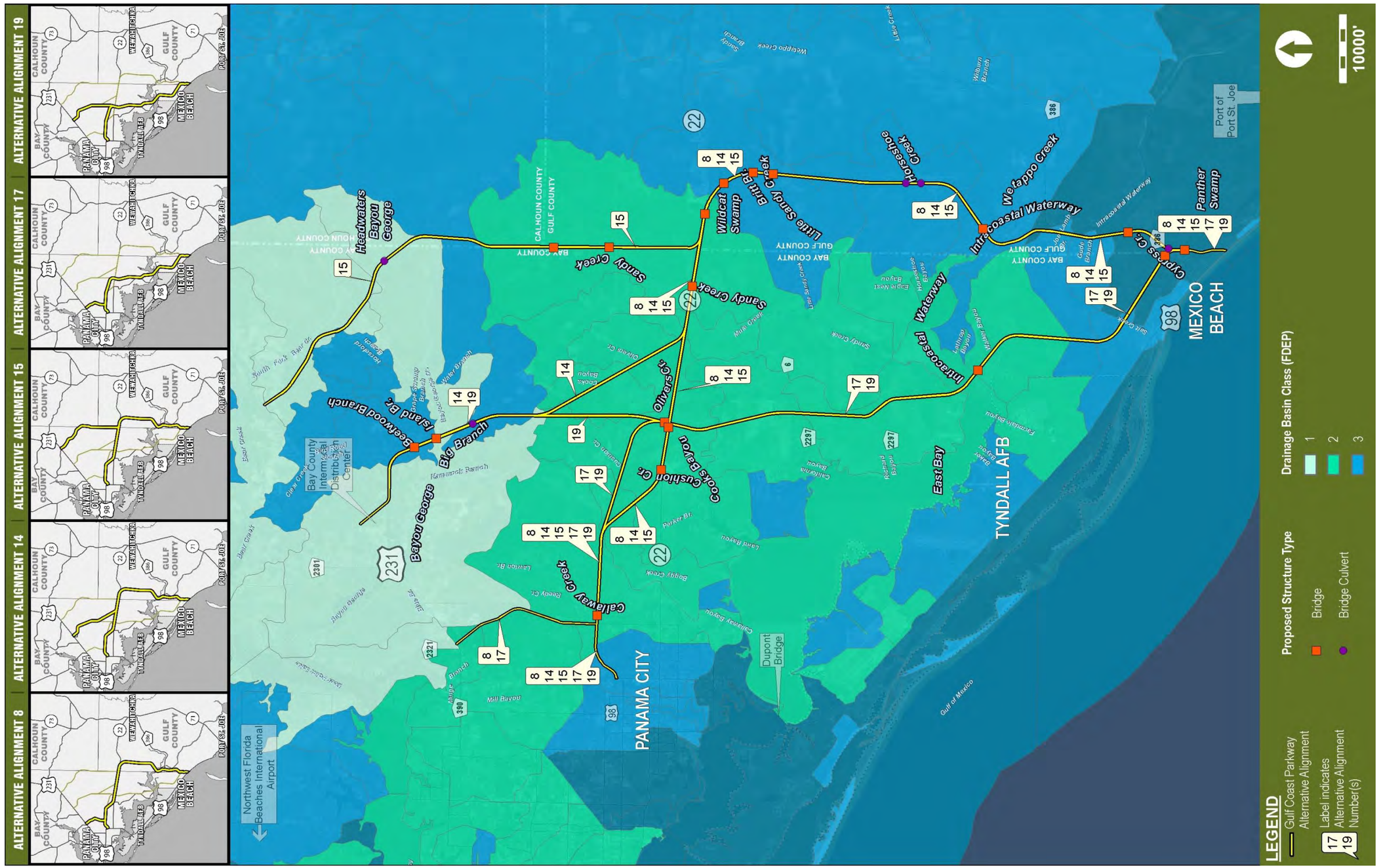


Figure 8-28: Gulf Coast Parkway Alternatives' Involvement with Impaired Waters

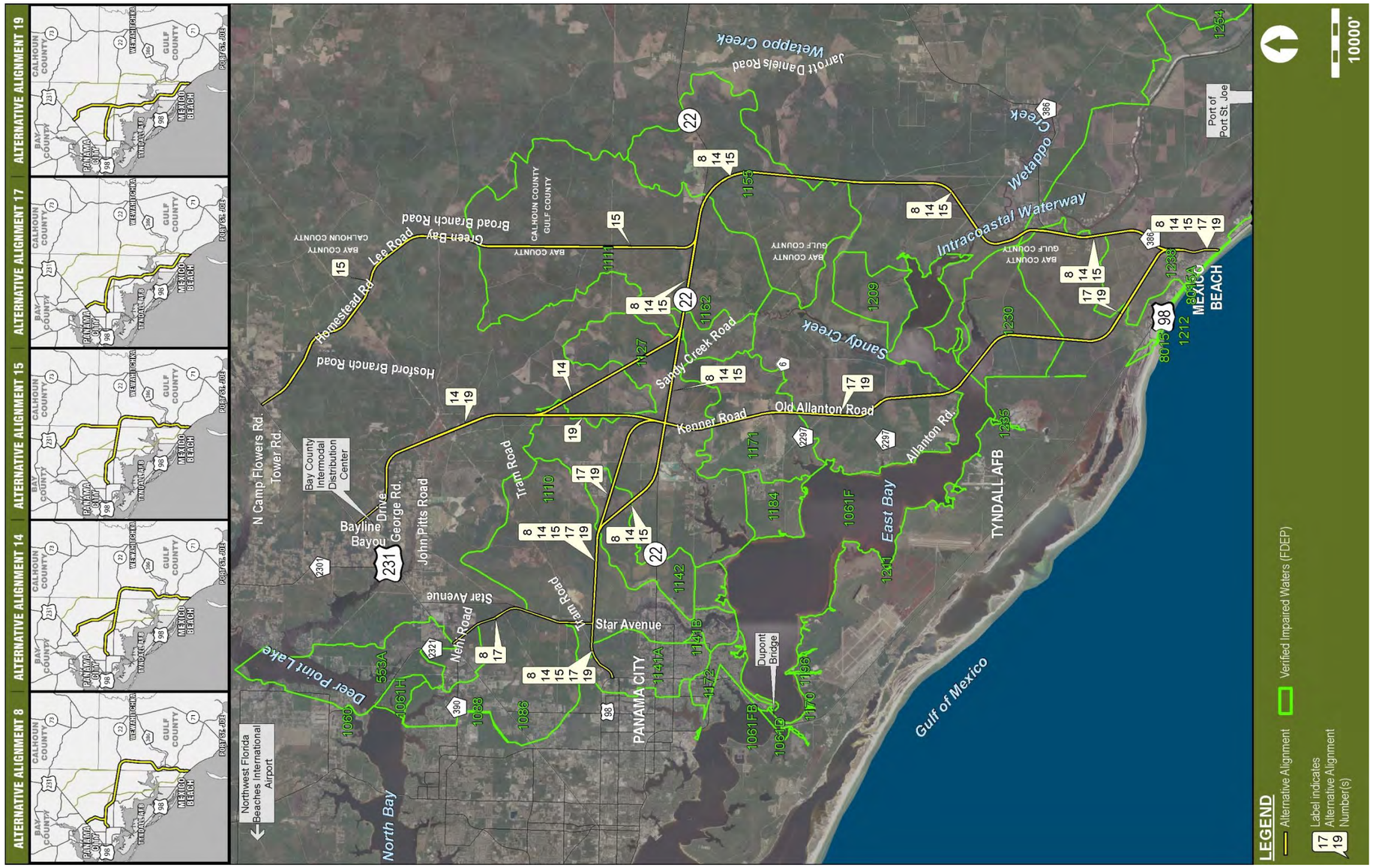


Table 8-55: Alternatives' Involvement with Impaired Water Body Segment Drainage Areas

Alternative	WBID	Water Body	Impairment	Involvement with Verified Impaired Waters (in Acres)
8	1111	Sandy Creek	Fecal Coliform, Bacteria (in shellfish)	102
	1162	Mule Creek	Fecal Coliform	12
	1142	Boggy Creek	Fecal Coliform	39
	1238	Panther Swamp	Mercury (in Fish Tissue)	113
	1127	Laird Bayou	Mercury (in Fish Tissue)	147
	1086	Mill Bayou	Mercury (in Fish Tissue)	31
	1155	Little Sandy Creek	Dissolved Oxygen (Nutrients)	85
	1141A	Parker Creek	Dissolved Oxygen (Nutrients)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	97
	Total Acres			**651**
14	1111	Sandy Creek	Fecal Coliform, Bacteria (in shellfish)	102
	1162	Mule Creek	Fecal Coliform	12
	1142	Boggy Creek	Fecal Coliform	39
	1238	Panther Swamp	Mercury (in Fish Tissue)	113
	1127	Laird Bayou	Mercury (in Fish Tissue)	215
	1155	Little Sandy Creek	Dissolved Oxygen (Nutrients)	85
	1141A	Parker Creek	Dissolved Oxygen (Nutrients)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	80
	Total Acres			**671**
15	1111	Sandy Creek	Fecal Coliform, Bacteria (in shellfish)	293
	1162	Mule Creek	Fecal Coliform	12
	1142	Boggy Creek	Fecal Coliform	39
	1238	Panther Swamp	Mercury (in Fish Tissue)	113
	1127	Laird Bayou	Mercury (in Fish Tissue)	147
	1155	Little Sandy Creek	Dissolved Oxygen (Nutrients)	85
	1141A	Parker Creek	Dissolved Oxygen (Nutrients)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	80
	Total Acres			**794**
17	1142	Boggy Creek	Fecal Coliform	42
	1061F	East Bay (East Segment)	Bacteria (in Shellfish), Mercury (in Fish Tissue)	21
	1238	Panther Swamp	Mercury (in Fish Tissue)	94
	1171	California Bayou	Mercury (in Fish Tissue)	75
	1127	Laird Bayou	Mercury (in Fish Tissue)	119
	1086	Mill Bayou	Mercury (in Fish Tissue)	31
	1230	Walker Bayou	Mercury (in Fish Tissue)	96
	1141A	Parker Creek	Mercury (in Fish Tissue)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	97
	Total Acres			**600**
19	1142	Boggy Creek	Fecal Coliform	42
	1061F	East Bay (East Segment)	Bacteria (in Shellfish), Mercury (in Fish Tissue)	21
	1238	Panther Swamp	Mercury (in Fish Tissue)	94
	1171	California Bayou	Mercury (in Fish Tissue)	75
	1127	Laird Bayou	Mercury (in Fish Tissue)	169
	1230	Walker Bayou	Mercury (in Fish Tissue)	96
	1141A	Parker Creek	Mercury (in Fish Tissue)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	80
	Total Acres			**602**

Alternative 8 and 17 also have the potential to have a minor involvement with the Deerpoint Lake Basin (WBID 553A), which is bounded by US 231 in the vicinity of CR 390.

Of the twelve drainage basins, 12 are impaired for mercury (in fish tissue), one (WBID 1061F) of which is also impaired for bacteria; three are impaired for fecal coliforms, one (WBID 1111) of which is also impaired for bacteria; and two are impaired for Dissolved Oxygen (nutrients). At this time, the only waterbodies or waterbody segments that may potentially be affected by the project alternatives and have verified impairment and require the development of TMDLs are those impaired for mercury (in fish tissue). A statewide TMDL for mercury is being developed by the FDEP. The purpose of the TMDL is to establish allowable loadings that will allow for a reduction of mercury in fresh and marine waters to address the human health issue associated with elevated levels of mercury found in fish.

Alternatives 17 and 19 have the least total involvement (600 and 602 acres, respectively, with impaired waters, while Alternative 15 has the most total involvement (794 acres). Although stormwater collection and treatment facilities that provide the required level of treatment prior to discharge to surface waters, there remains the potential for contaminants to enter surface waters during severe storm events that produce runoff in excess of the design capacity of the facilities.

The No Build Alternative would not alter existing conditions; thus, any untreated stormwater would continue to run into surface waters with no improvement in water quality being achieved.

Increased Impervious Surface Area

All of the Build Alternatives would increase the impermeable surface area and, therefore, the volume of stormwater runoff. However, all of the Build Alternatives would provide for the collection and treatment of stormwater runoff prior to discharge to surface waters. Since the alternatives utilize some existing road alignments, they will have the added benefit of treating runoff that was not previously being collected. Runoff from paved roads carries contaminants such as oils and heavy metals, while runoff from unpaved roads contributes heavy loads of sediments to surface waters. **Table 8-56** compares the amount of existing roads incorporated into each alternative and **Table 8-57** summarizes each alternative‟s incorporation of paved and unpaved roads.

Table 8-56: Comparison of Existing Roads Incorporated by Each Alternative

Existing Road	Alternative									
	8		14		15		17		19	
	Paved (Y/N)	Distance (feet)	Paved (Y/N)	Distance (feet)	Paved (Y/N)	Distance (feet)	Paved (Y/N)	Distance (feet)	Paved (Y/N)	Distance (feet)
CR 386	Y	23,126	Y	23,126	Y	23,126	Y	5,600	Y	5,600
Unnamed Road (South of SR 22)	N	7,091	N	7,091	N	7,091	N		N	
SR 22	Y	39,154	Y	39,154	Y	39,154	Y		Y	
Unnamed Road (West of CR 386)	N		N		N		N	8.923	N	8,923
Unnamed Road (South of East Bay)	N		N		N		N	11,832	N	11,832
Old Allanton Road/ Kenner Road	N		N		N		N	24,379	N	24,379
Green Bay Broad Branch Road	N		N		N	8,324	N		N	
Lee Road	N		N		N	3,503	N		N	
Homestead Road	N		N		N	2,443	N		N	
Star Avenue	Y	11,300	Y		Y		Y	11,300	Y	
Nehi Road	N	6,342	N		N		N	6,342	N	
Tram Road	Y	3,696	Y	3,696	Y	3,696	Y	3,696	Y	3,696
Total		**90,709**		**73,067**		**87,337**		**72,072**		**54,430**

Table 8-57: Comparison of Alternatives Incorporation of Existing Paved and Unpaved Roads

Road Type	Alternative									
	8		14		15		17		19	
	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles
Paved	77,276	14.7	65,976	12.5	65,976	12.5	20,596	3.9	9,296	1.8
Unpaved	13,433	2.5	7,091	1.3	21,361	4.0	51,476	9.8	45,134	8.5
Total	**90,709**	**17.2**	**73,067**	**13.8**	**87,337**	**16.5**	**72,072**	**13.7**	**54,430**	**10.3**

Alternative 19 makes least use of existing roads but incorporates the second greatest amount of unpaved roads. Alternative 8 incorporates the most existing roads and the most paved roads, but the second least unpaved roads. Alternative 14 utilizes the least unpaved roads and is third in total use of existing roads. Alternative 17 would convert the most unpaved road (almost 10 miles) to paved road of all the alternatives. Alternative 15 incorporates the second most miles of total existing roads.

All Build Alternatives provide a collection and treatment system designed to meet water quality standards for the receiving water bodies. For a rural roadway, these facilities typically include grass ditches/swales to carry stormwater to treatment ponds for settling and storage prior to discharge, if discharge is to occur. For an urban roadway, stormwater would be collected with the curb and gutter and transported via a closed drainage system to stormwater ponds for treatment prior to discharge, if discharge is to occur.

The proposed stormwater facility design will include, at a minimum, the water quantity requirements for water quality impacts as required by the NWFWMD in Rule 40A-1, 40A-4, 62-4, 62-341, 62-346, the FDEP Rules 62-312 and 62-25 F.A.C., and the rules of the USEPA. Therefore, no further mitigation for water quality impacts will be needed.

FDOT will address the potential effects of construction activities on water quality and wetlands in accordance with FDOT"s most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions.

A Water Quality Impact Evaluation (WQIE) Checklist has been completed for the proposed project and is included in **Appendix K**. Please refer to the WQIE Checklist for additional information.

8.6.9 Floodplains

All Build Alternatives have transverse crossings of the floodplains. As is evident from **Figure 4-1**, there is no practical way to avoid these transverse encroachments. There are Federal Emergency Management Agency (FEMA)–mapped floodplains, and un-mapped floodplains associated with small hydraulic crossings. Preliminary evaluations have been performed to estimate the structure size for the floodplains having larger watersheds. For these floodplains and those with smaller watersheds, the hydraulic structures will be sized during design to meet FDOT"s drainage standards and minimize the impacts to floodplains. For more information see the *Location Hydraulic Report* prepared for this project.

Of the Build Alternatives evaluated for this project, only short sections are along existing roadways. Approximately 7.3 miles of SR 22 and 6.5 miles of CR 386 are within the Build Alternatives. Appropriate maintenance personnel were contacted to determine if there are hydraulic inadequacies with existing structures in those existing roads that are part of the Build Alternatives. Email correspondence with Mr. Harvey Brewton, FDOT Maintenance Engineer, Panama City, indicated that Sandy Creek Bridge on SR 22 has experienced flooding and may need more hydraulic capacity.

A few longitudinal encroachments were identified based on overlay of the Build Alternatives on USGS quadrangle maps. In these areas, it is proposed that bridges be used to span the encroachments. These longitudinal encroachments are noted below in **Table 8-58**. During design, when field survey is available and detailed hydraulic evaluations are done, it may be determined that these are not encroachments.

Table 8-58: Gulf Coast Parkway Longitudinal Encroachments

Alternative	Water Body	Approx Length of Longitudinal Encroachment (ft)
8, 14, 15, 17 and 19	Tributary of Callaway Creek	1,000
15	Tributary of Sandy Creek	4,500

The estimated number of transverse and longitudinal encroachments varies from 21 for Alternative 17 to 53 encroachments for Alternatives 14 and 15. Alternatives 8 and 19 have 42 and 31 encroachments, respectively.

A Federal Emergency Management Act (FEMA) designated "Regulatory Floodway" is the channel of a river or other watercourse and the adjacent land that must be reserved in order to discharge the base flood without increasing the water surface elevation more than a designated height. Development in these floodways must be regulated to ensure that there is no increase in upstream flood elevations.

Along this project, parts of Bayou George Creek and Callaway Creek are designated FEMA floodways. Some of the proposed alignments are near Bayou George Creek floodway but never cross it. A small portion of the project crosses the Callaway Creek floodway. The floodway is approximately 250-feet wide at the crossing. The detailed hydraulics for this crossing will be evaluated during the design phase when topographic survey is obtained. At that time, FEMA No-Rise procedures will be followed including proper coordination with Bay

County staff. The procedures require using water-surface profile computer models to ensure that no water surface increase is created by the proposed bridge and embankment. Given a no-rise situation, Floodway Map or Flood Insurance Study revisions will not be required.

Proposed cross drains will be designed to pass the 50-year flow without overtopping the roadway. Flows up to and including the 500-year will be analyzed to determine backwater and cross drains will be designed so that there is no significant change in land use values.

The project will promote transportation and associated economic development throughout the area. Some of this future development may occur within the base floodplains. Existing state and local regulations are in place to ensure that adverse effects of floodplain development are avoided; therefore, any future development will be compatible with local floodplain programs. As such, the project is a low risk for supporting incompatible floodplain development.

This type of project has the potential to cause changes in flood stage and flood limits; however, following FDOT"s drainage standards, the proposed hydraulic structures and overall roadway drainage features will be designed to cause minimal if any changes to flood stages and flood limits in upstream and downstream properties, and to maintain the existing drainage patterns to the fullest extent practical. Potential water quality impacts will be minimal due to adherence to the applicable state regulations. Potential direct impacts to natural features such as fish, plant and wildlife habitat will be mitigated through subsequent design phase permitting. The *Wetland Evaluation Report* addresses potential direct impacts further. Given that a) there will be minimal changes to flood stages; b) existing drainage patterns will be maintained to the fullest extent practical; c) water quality will be addressed by compliance with state regulations; and d) direct impacts will be mitigated during the design phase; the project will have minimal impacts to natural and beneficial floodplain values.

Bay County and Gulf County representatives were contacted to determine if the project is consistent with existing watershed and floodplain management programs. Both Bay and Gulf County staff indicated that they do not have more restrictive requirements than FEMA for infrastructure projects such as the proposed project. When it was explained that the project will be designed to FEMA, FDOT, and state regulatory requirements, it was concluded that the project will be consistent with local floodplain management programs. The county agencies are the delegated FEMA representatives for this project so there was no need to discuss further with FEMA.

This project will have a positive effect on emergency services and evacuation as it provides an alternative route to the local communities.

In summary, the hydraulic structures proposed along existing alignments will perform in a manner equal to or better than the existing structure and backwater elevations are not expected to increase. The hydraulic structures proposed along new alignments will be designed to cause minimal changes in flood stages and flood limits. These changes will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant changes in flood risk or damage. This project is a low risk for supporting incompatible floodplain development and the project will enhance emergency services and evacuations. Therefore, it has been determined that the encroachments associated with this project are not significant.

8.6.10 Coastal Zone Consistency

In accordance with Section 307 of the Coastal Zone Management Act (CZMA) and Chapter 15, CFR, Part 930, Federal Consistency with Approved Coastal Management Programs, this project was reviewed for Coastal Zone Consistency. As documented in the Advance Notification (AN) process, the FDEP has determined that this project is consistent with the Florida Coastal Zone Management Plan (see **Appendix L)**.

8.6.11 Wildlife and Habitat

An Endangered Species Biological Assessment Report (ESBAR) has been completed for the Gulf Coast Parkway project. In conducting that assessment, it was determined that the USFWS documents 122 listed species (57 animals and 65 plants) potentially occurring in Bay, Gulf, and Calhoun counties (**Table 4-20** of this document). This species list is expansive and represents a "first approximation" of species that could be potentially involved with Alternative Alignments.

Of the 57 wildlife species, 21 are federally-listed (endangered or threatened), one is a federal candidate species (red knot), one is protected by other federal acts (bald eagle), 23 are state listed (endangered, threatened, or species of special concern (SSC)), and 11 have a "consideration encouraged" designation. Of the 65 plant species included, eight are federally-listed, 52 are state listed, and five are identified as "consideration encouraged". While the focus of desktop and field surveys was on federally-listed wildlife and plants, and state-listed wildlife species, project biologists were instructed to be cognizant of all 122 species.

Upon further examination of individual species habitat requirements, current habitat conditions, and alignment locations, it became apparent that many of the 57 wildlife species identified in **Table 4-20** of this document had a low likelihood of occurring within alternative alignments or their associated buffers. Therefore, surveys were limited to those species that could be reasonably expected to occur within or in the vicinity of alternatives. While the focus of desktop and field surveys was on federally-listed wildlife and plants, and state-listed wildlife species, project biologists were instructed to be cognizant of all 122 species.

Sixteen (16) listed species (one wildlife and 15 plant species) were observed by project biologists within alternatives or associated buffers (**Table 8-59)**. Three plant species (white-birds-in-a-nest, Godfrey"s butterwort, and Florida skullcap) are all federally-threatened and all other species are state-listed.

Table 8-59: Listed Species and Species Elements Observed by Project Biologists within Build Alternatives or Associated 300-foot Buffers

Scientific Name	Common Name	Listing Status	Element	Alternative									
				8		14		15		17		10	
				Align	Buffer	Align	Buffer	Align	Buffer	Align	Buffer	Align	Buffer
Asclepias viridula	Southern Milkweed	CE, ST	Individual Plants			1		1					
Drosera intermedia	Spoon-leaved Sundew	ST	Individual Plants		1	2	3		1	1		1	2
Hymenocallis henryae	Henry's Spiderlily	CE, SE	Individual Plants	1	1					1	1		
Macbridea alba	White birds-in-a-nest	FT, SE	Individual Plants	1		1		1					
Oxypolis filiformis greenmanii	Giant Water Drop-wort	SE	Individual Plants	2	3	2	3	2	3		2		2
Phoebanthus tenuifolius	Narrow-leaved Phoebanthus	ST	Individual Plants	1	1	1	1	1	1				
Physostegia godfreyi	Apalachicola Dragonhead	ST	Individual Plants	2		3		2					
Pinguicula ionantha	Godfrey's Butterwort	FT, SE	Individual Plants		1						1		
Pinguicula lutea	Yellow Butterwort	ST	Individual Plants	1						1			
Polygonella macrophylla	Large-leaved Jointweed	CE, ST	Individual Plants	1	1	1	1	1	1				
Sarracenia psittacina	Parrot Pitcher Plant	ST	Individual Plants	5	5	7	5	4	4	1	2		2
Sarracenia purpurea	Decumbent Pitcher Plant	ST	Individual Plants			2	2			1		1	1
Scutellaria floridana	Florida Skullcap	FT, SE	Individual Plants	1	1	1	1	1	1				
Stachydeoma graveolens	Mock Pennyroyal	SE	Individual Plants					1					
Ursa americanus floridanus	Florida Black Bear	CE, ST	Scat and Tree Scratch Marks						1	2		2	
Verbesina chapmanii	Chapman's Crownbeard	CE, ST	Individual Plants		1		1		1				
			Total	**15**	**15**	**21**	**17**	**14**	**13**	**7**	**6**	**4**	**7**

FT: federal threatened, SE: state endangered, ST: state threatened, CE: consideration encouraged

8.6.11.1 Determination of Effects

One hundred and twenty-two species were originally considered. Two additional state-listed plants were identified by project biologists during field surveys. A determination of effect (DE) was conducted for a subset of these species, i.e., federally-listed and state-listed wildlife species, and federally-listed plant species. Determinations were based on several criteria including best available data and/or information stemming from direct field observations by project biologists, publically available occurrence data, desktop analyses, and published information regarding species distributions and habitat associations. A total of 48 species meeting the criteria above were considered and a DE was made for each species. No species under consideration were assigned a DE of "may affect, likely to adversely affect". It was determined that all five Alternatives would have "no effect" on 20 species (11 federally listed, 1 other federally-protected, and 8 state listed) and "may affect, but is not likely to adversely affect" 14 species (3 federally listed and 11 state listed). It was also determined that 14 species were split with respect to their potential involvement with Alternatives (10 federally listed and 4 state listed). For example it was determined that three Alternatives (8, 14, 15) would have "no effect" on the five sea turtle species under consideration while Alternatives 17 and 19 "may affect, but is not likely to adversely affect" the species. These five turtle species along with the other eight species were ultimately assigned a "may affect, but is not likely to adversely affect" DE. For species having a designation other than "no effect", BMP and species-appropriate protection measures such as pre-construction training and worksite signage may be employed as appropriate (See Gulf Coast Parkway ESBAR for additional details). These species determinations have been sent to USFWS for concurrence and informal consultation has been initiated.

A summary of species DE per alternative can be found in **Table 8-60** below. Detailed information on individual species is available in the in Section 4 of the EIS and in the Gulf Coast Parkway ESBAR.

Table 8-60: Determination of Effect (DE) per Species and Alternative

Common Name	Listing Status*	FLUCFCS Type	Basis for DE	Alternative Alignment (DE)				
				8	14	15	17	19
Gulf sturgeon	FT	510, 541	Habitat + Database	NE**	NE	MANLAA***	MANLAA	MANLAA
Green turtle	FE	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Leatherback turtle	FE	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Hawksbill turtle	FE	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Kemp's ridley turtle	FE	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Loggerhead turtle	FT	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Piping plover	FT	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
White bird's-in-a-nest	FT	814W, 817W, 832W	Observed (Individual Plants)	MANLAA	MANLAA	MANLAA	NE	NE
Godfrey's butterwort	FT	814W, 817W, 832W	Observed (Individual Plants)	MANLAA	NE	NE	MANLAA	NE
Florida skullcap	FT	814W, 817W, 832W	Observed (Individual Plants)	MANLAA	MANLAA	MANLAA	NE	NE
West Indian manatee	FE	510, 541	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Reticulated flatwoods salamander	FE	620, 621, 630, 640	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Indigo snake	FT	410, 434, 441, 443, 620, 630	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Southeastern snowy plover	ST	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Least tern	ST	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Black skimmer	SSC	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
American oystercatcher	SSC	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Florida black bear	ST	441W, 614, 620, 621, 630, 814W, 817W, 832W	Observed (bear sign)	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Little blue heron	SSC	640, 641, 510, 524	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Tricolored heron	SSC	640, 641, 510, 524	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Snowy egret	SSC	640, 641, 510, 524	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Limpkin	SSC	640, 641, 510, 524, 630, 621	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Brown pelican	SSC	541, 642,	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Barbour's map turtle	SSC	510, 510D	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Alligator snapping turtle	SSC	510, 510D	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Suwannee cooter	SSC	510, 510D	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Panama City crayfish (PCC)	SSC	641, 814W, 817W, 832W	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Bluenose shiner	SSC	510	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Total MANLAA				17	16	17	26	25
Total Federal Species MANLAA				6	5	6	11	10

*FE=Federally Endangered, FT=Federally Threatened, FO=Federal Other, SE=State Endangered, ST=State Threatened, SSC=Species of Special Concern (state)

** NE: No Effect

*** MANLAA: May Affect, but is Not Likely to Adversely Affect

The ESBAR report has been submitted to USFWS, review comments have been received, the report has been revised and is being resubmitted. USFWS concurrence with the findings of that report is pending.

Based on species observed by project biologists (**Table 8-59**), it is clear that all five Alternatives will likely have potential effects on listed species – mainly state-listed plants. While these field observations are informative, they were limited and opportunistic (governed by property access) and primarily serve to support the overall assessment of effects on species. A much wider array of species and habitat data were assessed in Section 8 of the ESBAR. Results of that analysis provide a more complete picture and indicate that, Alternatives 17 and 19 have the highest potential for effects on listed species while Alternatives 8, 14, and 15 have the lowest.

8.6.11.2 Potential Avoidance and Minimization Measures

Throughout the PD&E study, proactive measures such as conducting multiple habitat assessments (desktop and field) were used to avoid and/or minimize potential impacts to listed species. Every alignment currently under consideration was shifted/modified (where feasible) to varying degrees in order to avoid and/or minimize impacts to higher quality wetland and upland habitats that are more likely to harbor relatively high numbers of listed species. It is important to note that such "shifts and modifications" were also balanced against potential involvement with other resources such as wetlands and cultural resources. Furthermore, avoidance and minimization measures were also utilized in earlier stages of the PD&E process when additional corridors and alignments were dropped from consideration based upon potential resource impacts and public input.

8.6.11.3 Conservation Measures and Commitments

Proactive measures to avoid or minimize potential impacts to listed species and associated habitat have been identified in consultation with the agencies. Every alternative currently under consideration was shifted/modified to varying degrees in order to avoid and minimize impacts to listed species and their habitats. It is important to note that such "shifts and modifications" were also balanced against potential involvement with other resources such as wetlands and cultural resources. Furthermore, avoidance and minimization measures were also utilized in earlier stages of the PD&E process when additional corridors and alternatives were dropped from consideration based upon potential resource impacts and public input. Specific minimization measures and commitments have been included in the ESBAR reviewed by the resource agencies. Any measures not included in the initial submittal of the ESBAR were added to the subsequent revision. The complete set of mitigation and/or protection measures identified for consideration include:

- Conducting pre-construction surveys at appropriate times for listed species to enhance assessments concerning location and population status. For example, since gopher tortoise burrows and habitat found within the alternatives and associated 300-foot buffers may be impacted, FFWCC Gopher Tortoise Permitting Guidelines pertaining to surveying, excavating, and relocating will be followed once a preferred alternative is selected.

- Avoiding potential impacts to manatees. Depending upon the methodology used for bridge installation, potential protection measures could include stopping work if a manatee comes within a specified distance of in-water work, posting observers to watch for manatees, and/or monitoring turbidity barriers for potential entanglement. *Standard Manatee Conditions for In-Water Work, 2011*, developed by the FFWCC and the USFWS will be followed, as necessary. Although demolition is not anticipated, if explosives are to be utilized, *then the Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* will also be implemented.

- Minimizing direct/indirect wetland impacts, e.g., sedimentation, by utilizing appropriate stormwater design and BMP at wetland and stream crossings during construction. Regulatory agencies will have the opportunity to review 60% plans that will include the proposed design for crossing structures via the joint Environmental Resource Permit (ERP) application. The 60% plans submitted with the ERP application will also contain a design erosion control plan that will be subject to regulatory agency review and comment. Design plans will follow NWFWMD regulations requiring that an operating permit be obtained for the constructed stormwater facilities.

- Per the suggestion of the USFWS, a survey for bald eagle nests within the preferred alternative and associated buffers will be conducted one year prior to construction.

- If seasonally-appropriate surveys for federally-listed plants potentially associated with the preferred alternative are conducted, the project sponsor will also consider and avoid potential impacts to state- listed plants, where practical.

- Implementing *Standard Protection Measures for the Eastern Indigo Snake* during construction.

- Implementing *Construction Special Provisions Gulf Sturgeon Protection Guidelines* during construction.

- Utilizing "sea turtle friendly" lighting strategies on bridges, if deemed necessary.

- Conducting a Phase II Reticulated flatwoods salamander (RFS) field evaluation for a representative sample of potential ponds within 1,500 feet of the preferred alternative during design and permitting. A re-assessment of the DE will be based on the results of the Phase II field evaluation.

- Facilitating movement of black bears via wildlife crossings, if deemed necessary.

- Utilizing signage informing motorists of potential wildlife hazards, e.g., deer and bear crossings, if deemed necessary.

- Invasive/exotic species will be managed and controlled in accordance with FDOT"s *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The contractor will be required to monitor turf areas and remove all competing vegetation, pest plants and noxious weeds as listed by the Florida Exotic Plant Pest Council, Category 1 *List of Invasive Species*. Insecticides and herbicides used to control invasive/exotic species will be approved by the Florida Department of Agriculture.

- All Reasonable Assurance measures, as described in **Section 4.3.14** of the Draft EIS, will be met.

In addition, wildlife passages may be provided to reduce habitat fragmentation and limit roadway mortality. Wildlife passages would be installed in appropriate locations in accordance with FDOT Wildlife Crossing Guidelines (see Appendix B of the ESBAR).

8.6.11.4 Take Permits

The need for some wildlife and/or plant "take" permits will not be determined until a preferred alternative is selected and additional species surveys are conducted. Potential required permits from federal and/or state agencies will be identified as necessary in the final EIS. Since resolution of all agency concerns will not be achieved with the completion of this Draft EIS, FDOT will utilize the Reasonable Assurance Process discussed in **Sections 4.3.5** and this section to provide assurance that agency concerns will be addressed in the remaining project phases.

8.6.12 Contamination

The initial investigation for potential contamination sites was conducted for the original eighteen corridors. Twenty-seven (27) potential contamination sites (**Figure 4-10** of this report) were identified through a search of regulatory agency databases, review of historical aerial photographs, and on-site field reviews. Utilizing FDOT"s risk ranking system, each potential contamination site was assigned a level of risk based on the risk of the project alternatives having involvement with the site and the site"s potential for the presence of contamination.

After the identification of the alternatives for further study, the number of possible sites with contamination having potential for involvement with the project was reduced to nineteen (19). The 19 potential contamination sites were reevaluated for involvement with the project alternatives. Any potential contamination site that fell within 500 feet of the proposed alternatives was included in the evaluation in the event groundwater contamination was present, as a groundwater contamination plume has the potential to migrate into the proposed right-of-way. Seven of the 19 previously-identified sites were found to be located within 500 feet of one or more of the project alternatives **(Figure 8-29**). Of the seven sites, one site (Hancock"s Cut-Off) was a Medium Risk site and six sites were Low Risk sites. **Table 8-61** presents the sites and risk rankings assigned to each site as a result of the contamination screening. **Table 8-62** shows those sites with which the alternatives have the potential to be involved.

Figure 8-29: Potentially Contaminated Sites within the vicinity of the Gulf Coast Parkway Alternatives

Table 8-61: Risk Rankings of Potentially Contaminated Sites in the Gulf Coast Parkway Study Area

Map ID	Parcel Name	Facility ID Number	Contamination Concern	UST* Count	AST** Count	Facility Type	Facility Status	Risk Ranking	Alternative Involvement
5	Tom Thumb #133 4729 Hwy 231 Panama City, FL 32404	003798647	Gas/Diesel	1	0	Retail Station	Open	Low	**8 and 17**
6	Hancock's Cutoff 4808 CR 390 Panama City, Fl 32404	8626479	Gas/Diesel	1	0	Retail Station	Open	Medium	**8 and 17**
11	Jerry Pybus Electric, Inc. 1327 N Tyndall Pkwy Panama City, FL 32404	9803736	Gas	0	1	Fuel user/ Non-retail	Open	Low	**8, 14, 15, 17, and 19**
12	Ace Hardware 3911 15th Street Panama City, Fl 32404	None	Chlorine/Paint	0	1	Retail	Open	Low	**8, 14, 15, 17, and 19**
15	Break Away Hauling 191 Guilford Drive #05 Port St. Joe, Fl 32456	9807127 / 100276406	Diesel	0	2	Fuel user/ Non-retail	Open	Low	**8, 14, and 15**
17	Panama City Properties Old Allanton Road and Apaloosa Way Panama City, Fl 32404	9700073	Unknown	1	1	Fuel user/ Non-retail	NA	Low	17 and 19

*underground storage tank
** aboveground storage tank

Table 8-62: Build Alternatives' Involvement with Potential Contamination Sites

Map ID	Potential Contamination Sites	Alternatives				
		8	14	15	17	19
5	Tom Thumb #133 4729 Hwy 231 Panama City, FL 32404	X			X	
6	Hancock"s Cutoff 4808 CR 390 Panama City, Fl 32404	X			X	
11	Jerry Pybus Electric, Inc. 1327 N Tyndall Pkwy Panama City, FL 32404	X	X	X	X	X
12	Ace Hardware 191 Guilford Drive #05 Port St. Joe, Fl 32456	X	X	X	X	X
15	Break Away Hauling 191 Guilford Drive #05 Port St. Joe, Fl 32456	X	X	X		
17	Panama City Properties Old Allanton Road and Apaloosa Way Panama City, Fl 32404				X	X

All Build Alternatives have involvement with potentially contaminated sites. Alternative 8 and Alternative 17 have the potential for involvement with five (5) sites. Alternatives 14, 15, and 19 have potential involvement with three (3) sites. The No Build Alternative would not have involvement with any of the potential contamination sites.

The sites with which all Build Alternatives have the potential for involvement are Jerry Pybus Electric, Inc. and Ace Hardware, both Low Risk sites. Jerry Pybus Electric, Inc. has one (1) 8,000 gallon aboveground storage tank. Although this site has on no reported discharges, it was assigned a low risk ranking based on its being within 500 feet of the project alternatives. Ace Hardware, also located within 500 feet of the project alternatives, sells, stores, and mixes paint and other oil based products. The field inspection also revealed the presence of an aboveground storage tank, containing chlorine.

Alternatives 8 and 17 are the only alternatives with the potential for involvement with Tom Thumb #133 and Hancock‟s Cutoff, a Medium Risk site. Tom Thumb #133 is a gas retail station located west of the intersection of Nehi Road and US 231 on CR 390. It has been assigned a LOW RISK ranking as it is adjacent to terminus of Alternatives 8 and 17, although no evidence of contamination problems has been found. Hancock‟s Cut-off, also a gas retail station, is west of the center line of Nehi Road and US 231. There were two separate discharges on 3/24/94 and 12/1/95. As of March 4, 2010, the clean-up work was satisfactorily completed, including removal of seven (7) underground storage tanks removed. Two 1200 gallon underground storage tanks, installed in December 2007, are in service. Although the site has been remediated, it has been given a Medium Risk ranking due to the potential for low levels of contamination to remain on site and its location of less than 500 feet from Alternatives 8 and 17.

Alternatives 8, 14, and 15 have the potential for involvement with one (1) Low Risk site, Break Away Hauling. Break Away Hauling has two (2) 800 gallon vehicular diesel aboveground storage tanks that were installed in 2005. No spills were documented on FDEP‟s OCULUS website however several operational issues were not in compliance as of December 2007. Therefore, this site, which is within 500 feet of Alternatives 8, 14, and 15, received a Low Risk ranking.

Alternatives 17 and 19 would have involvement with Panama City Properties, which is known to have had both an above ground storage tank and a below ground storage tank, but no other information regarding the status of these tanks was available. Since this site is adjacent to Alternatives 17 and 19 it was assigned a Low Risk ranking.

The State of Florida has evaluated the proposed right-of-way and has identified potentially contaminated sites for the various proposed alternatives. Sites having medium or high risk of contamination concerns will be re-evaluated prior to construction. If required, a Level 2 investigation will be performed to verify the type and extent of contamination present. Based on the findings of the updated file review and/or Level 2 investigation, the design engineers may be instructed to avoid the area(s) of concern or to include Special Provisions with the design plans. Actual cleanup will take place prior to construction, if feasible. Procedures specifying the contractor‟s responsibilities in regard to encountering petroleum contaminated soil and/or groundwater are set forth in the FDOT *Standard Specifications for Road and Bridge Construction*. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, prior to construction.

8.6.13 Farmlands

Through coordination with the NRCS, it has been determined that the only involvement with Prime or Unique Farmlands occurs with Alternative 15. The NRCS identified Prime Farmlands on either side of the Alternative 15 alignment (**Figure 8-30**). Therefore, the potential for the Alternative 15 to impact Prime Farmlands is unavoidable unless the alignment is altered significantly. **Table 8-63** provides a summary of the Prime and Unique Farmland Impacts.

Figure 8-30: Alternative 15 Involvement with Prime Farmland

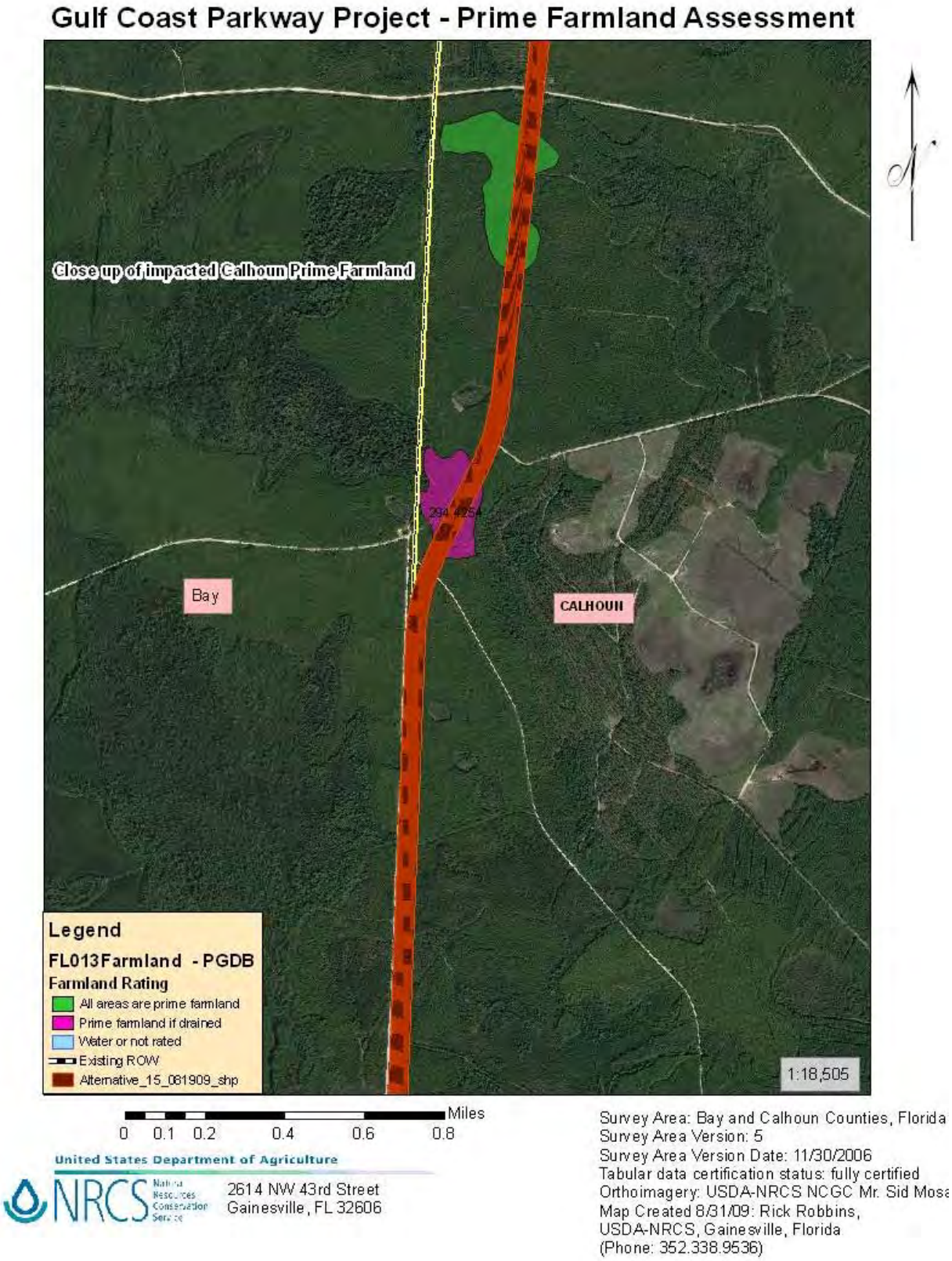


Table 8-63: Prime and Unique Farmland Impacts

Alternative	Prime Farmland Acres*	Unique Farmland Acres	Crop Type
8	0	0	N/A
14	0	0	N/A
15	14.98	0	N/A
17	0	0	N/A
19	0	0	N/A

* Prime Farmland Acres: Acres derived from Soil Survey Geographic (SSURGO) products for Bay, Gulf, and Calhoun Counties. Prime Farmland map units were clipped based on alternatives and acreage calculated.

Since Prime Farmland would be affected by Alternative 15, a *Farmland Evaluation Form* (**Appendix C**) for Alternative 15 was completed in accordance with the requirements in 7 CFR 658.5(b) and submitted for a determination of significance by the NRCS. The NRCS determined that the relative value of this Prime Farmland scored 71.19. Part 2, Chapter 28 of the FDOT, *PD&E Manual* states that sites receiving a total score of less than 160 points are to be given a minimal level of consideration for protection and no additional sites are required to be evaluated. Alternative 15 did not receive a score of 160 or greater; therefore, no other alignments for Alternative 15 were evaluated.

8.6.14 Navigation

All of the Build Alternatives will cross the Gulf ICWW, a navigable waterway, at one of either two locations: where it passes through East Bay near Allanton Point or where it is congruent with Wetappo Creek west of Overstreet. The ICWW in the Florida Panhandle is an inland waterway, known as the Gulf ICWW, which extends from Carrabelle, Florida to Brownsville, Texas. Completed in 1949, it has a controlling depth of 12 feet and was designed primarily to handle barge traffic. In addition, recreational vessels use the waterway to access the Gulf of Mexico.

The ICWW is vital for the efficient and secure transportation of freight throughout the United States. The USACE regulates and maintains the ICWW and considers this resource their highest level of importance. The USCG has responsibility for approving the location, alignment, and appropriate navigational clearances for bridges over navigable waterways. Coordination with both the USACE and USCG has occurred during the project and will continue throughout the project‟s development.

Navigational guidelines and protocol for the construction of bridges are provided pursuant to 23 CFR Part 650.801-809 (Navigational Clearances for Bridges). A USCG permit is required when a bridge crosses waters which are: 1) tidal and used by recreational boating, fishing, and other small vessels 21 feet or greater in length, or 2) used or susceptible to use in their natural condition or by reasonable improvement as a means to transport foreign commerce. The USCG has established guide clearances for bridges over certain frequently navigated waterways. The guide clearances are considered to provide adequate clearance for the reasonable needs of navigation but are susceptible to change under particular circumstances. Where guide clearances are not established, the horizontal and vertical clearances for a proposed bridge project are determined on a case by case basis.

In the study area, the only navigable waterway with an established guide clearance is the ICWW which has a vertical clearance requirement of 65 feet and a horizontal clearance requirement of 150 feet. Bridges upstream and downstream from the proposed ICWW crossing at Allanton Point are the US 98

(DuPont) Bridge and the CR 386 (Overstreet//W. G. Hardy) Bridge. Both bridges provide 150 feet of horizontal clearance. While the Overstreet Bridge (constructed in 1988) provides 65 feet of vertical clearance, the older DuPont Bridge (constructed in 1965) provides only 50 feet of vertical clearance.

Wetappo Creek does not have a guide clearance established. It is primarily used for recreational purposes. An initial site survey verified usage of the waterway by high-mast sailboats and other recreational boats (**Appendix P**). Vessels accessing the waterway are limited to those that can pass under the existing DuPont and Overstreet Bridges. Any vessels requiring clearance higher than 50 feet but below 65 feet are restricted to the Overstreet Bridge for entry to or exit from East Bay and Wetappo Creek. As vessels travel upstream from the East Bay entrance to Wetappo Creek, the more narrow the waterway becomes until the creek passes under the at-grade crossing (bridge) by Pleasant Rest Road. From this point, only vessels such as small fishing boats, canoes, and kayaks can navigate further upstream (see **Appendix P**).

Wetappo Creek has also been reported to provide harbor to many vessels of varying size during hurricanes. Some of these vessels could necessitate that any bridge constructed across the Wetappo Creek at the proposed location provide high-level clearance in order for its continued use as a safe haven during severe weather.

The alternatives that cross Wetappo Creek (Alternatives 8, 14, and 15) cross the creek where it is immediately adjacent to the ICWW (**Figure 8-31**). Since the crossing of ICWW requires a high-level bridge and the location of the proposed crossing of Wetappo Creek is so close to the crossing of the ICWW, the proposed crossing of both waterways will be on the same 65-foot high structure. The total structure length is estimated to be 7,000 feet. This length of structure would span both waterways and the adjacent emergent marsh.

Figure 8-32 shows the location of the proposed 65-foot high level crossing of East Bay by Alternatives 17 and 19. This structure is estimated to be approximately 9,100 feet in length. This length of structure is needed to span the width of East Bay.

Figure 8-31: Wetappo Creek and the ICWW Crossing by Alternatives 8, 14, and 15

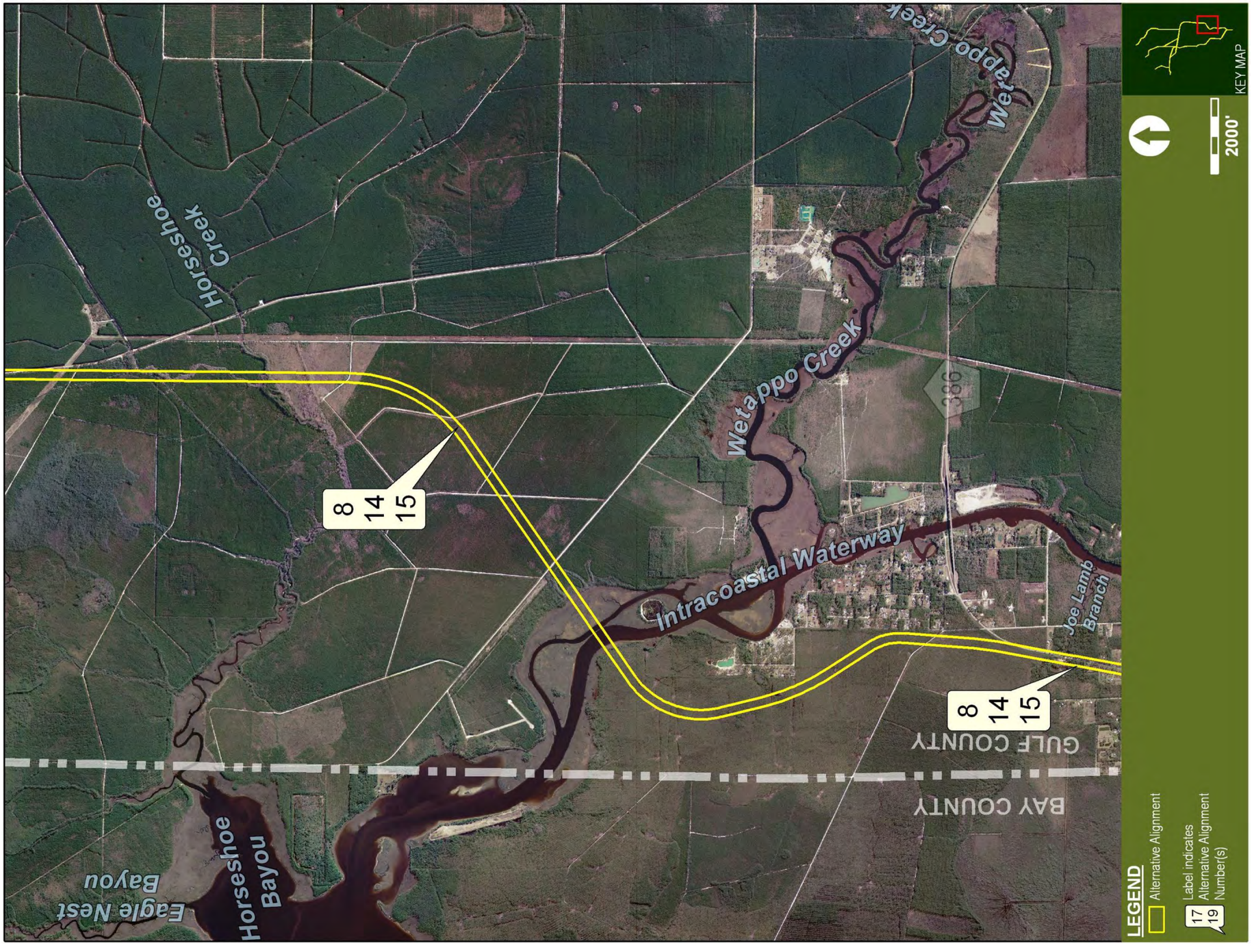
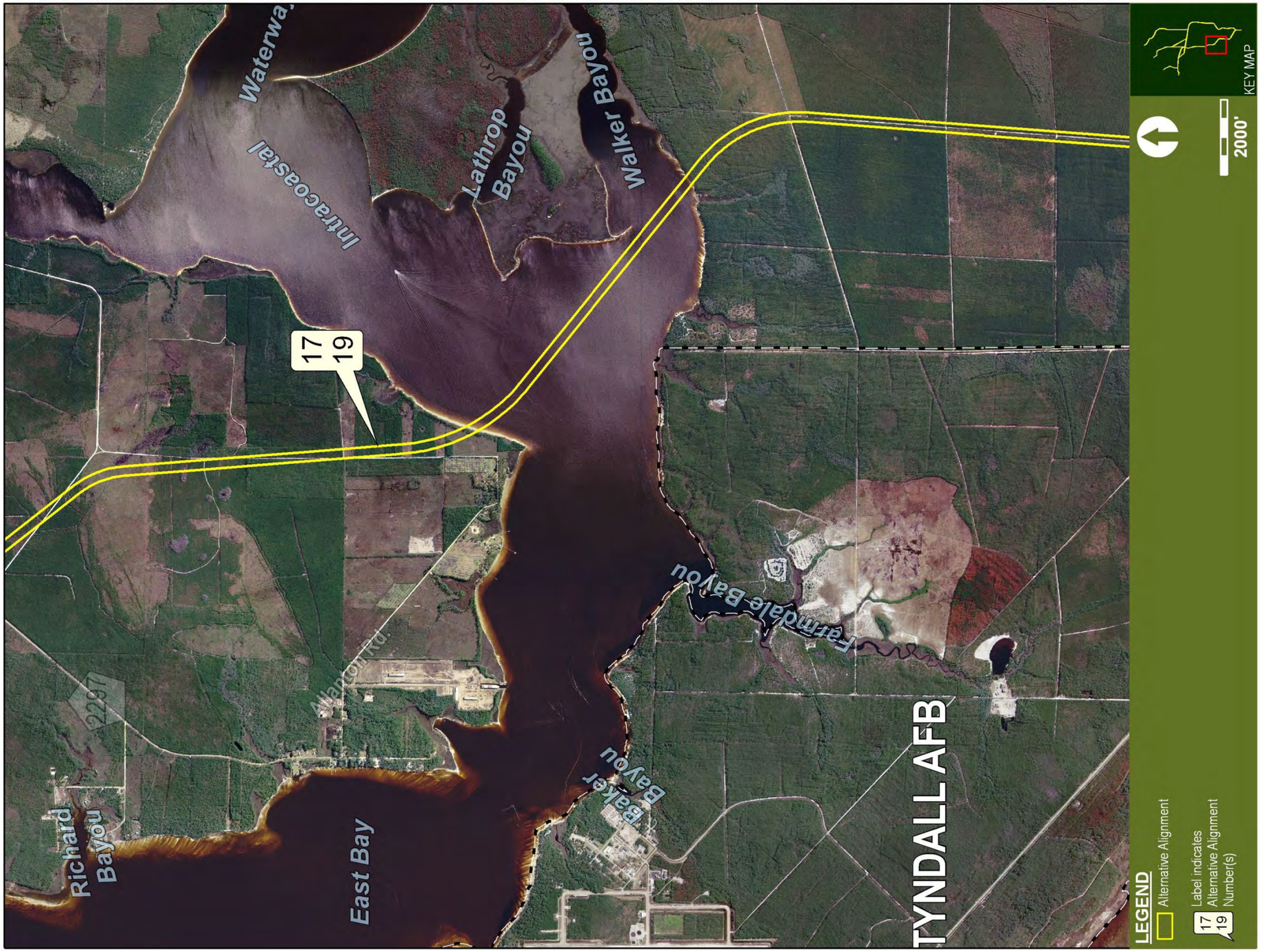


Figure 8-32: East Bay Crossing by Alternatives 17 and 19



the proposed minimum vertical clearance for the bridges across navigable waterways is presented in **Table 8-64**. **Table 8-65** summarizes the proposed horizontal clearances for the navigation channels of the waterway crossings. The crossing of the ICWW in East Bay is proposed to have the same vertical (65 feet) and horizontal clearances as the DuPont and Overstreet bridges. The ICWW Wetappo crossing is also proposed to have 65 feet vertical clearance. The required horizontal clearance at this location is yet TBD . Coordination with the USCG is ongoing and when this information is provided it will be included in the Final EIS.

Table 8-64: Proposed Vertical Clearances for Gulf Coast Parkway Bridges over Navigable Waters

Waterway	Alternatives				
	8	14	15	17	19
East Bay ICWW	N/A	N/A	N/A	65 ft.	65 ft.
ICWW at Wetappo Creek	65 ft.	65 ft.	65 ft.	N/A	N/A
Wetappo Creek at ICWW	65 ft.	65 ft.	65 ft.	N/A	N/A

Table 8-65: Proposed Horizontal Channel Clearances for Gulf Coast Parkway Bridges over Navigable Waters

Waterway	Alternatives				
	8	14	15	17	19
East Bay ICWW	N/A	N/A	N/A	150	150
ICWW at Wetappo Creek	150	150	150	N/A	N/A
Wetappo Creek	TBD	TBD	TBD	N/A	N/A

Because the bridge across the ICWW, whichever crossing site is selected, will be constructed in accordance with FDOT structure design guidelines and will meet USCG requirements for bridges over navigable waters, including the provision of aids to navigation such as lighting, the structure should not provide a hazard to vessels using the waterway. However, should the bridge construction require in-water work, there could be a potential for conflicts between construction activities and vessels on the waterway. Activities that could result in blockage of a channel or interrupt traffic flow are required to obtain authorization from the USCG. FDOT *Standard Specifications for Road and Bridge Construction* requires under Section 103-1.3 that the USCG be provided 60 days in advance with drawings showing the location of temporary work structures relative to the navigable waterway, lighting on the temporary work structures that meets the USCG requirements, and notification to mariners of construction in or near the navigation channel. These measures should be sufficient to minimize conflicts between bridge construction activities and vessels navigating the either the ICWW through East Bay or the ICWW/Wetappo Creek.

FDOT will work closely with the USCG to ensure that this project meets all navigational requirements and that the bridge is constructed in a manner that will meet the needs of waterway users. FDOT will meet with the USCG to explain in more detail its plans concerning the bridge and to fully accommodate USCG requirements. FDOT will utilize Section – 103-1.3 of the *Standard Specifications for Road and Bridge Construction* to minimize conflicts between construction activities and waterway users.

8.7 EVALUATION MATRIX

8.7.1 Evaluation Criteria

The evaluation criteria used to compare alternatives consists of quantifiable and non-quantifiable criteria. The quantifiable evaluation was accomplished with a series of matrices first to determine if there were differences among the alternatives in meeting purpose and need; second to compare alternatives involvement with multitude of categories comprising the socioeconomic, cultural, natural and physical environments, and third to compare the costs (engineering, right of way, and construction) of each alternative. The data in the matrices were developed by overlaying the conceptual designs for each Build Alternative on raster-based aerial photography and utilizing other appropriate data layers, field verification, and environmental analysis to determine the potential involvement of each alternative. The results of these comparative analyses are presented in Section 8.7.2, but for a detailed discussion of the DE on the resources refer to Section 4 of the EIS and/or the supporting technical documents.

Purpose and Need Evaluation Criteria

The following section provides a brief discussion on the methodology used for evaluating each Purpose and Need Criteria.

Reduced Travel Times*:* A description of the methods used to estimate travel times and distances is given in the following paragraphs. To determine whether a proposed corridor would meet the criteria of reducing travel times, the calculated travel time for the proposed alignment was compared to the actual travel time for the existing routes. The actual times were measured by traveling the existing routes during morning and afternoon peak-hour traffic times, using an accepted traffic engineering methodology.

Once the time to travel the existing routes was established these amounts were given a value of 1. Each proposed alignment‟s time to reach the respective destinations was then calculated as a percentage of the existing routes. Therefore a proposed alignment was measured for its performance in achieving the Purpose and Need Criteria by how much it‟s time value was less than 1. The existing routes traveled were:

To Employment in Panama City:	From CR 386 west on US 98 through Tyndall AFB, across the DuPont Bridge to the intersection of US 98/CR 391/US 231/SR 75 (Harrison Avenue), then south on SR 75 to 11th Street.
To Intermodal Distribution Center:	From CR 386 west on US 98 through Tyndall AFB, across the DuPont Bridge to US 231, and along US 231 to the entrance to the IDC (freight transfer facilities) at Bayline Road.
To NWFBIA:	From CR 386 west on US 98 through Tyndall AFB, across the DuPont Bridge to US 231, and along US 231 to CR 2321, along CR 2321 to SR 77, along SR 77 to CR 388, and then along CR 388 to the entrance to the proposed airport.

Tourist Route: From the Bayline Road and US 231 intersection south to the intersection of US 231 and US 98, east on US 98 (15th Street/Tyndall Parkway), then south across the DuPont Bridge, through the Tyndall AFB to CR 386.

Again, the time to travel the proposed routes is shown as a percentage of 1. The routes selected for calculating the Alternative Alignments" travel times are described as follows:

To Employment in Panama City: The intersection of 11th Street and SR 75 (Harrison Avenue) was selected as the destination for an employment center in Panama City based on it being approximately in the center, geographically, of the Central Business District. The route taken to this location was provided by traffic engineers who noted that traffic would follow US 98 to SR 75 (Harrison Avenue) to 11th Street, rather than travel from US 98 to 11th Street to SR 75 (Harrison Avenue). This assessment was made because much of 11th Street west of US 98 (Tyndall Parkway) is through a residential area with many cross streets.

Travel time to the SR 75 (Harrison Avenue)/ 11th Street intersection was calculated for the alternative alignments based on the time it took to travel along the proposed corridor to Tram Road, then west on Tram Road to US 98, west on US 98 to the intersection of US 98/CR 391/US 231/SR 75 (Harrison Avenue), then south along SR 75 (Harrison Avenue) to 11th Street.

To the Bay County Intermodal Distribution Center: Travel time to the IDC (freight transfer facilities) was based on traveling the proposed alignments to US 231 and along US 231, to the entrance to the IDC, at Bayline Road.

To the NWFBIA: Travel time to the proposed new airport was based on traveling the proposed alignment to its intersection with US 231 and from the proposed alignment"s intersection with US 231 to CR 2321 and from CR 2321 to SR 77, along SR 77 to CR 388, and along CR 388 to the entrance of the NWFBIA.

Travel times for tourists were based on the time it would take to travel from the intersection of Bayline Road and US 231 to the intersection of CR 386 with US 98 on the proposed corridor.

Access to Enterprise Zones: Enterprise zones in Gulf County have been designated along US 98 and CR 386. These are designated by the Office of Tourism, Trade, and Economic Development of the Executive Office of the Governor and are located in areas of the state where high poverty rates and little economic growth persist. All of the proposed alignments improve the connection between the enterprise zones and US 231 by avoiding the congestion on Tyndall Parkway (US 98) and in Panama City. Travel times were not calculated because the enterprise zones were so large; however, for enterprise zones along CR 386, particularly in the vicinity of Overstreet, the amount of acres of right-of-way that would have involvement through the Enterprise Zones was calculated. The greater the acreage the better the alignment performed.

Relieve Congestion on Existing Roadways: Improved roadway capacity was based on an improved level-of-service on specific roadway segments (US 98, US 231, SR 22, and Star Avenue) as compared to the level-of-service on those segments under existing conditions. In order to determine the comparative performance of each of the alignments the total amount of roadway sections (along US 98, US 231, SR 22, and Star Avenue) that will experience an improved level-of-service in the design year over the no-build condition were counted. This information was carried over from Table 2-22: Summary of Gulf Coast Parkway Alternatives" LOS Effects on Existing Roadways.

Reduce Distance Traveled: Improving the security for Tyndall AFB was based on distance traveled. The existing route was measured based on the detour route which would need to be taken if US 98 through Tyndall AFB was closed. This route would be US 98 to SR 71 into Wewahitchka; then along SR 22 west back to US 98 (Tyndall Parkway). As with the methodology for travel times, the existing detour route distance was then set to a value of 1, all of the alignment distances were then measured as a percentage of the existing detour route. Therefore an alignment was measured for its performance in achieving this Purpose and Need Criteria by how much its distance value was less than 1. The distance traveled was measured for the alignments utilizing the alignments themselves to their intersection with US 98 at Tram Road.

Improved Emergency Evacuation Route: Currently, evacuation out of coastal Gulf County is accomplished by traveling US 98 to SR 71, or US 98 to CR 386 to SR 71. In southeast Bay County, evacuees travel US 98 through Tyndall AFB, across the high-level DuPont Bridge, continuing north and west on US 98 to US 231.

While all alternative alignments provide improved hurricane evacuation, the further north each alignment‟s connection was with US 231 the better it improves emergency evacuation. This was determined since the further north along US 231 the connection, the less involvement there would be with congestion on the segments of US 231 closer to Panama City; and therefore the quicker evacuees are able to move away from the storm surge zones and coastal high hazard areas and onto I-10.

Additional consideration was given for those alignments that had a more direct (shorter) route from US 98 and CR 386 in Gulf County to US 231 in Bay County, which are specifically Alignments 17 and 19. Since the shorter route will provide a quicker travel time to US 231, this will also improve hurricane evacuation times.

Social, Physical, and Natural Environmental Evaluation Criteria

The evaluation of environmental impacts is discussed in more detail in the EIS. In addition, individual technical reports were prepared to further document the environmental process and required agency coordination.

Estimated Costs

The total project costs reflect the estimated engineering costs, construction costs, and right-of-way costs required for the alternative alignments. The engineering costs were calculated as a percentage of the roadway and bridge construction costs. The roadway and bridge construction costs were calculated using FDOT LRE methodology of per lane mile costs for roadways and per square foot costs for bridges. The right-of-way costs were calculated using current market values and include land, site improvements, business damages, relocations, and other administrative costs. The estimated costs of the Build Alternatives have been summarized in Section 8.5.4 of this report. Supporting documentation for the construction and right-of-way cost estimates are included in Appendix J.

Public and Agency Coordination

Local governments, resource agencies, non-governmental organizations, stakeholders, and the public have been involved in the project from the very beginning in 2005 and at various stages of the project‟s development up to and including the preparation of this document. The input provided by these groups has been a vital part of the identification of alternatives and the evaluation of impacts at various stages throughout this study (described in **Section 8.8**). Coordination with these groups will continue to be

solicited as the project progresses through the public hearing and preparation of the Final EIS/ Record of Decision (ROD).

8.7.2 Alternatives Evaluation Methodology

The evaluation of alternatives involved a comparison of each alternative‟s involvement with the socioeconomic, cultural, natural, and physical environments of the study area. This analysis was based on the full four-lane typical section. The selection of datasets for inclusion in this analysis was accomplished through coordination with the Environmental Transportation Advisory Team (ETAT) and particularly the cooperating agencies for this study. Most data identified by the cooperating agencies are GIS desktop level information. However, the data for sensitive resources such as wetlands, listed and endangered species, noise, contamination, cultural and historic impacts, as well as right-of-way and relocation information, were all field-evaluated.

Because of the large number of issues involved and the variation in the alternative alignments, some alternatives avoid impacts better than others for one specific issue while performing worse in regards to a different issue, making the evaluation of alternatives complex and the justification for the selection of a particular alternative difficult. Likewise, the alternatives‟ ability to satisfy the purpose and need, minimize cost, ensure the most efficient traffic operations, and be publicly acceptable also factor into the decision. Therefore, a two-step methodology for quantifying and comparing the alternatives‟ was developed.

The first step (Category Evaluation) compared how well each alternative performed in each of four Evaluation Categories (purpose and need, environmental, cost, and public preference). The second step (Overall Performance Evaluation) compared how well each alternative performed when their Category Performance Ranks were combined. To assist in understanding the explanation of the evaluation process, which is described below, **Table 8-66** explains the various terms used to describe the evaluation process.

Table 8-66: Evaluation Procedure Definitions

Terms	Definition
Categories	These are the four categories under which each alternative is evaluated
Criteria	Each Category has criteria that are characteristic of the category. For instance, the Environmental Category includes criteria such as relocations, wetland impacts, floodplain impacts, etc.
Criterion Rank	A Criterion Rank represents how well, or poorly, an alternative performed (or ranked) when compared to the other alternatives. The ranks range from 1 (best) to 6 (worst) because there are six alternatives, including the No Build Alternative.
Category Score	The sum of an alternative's Criterion Ranks within a Category.
Category Rank	The Category Rank represents an alternative's performance compared to the other alternatives in the Category. The Category Rank is obtained by ranking each alternative's Category Score from 1 (best) to 6 (worst) to determine how an alternative performed in that Category.
Combined Performance Score	The total of an alternative's four Category Ranks.
Overall Rank	How well an alternative's Overall Performance Score compared to the other alternatives' Overall Performance Scores.

The Category Evaluation procedure was, as follows: Four Categories (purpose and need, environment, cost, and public preference), shown in **Tables 8-67 to 8-70,** were identified for comparing the alternatives. Each Category has a set of Criteria that by which an alternative‟s involvement could be measured and compared. That measure may be expressed as a percentage, AADT, acres, number of sites, etc. depending on what is the appropriate unit of measure for that particular Criterion. The expression of that measure represents the alternative‟s involvement with, or impact on, the criterion.

Each alternative‟s involvement with a particular Criterion is calculated and then compared to the other alternatives so that it can be ranked from 1 (best) to 6 (worst). This ranking is shown in the second column under the Criterion in the Category tables.

The alternatives are calculated and ranked for all the Criteria, and then the ranks are totaled across the Category to obtain an overall Category Score (second to last column in each Category table). The alternatives‟ Category Scores are then ranked from 1 (best) to 6 (worst) to provide the Category Rank which is shown in the last column in each Category table. The Category Rank reflects the alternatives‟ performance in comparison to each other in a particular Category.

While it is important to consider each alternative‟s involvement at the criterion level determining an overall assessment of an alternative‟s performance from this perspective is not possible. This is mainly because the number of Criteria in each Category is not equal and this creates unequal weight between the Categories. Therefore, to ensure that equal consideration was given to each Category, an Overall Performance evaluation was conducted.

The Overall Performance evaluation was based on a comparison of each alternative‟s performance when the four Category Rankings were combined. **Table 8-71** shows each alternative‟s Category Scores (left column under the Evaluation Category) and Category Rankings (right column under the Evaluation Category) for each Category**.** The Category Rankings in each Category are totaled to determine the alternatives‟ Combined Performance Score (column second from right). The Combined Performance Scores are then ranked from 1 (best) to 6 (worst) to obtain the alternatives‟ Overall Rank (last column in **Table 8-68**).

8.7.3 Summary of Alternatives Comparative Evaluation

Table 8-67 through **Table 8-71** presents the comparison of alternatives. These matrices do not take into account mitigation measures that will be employed to offset impacts because mitigation costs are included in the estimated costs and because mitigation would be applied to the impacts of all build alternatives. The following discussion summarizes the alternatives performance in each of the four evaluation categories.

Table 8-67: Purpose and Need Performance Category Ranking

	Mobility								Security		Economic Development						Evacuation		Plan Consistency		Results	
	Relieve Congestion on Existing Roadways		New Connections to Network Roadways		Reduce Travel Times to Employment in Panama City		Improve Travel Time to NWFBIA		Improve Security of Tyndall AFB by providing a shorter Alternate Route		Improvements Through Enterprise Zones		Provide More Direct Route to Freight Transfer Facilities		Provide Direct Route for Tourists to Coastal Gulf County		Hurricane/ Emergency Evacuation Distance to Connection to US 231**		Connection to Future Planned Projects		Category Score	Category Rank
Alternatives	Number of Road Sections Benefited	Rank	Number	Rank	%	Rank	%	Rank	%	Rank	Acres	Rank	%	Rank	%	Rank	Miles	Rank	Yes/No	Rank	Score	Rank
No Build	0	6	0	6	1	6	1	6	1	6	0	6	0	6	0	6	None***	6	N	3	57	6
8	9	1	4	1	0.95	3	0.8	2	0.6	3	92.6	1	0.83	5	0.83	5	3.79	5	Y	1	27	4
14	7	3	3	3	0.95	3	0.84	4	0.6	3	92.6	1	0.67	2	0.67	1	8.15	2	N	3	25	3
15	7	3	3	3	0.95	3	0.91	5	0.6	3	92.6	1	0.78	4	0.78	4	12.45	1	N	3	30	5
17	8	2	4	1	0.88	1	0.76	1	0.54	1	17	4	0.71	3	0.67	1	5.27	4	Y	1	19	1
19	7	3	3	3	0.88	1	0.82	3	0.54	1	17	4	0.65	1	0.67	1	8.15	2	N	3	22	2

Table 8-68: Environmental Involvement Category Ranking

	Species						Conservation		Wetlands						EFH		Floodplains				Water Quality					
	Black Bear Kills		PCC Range		Field Surveyed Threatened and Endangered Species		Conservation Areas		Florida Land Use, FLUCFCS* Field Evaluated Wetlands		Preliminary Uniform Mitigation Assessment Methodology (UMAM)		Field Surveyed Threatened and Endangered Species		Involvement with Emergent Marsh		100-Year Floodplains (FEMA & Digital Flood Insurance Map (DFIRM)		Longitudinal Encroachments		Class 1 Drainage Basins		Verified Impaired Waters		Named Waterway Crossings	
Alternatives	Sites	Rank	Total Acres	Rank	Total Acres	Rank	Total Acres	Rank	Total Acres	Rank	Functional Loss	Rank	Sites	Rank	Acres	Rank	Total Acres	Rank	In Feet	Rank	Total Acres	Rank	Total Acres	Rank	Number	Rank
No Build	9	3	0	0	0	1	0	1	0	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	0	1
8	9	3	119	0	17	3	0	1	339	2	203	2	17	3	6.2	4	358	4	1,000	2	18	5	651	4	11	4
14	9	3	36	0	16	2	0	1	504	4	303	5	16	2	6.2	4	438	6	1,000	2	84	6	671	5	14	6
15	9	3	36	0	17	3	0	1	508	5	299	4	17	3	6.2	4	423	5	5,500	6	198	2	794	6	13	5
17	1	1	119	0	26	6	0	1	439	3	268	3	26	6	0	1	202	2	1,000	2	18	4	600	2	5	2
19	1	1	36	0	25	5	0	1	575	6	349	6	25	5	0	1	273	3	1,000	2	84	2	602	3	6	3

Table 8-68: Environmental Involvement Category Ranking (cont'd)

	Physical								Cultural		Community					
	Utilities		Railroads		Contamination Sites		Noise Sensitive Sites		Cultural Resources		Relocations		Land Use Inconsistency		Results	
Alternatives	Number of Crossings	Rank	At-Grade Crossing	Rank	Sites	Rank	Sites	Rank	Sites	Rank	Number	Rank	Miles	Rank	Category Score	Category Rank
No Build	0	1	Y	3	0	1	0	1	0	1	0	1	0	1	23	1
8	8	4	N	1	1	4	7	4	0	1	35	5	0.72	4	62	4
14	11	6	Y	3	0	1	7	4	0	1	36	4	1.23	6	71	6
15	7	3	Y	3	0	1	7	4	0	1	35	5	0.72	4	67	5
17	6	2	N	1	2	6	5	2	0	1	29	2	0	1	47	2
19	8	4	Y	3	1	4	5	2	0	1	30	3	0.51	3	55	3

Table 8-69: Estimated Costs Category Ranking

Alternatives	Right-of-Way		Wetland Mitigation		Total 4-Lane Construction Costs		Total Costs*	Category Score	Category Rank
	$Millions	Rank	$Millions	Rank	$Millions	Rank	$Millions	Score	Rank
No Build	$0.00	1	$0.00	1	$0.00	1	$0.00	3	1
8	$42.70	2	$33.91	2	$424.69	2	$501.30	6	2
14	$46.60	4	$50.36	4	$470.68	5	$567.64	13	4
15	$48.35	6	$50.82	5	$517.12	6	$616.29	17	6
17	$44.70	3	$43.87	3	$430.32	3	$518.89	9	3
19	$47.90	5	$57.51	6	$454.43	4	$559.84	15	5

* The Total Costs column is provided for information purposes and was not included as a criterion in the comparative evaluation for the Estimated Costs Category since the information was already accounted for in the other criteria.

Table 8-70: Public Preference Category Ranking

Alternatives	Overall Preferred Corridor		Category Score	Category Rank
	Votes	Rank	Score	Rank
No Build	14	6	6	6
8	69	2	2	2
14	67	3	3	3
15	22	4	4	4
17	287	1	1	1
19	17	5	5	5

Table 8-71: Overall Gulf Coast Parkway Alternatives Performance

Alternatives	Purpose and Need		Environment		Costs		Public Preference		Overall Score	Overall Rank
	Category Score	Category Rank	Category Score	Category Rank	Category Score	Category Rank	Category Score	Category Rank	Performance Score	Performance Rank
No Build	57	6	23	1	3	1	6	6	14	3
8	27	4	62	4	6	2	2	2	12	2
14	25	3	71	6	13	4	3	3	16	5
15	30	5	67	5	17	6	4	4	20	6
17	19	1	47	2	9	3	1	1	7	1
19	22	2	55	3	15	5	5	5	15	4

Purpose and Need Evaluation Category

All alternatives meet the project‟s purpose and need; however, due to the disparate nature of the many purposes and needs the alternatives do not perform the same. In order to determine which alternative(s) performed best in meeting the project‟s purposes and needs, the alternatives were ranked based on their performance in meeting each of several criteria. An alternative‟s ranks under each criterion were totaled to obtain a category score for each alternative, including the No Build Alternative. The alternatives‟ scores were then ranked to determine how the alternatives performed compared to each other in the purpose and need evaluation category (the lowest score is indicative of the best performance). From **Table 8-67**, it can be seen that Alternative 17 had the lowest score (next to last column from right) when all criterion ranks were totaled; therefore, Alternative 17 was ranked first even though Alternative 17 was ranked fourth in meeting the criterion for improvements through enterprise zones and for hurricane evacuation.. It performed equally well with Alternative 8 in meeting the criterion for providing new connection to the roadway network and the criterion for connections to future planned (transportation) projects. It also ranked first in reducing travel times to employment, improving travel time to the NWFBIA, improving security of the Tyndall AFB, and shared the first rank with Alternatives 14 and 19 for providing a direct route for tourists to coastal Gulf County.

Environmental Involvement Evaluation Category

The alternatives‟ performance in the environmental involvement category (**Table 8-68**) was determined in a similar manner; however, in this case there were nineteen criteria by which the alternatives were compared. These criteria were grouped according to natural, physical, cultural, and social environment issues. Within the natural environment, the alternatives‟ involvement with wildlife species, conservation areas, wetlands, EFH, floodplains, and water quality was evaluated. The alternatives‟ involvement with the physical environment was evaluated based on conflicts with railroads and utilities, potential to cause noise impacts, and involvement with potential contamination sites. Involvement with cultural environment was based on the alternatives‟ potential for involvement with significant historic or archaeological sites. The alternatives‟ involvement with the social environment was based on the number of relocations and involvement with community facilities.

As would be expected, the No Build Alternative performed better than any of the build alternatives in the Environmental Evaluation Category by a considerable amount. The build alternative that performed best of the build alternatives was Alternative 17. Under species involvement, Alternative 17 and 19 had the least number of bear kills, but Alternative 17 had the most involvement with field surveyed protected species and, with Alternative 8, had the most involvement with the PCC habitat. Alternative 17 was ranked third for involvement with wetlands, but was ranked, along with Alternative 19, first for involvement with EFH. Alternative 17 was second, after the No Build alternative, for involvement with floodplains, verified impaired waters, and named waterway crossings, but was fourth in involvement with Class 1 surface waters drainage basins.

Under the physical environment, Alternative 17 was second, after the No Build Alternative for involvement with utilities, and, along with Alternative 8, was first for involvement with railroads, it ranked sixth for involvement with contamination sites (which may be somewhat misleading since it would have involvement with only two sites), and it was second with Alternative 19, after the No Build Alternative in the number of noise sensitive sites it would potentially impact.

Alternative 17 was also ranked second, after the No Build alternative for the number of relocations it would cause. None of the alternatives would have involvement with conservation areas, cultural resources, or community facilities.

Estimated Costs Evaluation Category

This evaluation category compared the right-of-way, mitigation and construction costs of the alternatives (**Table 8-69**). As would be expected, the No Build alternative performed best, because there were no costs associated with this alternative. This does not consider the costs of programmed improvements that would occur under the No Build alternative but might be delayed were the Gulf Coast Parkway constructed. Nor does it estimate the cost benefits of the Gulf Coast Parkway that would be lost if the Gulf Coast Parkway were not constructed.

Of the Build alternatives, Alternative 8, at $501.20 million, was the least expensive alternative followed by Alternative 17, at $518.89 million. A difference of only 3.4 percent.

Public Preference Evaluation Category

The public preference evaluation category evaluated the public‟s expressed preferences, based on 533 responses to a questionnaire (discussed in Section 5) about the project (see **Table 8-70**). Based on these responses, Alternative 17 with 287 votes was overwhelmingly the preferred alternative although all alternatives, including the No Build, received votes expressing support. The second most favored alternative was Alternative 8 with 69 votes. There were 14 votes for the No Build alternative, 67 votes for Alternative 14, 22 votes for Alternative 15 and 17 votes for Alternative 19.

Alternatives Overall Performance

After completion of the evaluation of the alternatives in each of the four evaluation categories, there was no clear indication of which alternative should be recommended as the preferred. Alternative 17 performed best in the Purpose and Need and Public Preference categories, while the No Build performed best in the Environmental Involvement and Estimated Costs categories. Therefore, additional evaluation was required.

Table 8-71 compares the overall performance of the project alternatives, including the No Build alternative. Each alternative‟s performance (category rank) in each of the evaluation categories was totaled to obtain an Overall Performance Score. The alternatives‟ performance scores were compared and ranked. So although the No Build alternative ranked first in two evaluation categories, it ranked last in the other two categories. When the rankings were totaled, the No Build alternative ranked in the middle overall while Alternative 17, which not only ranked first in two evaluation categories, was second in the Environmental Involvement Category and third in the Cost Evaluation Category, giving it a total score of 7, compared to the No Build alternative‟s score of 14, and an Overall Performance Rank of first. Alternative 8 ranked second with an Overall Performance Score of 12.

8.7.4 FDOT Recommended Alternative

At this point in time, based on existing public input, early agency coordination, engineering information and environmental studies, which are currently available for public review, Alternative 17 is currently considered the FDOT recommended alternative. However, FDOT will not make a final recommendation to FHWA on any alternative until all alternative impacts and comments on the Draft EIS and public input resulting from the public hearing have been fully evaluated.

8.7.5 Permitting

Coordination with permitting agencies has been on-going throughout the development of this project from the time the project was first published in the FDOT‟s Environmental Programming Screen to the present. The intent of this coordination has been to identify the resource agencies‟ concerns, to coordinate the development of alternatives that avoid and minimize impacts to natural resources as much as feasible, to coordinate the methodology to be used to identify and assess impacts, and to coordinate the identification of conceptual mitigation measures for the impacts of the selected alternative. This coordination effort, described in more detail in **Section 5** of the Draft EIS, resulted in the preparation of Issue Action Plans which identified the methodology for conducting the analysis of the alternatives‟ impacts on resources for which the agencies had expressed special concern. These methodologies have been followed in the evaluation of the project alternatives on these resources (wetlands, wildlife and habitat, coastal and marine and indirect and cumulative effects (ICE)). Reports have been prepared summarizing the evaluation of the project‟s involvement with these resources and submitted to the agencies for review. The agencies have submitted comments (**Appendix J of the Draft EIS**) and FDOT has responded to those comments.

Coordination with the resource agencies will continue throughout the PD&E study and into design and permitting. Following selection of the preferred alternative, more detailed field surveys will be conducted that will provide the more accurate assessment of impacts that is needed to identify specific conceptual mitigation requirements. This information will be provided to the agencies and mitigation concepts will be developed jointly between the agencies and the FDOT. Although resolution of all agency concerns will not be achieved with the completion of this Draft EIS, FDOT will utilize the Reasonable Assurance Process discussed in **Sections 4.3.5 and 4.3.14** of the Draft EIS to provide assurance that agency concerns will be addressed in the remaining project phases.

The USACE and the NWFWMD regulate wetlands within the project area. The USFWS, USEPA, NMFS, and the FFWCC review and comment on wetland permit applications. It is currently anticipated that the following permits will be required for this project:

Permit	Issuing Agency
ERP for Stormwater Management	NWFWMD/FDEP
Section 404 Dredge and Fill Permit	USACE
National Pollutant Discharge Elimination System (NPDES) General Permit	FDEP
Bridge Permit	USCG
Wetland Resource Permit	FDEP
Section 404 Water Quality Certification	USACE

The complexity of the permitting process depends greatly on the degree of impact to the jurisdictional area. The NWFWMD requires an ERP when construction of any project results in the creation of a water management system or has an impact to “Waters of the State” or isolated wetlands. Currently, the FDEP still administers the permitting for wetland impacts. An individual permit is likely to be required with mitigation for wetland impacts, since impacts will be greater than one acre.

For the USACE, an individual permit will also be required. An individual permit requires compliance with Section 404(b)(1) guidelines of the Clean Water Act, including verification that all impacts have first

been avoided to the greatest extent possible, unavoidable impacts have been minimized to the greatest extent possible, and unavoidable impacts have been mitigated in the form of wetlands creation, restoration, and/or enhancement. Section A of the USACE individual permit has been submitted for review and a copy is included in **Appendix R**.

Any project which results in the clearing of five or more acres of land will require a NPDES permit from FDEP, pursuant to 40 CFR parts 122 and 124. In association with this permit, a required Stormwater Pollution Prevention Plan (SWPPP) will be implemented during the construction of the project. The primary functions of the NPDES requirements are to ensure that sediment and erosion during construction of the project are controlled. These permits typically utilize BMP to ensure compliance.

8.7.6 Construction

Construction activities for the project may 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. The following discussing the measures that will be taken to minimize construction impacts.

Socioeconomics, Communities and Neighborhoods

The extent of potential construction effects will depend largely on the alternative selected. In any case, FDOT‟s *Standard Specifications for Road and Bridge Construction* and BMP will be utilized to reduce noise, traffic delays, air quality impacts and other issues that would impacts resident‟s quality of life. Types of measures that would be implemented are discussed in more detail below, but could include storage of materials out-of-site, coordinating with public service and utility providers to minimize disruption in the delivery of services, confining work to daylight hours, minimizing fugitive dust, requiring noise controls on equipment, and implementing a traffic control plan to minimize possible delays.

Community Services

Construction activities could result in temporary lane closures on some roads, potentially increasing congestion and slowing emergency response times. Therefore, the contractor will be required to coordinate construction activities that affect existing roads with emergency service providers and notify fire departments of any waterline relocations that may affect water supply for fire suppression. In addition, the contractor will be required to coordinate with school officials to minimize delays on school bus routes.

Utilities

Much of the project is on new alignment, but in areas where existing roads are incorporated into the project, utilities could be affected by some construction activities such as earth moving and pile driving. As a result, there may be a need to temporarily re-route utility lines or cables. Such relocations may result in intermittent and short-term interruption of service. Prior to construction, coordination will be conducted with utility providers to minimize any disruption in service.

Railroads

FDOT will notify the Bay Line Railroad in advance of pending construction activities in the vicinity of the railroad during the project‟s construction.

Air Quality

The air quality effect of highway construction activities will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of other controlled materials in accordance with FDOT‟s *Standard Specifications for Road and Bridge Construction*.

Noise and Vibration

Noise and vibration effects may result from heavy equipment movement and construction activities, such as bridge pile driving and vibratory compaction of embankments. Noise control measures will include those contained in FDOT‟s *Standard Specifications for Road and Bridge Construction*. Specific noise-level problems that may arise during construction of the project will be addressed by the Construction Engineer in cooperation with the appropriate Environmental Specialist.

Noise and vibration effects on fish from pile driving may be managed with one of the following measures,

4) Use of wood or concrete piles instead of hollow steel piles.
5) If using hollow steel piles, restrict their installation to a time of year when larval and juvenile stages of fish species with designated EFH are not present; drive piles during low tide periods when located in intertidal and shallow subtidal areas; use a vibratory hammer as much as possible; monitor peak SPL during pile driving to ensure that they do not exceed the 190 dB re 1PA threshold for injury to fish; employ measures to attenuate sound should SPLs exceed 180 dB re 1 PA (i.e. air bubble curtain system or air-filled coffer dam, use of a smaller hammer, and use of a hydraulic hammer if impact driving cannot be avoided); and drive piles when the current is reduced in areas of strong current.
6) Use of the construction technique called "ramping up" which requires the contractor to use soft-start procedures where the hammer is not used at full strength at the start of a pile driving session.

The need for these measures will be further evaluated during the project‟s design and special provisions may be added to the project‟s construction specifications, as appropriate.

Wetlands

Construction activities have the potential for short-term, temporary impacts on wetlands. FDOT will address the potential effects of construction activities on wetlands in accordance with FDOT‟s most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMPs at wetland, bay and stream crossings. Some typical measures include the covering stockpiled materials; locating staging and stockpiling areas sufficiently distant from surfaces waters; limiting the area of exposed soil at any given time during construction; controlling erosion and sedimentation through mulching, matting, and netting; use of filter fabric fencing to prevent sediment from leaving the construction site; placement of rock entrance mats to reduce tracking of dirt from construction vehicles; use of sediment traps and ponds and installation of swales and ditches to intercept runoff; and regular site maintenance to prevent the accumulation of debris. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions.

Essential Fish Habitat

Construction activities could have short-term, temporary impacts on EFH, such as increased sediment loads in stormwater runoff from the construction site and increased turbidity during in-water work. Both of these contribute to impacts on benthic aquatic habitats.

The contractor shall be required to develop, implement and adhere to a "marine resource protection plan" to ensure that marine resources within and outside of the right-of-way are not damaged by construction activities. This plan may involve strategies such as marking off adjacent marine resources outside of the proposed project‟s alignment with buoys, so that construction related boat traffic does not affect adjacent marine resources, i.e., emergent vegetation, seagrass, etc., and barges are not moored directly on or over marine resources. Consideration should be taken to implement strategies to reduce impacts to the existing EFH resources, where possible. For instance, depending on the specific construction activities chosen for this area, some debris (concrete and woody debris) associated with oyster resources may need to be removed for public safety considerations. Impacts such as these should be considered in the overall proposed methodology.

Appropriate construction controls and BMPs will be implemented to ensure protection of marine resources. Construction BMPs should incorporate, but not be limited to: working within adjacent areas devoid of marine resources, instituting BMPs to reduce direct impacts to emergent marsh systems, adequate turbidity controls, utilizing vessels that can operate in depths adequate enough to not scour or prop scar the marine sediments/resources, continual monitoring for presence of wildlife species in the work area, and removal of all construction debris and equipment at completion of the project.

Although not anticipated, if explosives should be utilized during construction activities, then the *Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* should be implemented. The Manatee Construction Conditions set forth by the FFWCC and the USFWS must be followed throughout a construction process. Monitoring for such species shall be conducted throughout the construction process to ensure BMP are being followed.

Water Quality

Construction activities have the potential for short-term, temporary impacts on water quality. FDOT will address the potential effects of construction activities on water quality in accordance with FDOT‟s most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions

Wildlife and Habitat

Construction activities could have air, noise, and water quality impacts on wildlife and associated habitats within the immediate vicinity of the project. The measures proposed to minimize these effects on humans will also improve conditions for wildlife.

A number of actions will be undertaken to avoid or minimize impacts to federally-listed species. These include:

- Conducting pre-construction surveys at appropriate times for listed species to enhance assessments concerning location and population status. For example, since gopher tortoise burrows and habitat found within the alternatives and associated 300-foot buffers may be

impacted, FFWCC Gopher Tortoise Permitting Guidelines pertaining to surveying, excavating, and relocating will be followed once a preferred alternative is selected.

- If seasonally-appropriate surveys for federally-listed plants potentially associated with the preferred alternative are conducted, the project sponsor will also consider and avoid potential impacts to state-listed plants, where practical.

- Avoiding potential impacts to manatees. Depending upon the methodology used for bridge installation, potential protection measures could include stopping work if a manatee comes within a specified distance of in-water work, posting observers to watch for manatees, and/or monitoring turbidity barriers for potential entanglement. *Standard Manatee Conditions for In-Water Work, 2011*, developed by the FFWCC and the USFWS will be followed, as necessary. If explosives are to be utilized, *then the Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* will also be implemented.

- Minimizing direct/indirect wetland impacts, e.g., sedimentation, by utilizing appropriate stormwater design and BMP at wetland and stream crossings during construction. Regulatory agencies will have the opportunity to review 60 percent plans that will include proposed design for crossing structures via the joint ERP application. The 60 percent plans submitted with the ERP application will also contain a design erosion control plan that will be subject to regulatory agency review and comment. Design plans will follow the NWFWMD regulations requiring that an operating permit be obtained for the constructed stormwater facilities.

- Per the suggestion of the USFWS, a survey for bald eagle nests within the preferred alternative and associated buffers will be conducted one year prior to construction.

- Implementing *Standard Protection Measures for the Eastern Indigo Snake* during construction.

- Implementing *Construction Special Provisions Gulf Sturgeon Protection Guidelines* during construction.

- Invasive/exotic species will be managed and controlled in accordance with FDOT‟s *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The contractor will be required to monitor turf areas and remove all competing vegetation, pest plants and noxious weeds as listed by the Florida Exotic Plant Pest Council, Category 1 *List of Invasive Species*. Insecticides and herbicides used to control invasive/exotic species will be approved by the Florida Department of Agriculture.

- All Reasonable Assurance measures will be met as previously described in Section 4.14

<u>Contamination</u>

Procedures specifying the contractor‟s responsibilities in regard to encountering petroleum contaminated soil and/or groundwater are set forth in the FDOT‟s *Standard Specifications for Road and Bridge Construction*. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, prior to construction.

Navigation

Should the bridge construction require in-water work, there could be a potential for conflicts between construction activities and vessels on the waterway. Activities that could result in blockage of a channel or interrupt traffic flow are required to obtain authorization from the USCG. FDOT *Standard Specifications for Road and Bridge Construction* requires under Section 103-1.3 that the USCG be provided 60 days in advance with drawings showing the location of temporary work structures relative to the navigable waterway, lighting on the temporary work structures that meets the USCG requirements, and notification to mariners of construction in or near the navigation channel. These measures should be sufficient to minimize conflicts between bridge construction activities and vessels navigating the either the ICWW through East Bay or the ICWW/Wetappo Creek.

FDOT will work closely with the USCG to ensure that this project meets all navigational requirements and that the bridge is constructed in a manner that will meet the needs of waterway users. FDOT will meet with the USCG to explain in more detail its plans concerning the bridge and to fully accommodate USCG requirements. FDOT will utilize Section – 103-1.3 of the *Standard Specifications for Road and Bridge Construction* to minimize conflicts between construction activities and waterway users.

Maintenance of Traffic

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 road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related activities, which could excessively inconvenience the community so that motorists, residents, and business persons can make other accommodations. A sign providing the name, address, and telephone of a Department contact person will be displayed on-site to assist the public in obtaining immediate answers to questions and logging complaints about project activity. All provisions of the FDOT‟s *Standard Specifications for Road and Bridge Construction* will be followed.

Maintenance of Access

Access to all businesses and residences will be maintained to the extent practical through controlled construction scheduling. In the CR 386 area from US 98 to Overstreet, along SR 22, and at the intersections of the Gulf Coast Parkway with US 98 in Gulf County, with US 98 (Tyndall Parkway), and with US 231, the present traffic congestion may become worse during stages of construction where narrow lanes may be necessary. Traffic delays will be controlled to the extent possible where many construction operations are in progress at the same time. The contractor will be required to maintain two lanes of traffic in each direction along CR 386 and SR 22 and at the project‟s intersection with US 98 in Gulf County, with US 98 (Tyndall Parkway), and with US 231 at all times and to comply with the BMP of FDOT.

Construction Staging

In addition to the construction of the road and bridges associated with the project, there will be the need to have construction staging areas in the vicinity of each project phase as it goes to construction. Construction staging areas are used for the delivery and storage of construction materials and equipment, contractor offices, and employee parking. These areas vary in size, depending on the size of the construction operation, and may require grading or excavation to level the site, install drainage improvements, and connect utilities. In addition, temporary driveways would be established from access roads to the staging area. Temporary erosion and sediment control measures would be used to prevent runoff of untreated stormwater and sediment from entering nearby wetlands or water bodies, or adjacent

properties. After construction has been completed, staging areas would be stabilized, landscaped, or restored and utilities disconnected in accordance with FDOT‟s *Standard Specifications for Road and Bridge Construction*.

Disposal of Unsuitable Materials

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. Demucking is anticipated at most of the wetland sites and will be controlled by Section 120 of the FDOT‟s *Standard Specifications for Road and Bridge Construction*. Disposal will be on-site in detention areas or off-site. The removal of structures and debris will be in accordance with local and state regulation agencies permitting this operation. The contractor is responsible for his methods of controlling pollution on haul roads, in borrow pits and other materials pits, and in areas used for disposal of waste materials from the project. Temporary erosion control features, as specified in the FDOT‟s *Standard Specifications for Road and Bridge Construction*, Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

8.8 PUBLIC INVOLVEMENT PROGRAM

A Public Involvement Program has been developed and is being carried out as an integral part of the Gulf Coast Parkway (Gulf Coast Parkway) project. The purpose of this program is to establish and maintain communication with the public at large and the individuals and agencies concerned with the project and its potential impacts. The program was expanded in the Project Development & Environment (PD&E) phase of the project. To ensure early, open communication and agency and public input, an AN was provided 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 process, eliminate unnecessary work, and provide a substantial issue identification/problem solving effort, an early scoping process was carried out in accordance with the Council of Environmental Quality (CEQ) Guidelines. Finally, in an effort to resolve all issues identified, the Department has conducted an extensive interagency coordination and consultation effort, and public participation process. These efforts began during project planning through the Efficient Transportation Decision Making (ETDM) process.

This section summarizes the effort to fully identify, address, and resolve project-related issues identified through the Public Involvement Program. Due to their vast size, materials associated with public participation (i.e. newsletters, mailing list database, Public Meeting and Hearing notifications, handouts, etc.) are referenced in this document, but located in the appendices of the *Public Involvement Program Summary Report* prepared for this project.

8.9 CHRONOLOGY OF PROJECT COORDINATION ACTIVITIES

The Public Involvement Program for this project began with initiation of the corridor feasibility study in 2001. The following is a chronological history of the coordination activities that have occurred since the project‟s initiation with a brief description. The discussion is divided into three project phases: Corridor Feasibility Study and Project Concept Report, State Environmental Impact Report (SEIR), and EIS. Additional information on these activities is provided in subsequent sections of this chapter and detailed information is provided in the *Public Involvement Program Summary Report*.

8.9.1 Corridor Feasibility Study and Project Concept Report

In 2001, Opportunity Florida obtained Transportation Outreach Program Funds (TRIP) from the Florida Legislature for two transportation improvement projects. Opportunity Florida, a non-profit organization that, among other purposes, assists in stimulating economic growth in those areas of Northwest Florida designated a Rural Area of Critical Economic Concern. One of the projects for which funding was obtained was the Gulf Coast Parkway. A corridor feasibility study was initiated to determine the feasibility of the proposed project and, if feasible, identify a viable corridor for future project development phases.

Corridor Feasibility Study Advance Notification

The AN for the Corridor Feasibility Study was issued on May 14, 2002. The following agencies responded.

- U.S. Department of the Air Force: The Air Force commented "Since the events of 11 September, we have been constantly reminded of the vulnerability that results from a highway through the middle of a military installation. The potential of another roadway that could provide a suitable alternative for the public that currently transits the Tyndall reservation would provide a beneficial security option by allowing the base to close off the existing portion of US 98 that runs through Tyndall when necessary… Residential or business development immediately along a bypass on the north side of East Bay would not be in conflict with current Tyndall operations."
- Federal Aviation Administration (FAA), Orlando Airports District Office. The FAA stated that they would be primarily concerned with interchange elevations and associated high-mast lighting in the vicinity of an airport.
- Department of Health and Human Services (HHS). HHS had no specific comments but provided a listing of areas of potential health concerns to be considered where warranted.
- WFRPC. The WFRPC found the project generally consistent with the *WFRPC Strategic Regional Policy Plan* (SRPP) (adopted July 15, 1996).
- US Fish and Wildlife Service (USFWS). In addition to providing a listing of threatened, endangered, and other special status species and their habitats, the USFWS recommended the avoidance and minimization of wetland impacts and the consideration of ICE.
- US Department of Commerce, NMFS. The NMFS advised that estuarine areas within the study corridor are identified as EFH and requested that EFH be addressed in the WER.
- Bay County Audubon Society. The Bay County Audubon Society expressed concerns about the environmental and ecological consequences of the project due to the presence of habitat for bald eagles, black bears, red-cockaded woodpeckers, and the PCC. They suggested that any plan for the parkway include wide, extensive buffers of native vegetation that are forever preserved, wildlife crossings, avoidance of imperiled habitats, and preservation set-aside of mitigation lands.
- Callaway City Commission. The City Commission stated that there are numerous benefits in routing the proposed parkway as close as possible to the City of Callaway. The City suggested that the route be directed along SR 22 to just east of the Callaway Recreation Complex, then north and west to Star Avenue in the vicinity of Tram Road as possibly eliminating the necessity for most land purchases or condemnation of property near the SR 22 and Star Avenue intersection or require the relocation of businesses or residences. The City Commission also suggested that this route would be conducive to connecting Bay, Gulf and Jackson Counties to future transportation development. And that the re-routing of traffic away from Tyndall AFB would benefit both Tyndall and the region.

- Bay County Economic Development Alliance. The Alliance stated that they fully supported the City of Callaway in their efforts to have the Gulf Coast Parkway come as close to their city as possible.
- FDCA. The FDCA stated that the proposed project was not consistent with the comprehensive plans of Gulf, Calhoun, or Bay Counties in that the project is not contemplated on the Traffic Circulation Map, or any other map of future conditions. They also requested that the study consider secondary and cumulative effects. They also recommended that the studies of the Gulf Coast Parkway and the Gulf to Bay Highway projects be combined.
- FFWCC. The FFWCC also recommended that the Gulf Coast Parkway Corridor Study be combined with the Gulf to Bay Highway PD&E Study into one EIS and consideration of secondary and cumulative effects.
- NWFWMD. The NWFWMD also recommended consideration of secondary and cumulative effects.
- FDEP, Office of Intergovernmental Programs (OIP). The OIP noted that the project is located in the St. Andrews Bay Watershed and that St. Andrews Bay is A Florida Surface Water Improvement and Management (SWIM) priority waterbody, is designated Class II water by Rule 62-302.400 (12)(b)3, F.A.C. They also noted that the northern portion of the study area contains Bear Creek, its tributaries and its floodplain. Bear Creek is a tributary to Deer Point Lake reservoir, a Class I waterbody that is the primary drinking water source for cities within Bay County. They expressed concern for the project effects on water quality. FDEP also requested that secondary and cumulative effects be evaluated and that the Gulf Coast Parkway study be combined with the Gulf to Bay Highway study.

Subsequent correspondence was received from the USFWS and the Bay County Audubon Society.

- USFWS recommended the preparation of EIS to demonstrate adherence to FHWA-FAPG 23 CFR 771.105(b) regulations, requiring that "alternative courses of action be evaluated and decisions be made in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of social, economic, and environmental impacts of the proposed transportation improvement; and of national, state, and local environmental protection goals.
- Bay County Audubon Society recommended that the reasons for the project be provided to the public immediately. If the need for the project is adequately justified, then they recommended the corridors be selected only after a thorough review of existing data. The corridors chosen should be subjected to intensive ecological surveys and primary and secondary impacts should be assessed. Further, they recommended upgrading existing highways as an alternative to a new corridor. They also expressed concerns that the same mitigation requirements applicable to FDOT would not be required for the project.

Corridor Feasibility Study Local Government Kick-off Meetings

Kick-off meetings were held with the following local government entities.

- Panama City-Bay County MPO (now Bay County TPO)
- Bay County Commission
- Gulf County Commission
- Calhoun County Commission
- Callaway City Council
- Parker City Council

Corridor Feasibility Study Newsletters

A total of three newsletters were distributed during the Gulf Coast Parkway Corridor Feasibility Study.

- First newsletter was published in November 2002
- Second newsletter was published in February 2003
- Third newsletter was published in at the conclusion of the study in October 2003

Corridor Feasibility Study Public Workshop

Three meetings were conducted during March 2003. A total of 2,700 individuals received notification of the meetings.

- Bay County meeting was held on March 17, 2003 at the Merritt Brown Middle School. Twenty-nine people attended. Two verbal comments were provided to the court reporter. One objected to Corridor A on environmental grounds because it provided a new crossing of East Bay and the second comment favored improving existing roads over construction of the Gulf Coast Parkway. One formal comment was received regarding how the economic benefits for the project had been determined.
- Gulf County meeting was held on March 18, 2003 at the Centennial Building in Port St. Joe. Fifty-five people attended. Two persons made comments during the comment period of the presentation. One person urged the study team to take a regional approach to the study. The second commenter asked how much of the land along the corridors was owned by the St. Joe Company. The response to that comment was that the amount of land owned by the St. Joe Company was unknown and was not a factor in the location of corridors.
- Calhoun County meeting was held on March 20, 2003 at the Neil Civic Center. Eighteen people attended this meeting. Twelve written comments were received. Two comments objects to the project, one comment supported a tri-county planning process instead of a new road, one comment expressed support for widening SR 71 instead of the Gulf Coast Parkway, one comment suggested the inclusion of a multi-use trail in the typical section, one comment objected specifically to Corridor E, and eight comments were in favor of the project. Of the eight supportive comments, one was unqualified support, one requested that the road be elevated over environmentally sensitive areas, four comments preferred Corridor D as the most beneficial to Gulf County, and two comments supported the project based on the positive impacts to the economy of Gulf County.

8.9.2 State Environmental Impact Report

The PD&E phase of the project was initiated by Opportunity Florida in 2005. Projects without federal funds have the PD&E study documented in a SEIR. Therefore, the PD&E phase began as a SEIR. The explanation of the change of the PD&E study from a SEIR to an EIS is provided in the next section.

State Environmental Impact Report Advance Notification

The AN by Opportunity Florida of the beginning of a PD&E study for the Gulf Coast Parkway was issued on August 24, 2005.

8.9.3 Environmental Impact Statement

On August 10, 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted by Congress. Federal funds were included for the design phase of the

Gulf Coast Parkway project. The designation of federal funds for future project phases resulted in the transfer of project sponsor responsibilities from Opportunity Florida to the FDOT. The documentation of the PD&E study also changed from a SEIR to an EIS. The change in sponsorship did not affect any commitments that had been previously made by Opportunity Florida as FDOT will make the same commitments.

In addition to the change in project sponsorship, the implementation of the requirements of the SAFETEA-LU necessitated that the project be entered into the FDOT"s ETDM process. The ETDM process normally includes submittal of the AN but because the ETDM process was just being launched by FDOT, it was not fully operational. Therefore, a revised AN was submitted separately from the ETDM process.

Environmental Impact Statement Advance Notification

A revised AN was issued on September 2, 2005, nine days after the August 25, 2005 (SEIR) AN. The issuance of a revised AN was necessary to indicate the changes in the project since the allocation of federal funds for design. Agencies and other interested parties receiving copies of the AN are provided in **Table 8-72. Table 8-73** summarizes the agency comments received and FDOT responses. A copy of the AN package and a detailed summary of the comments and responses are provided in the *Public Involvement Summary Report*.

Table 8-72: Agencies Receiving Advance Notification

Federal Agencies	State Agencies
Federal Highway Administration – Director	Florida Department of Environmental Protection (FDEP) – District Director *
Federal Emergency Management Agency – Region IV, Director	Florida Fish and Wildlife Conservation Commission – Executive Director *
Federal Aviation Administration – Airports District Office	Florida Division of Forestry – Chipola River District, Manager
Federal Railroad Administration – Office of Economic Analysis, Director	Florida Department of Community Affairs *
United States Department of the Interior – Bureau of Land Management, Eastern States Office	Florida Department of State – Division of Historical Resources*
United States Environmental Protection Agency – Region IV, Regional Administrator*	
United States Department of the Interior – Fish and Wildlife Service, Southeast Regional Office, Director	**Regional and Local Agencies**
United States Department of the Interior – U.S. Geological Survey Chief	West Florida Regional Planning Council *
United States Army Corps of Engineers – Regulatory Branch, District Engineer*	Apalachee Regional Planning Council
United States Coast Guard – Commander (obr), Eight District	Northwest Florida Water Management District *
United States Department of Commerce – National Marine Fisheries Service, Habitat Conservation Division*	Gulf County Board of Commissioners
United States. Department of Commerce – National Oceanic and Atmospheric Administration	Bay County Board of Commissioners
United States Department of Agriculture – Southeast Region, Regional Director	City of Port St. Joe
United States Department of Agriculture – Natural Resources Conservation Service – Florida State Office, State Soil Scientist	City of Mexico Beach
United States Department of Health and Human Services – Center for Environmental Health and Injury Control	City of Callaway
United States Department of Housing and Urban Development – Regional Environmental Officer	City of Lynn Haven
United States Department of the Interior – National Park Service, Southeast Regional Office	City of Springfield
United Steates. Department of Interior – Bureau of Indian Affairs, Office of Trust Responsibilities	City of Parker
	City of Panama City
Tribes	Tyndall AFB
Muscogee Nation of Oklahoma	
Miccosukee Tribe of Indians of Florida	
Poarch Band of Creek Indians of Alabama	
Seminole Tribe of Florida	
Seminole Nation of Oklahoma	

*Agencies responding to the AN

Table 8-73: Agency Comments on the AN and FDOT Responses

Agency	Comment	Response	Updated Response
U.S. Department of Commerce – National Marine Fisheries Service	Stated certain marine and estuarine habitats within the project area are designated as EFH as identified in the 1998 generic amendment of the Fishery Management Plans for the Gulf of Mexico. Due to the fact the roadway would cross a number of creeks and bayous which empty into estuarine habitats in East Bay, concerns were expressed regarding maintenance of the area's natural hydrology and freshwater inflow to the estuarine environment. NMFS requested EFH consultation, including a comprehensive EFH assessment, to be initiated as soon as specific project design and construction impact information becomes available. Upon review of the EFH assessment, NMFS will determine if conservation recommendations are necessary. Consultation with the NMFS Protected Resources Division may also be necessary due to the fact the project area could potentially be inhabited by several sea turtle species and a portion of Gulf sturgeon Critical Habitat Unit 11 occurs along the Gulf shoreline of Mexico Beach, near the southern terminus of the project.	*A site visit and coordination will be conducted with the NMFS. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to EFH will be available and analyzed. Should it be deemed necessary, an EFH assessment will be prepared and consultation will be conducted with the NMFS. Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study.*	*The EFH assessment is located in Section 5.2.5 of the Wetlands Evaluation Report.*
U.S. Environmental Protection Agency	It was noted that due to the level of this project, an EIS would be required. USEPA requested more data be produced in reference to US 98 road closures due to Tyndall AFB security along with traffic data from all existing roads within the area. Encouraged the utilization of existing roadways in the alternatives analysis and preferred this utilization to extend to the final project. In addition, the agency requested consideration of access control in the form of limited access for the roadway to steer development away from high value wildlife habitat, to minimize road intersection congestion, and to maintain the LOS and safety. The project area has numerous high value natural habitats, including migratory birds, which should be analyzed. Due to the potential of residential and commercial development in the area, the EIS should define the indirect-cumulative impacts. Requested land cover (vegetation) and other characteristics need documentation, including the avoidance of all FEMA flood prone zones through the X-500 flood zone.	*A significant level of preliminary analysis utilizing aerial photography and environmental information data layers has been given to all corridors. Further analysis will be conducted to determine how to best minimize impacts along the alternative alignment. Further detailed analysis will be conducted in an effort to provide an alternative alignment which best minimizes impacts to wetlands and waters of the State. Avoidance and minimization to wetland impacts per alignment will be documented and described as part of the EIS which will be developed for this proposed project. The EIS process will include a detailed alternatives analysis. Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study.*	*All of this information is located in the EIS. Land cover documentation is located in the EIS and the Wetland Evaluation Report. Migratory bird potential impacts are located in the ESBAR. The potential indirect and cumulative impacts are addressed in Section 4 of the EIS. Land cover is located in the WER and EIS. FDOT has coordinated closely with commenting agencies during the PD&E and this can be seen in further detail in the Public Involvement Program Summary Report and the EIS.*
U.S. Army Corps of Engineers	Requested measures be taken to avoid and minimize impacts to wetlands and waters. In order to accomplish this, the Corps advocated use of elevated, piling-supported structures. Structures in or over navigable waters should not impede navigation. Mitigation on some level would be required for this project, depending on the level of impact. The Corps recommended areas with significant environmental lands and features not to be impacted. The agency also requested coordination with federal and state wildlife agencies in order to protect regional flora and fauna. Concerns were expressed that this project will have long-term adverse cumulative effects on the aquatic environment. Due to the possibility of residential development in the project area coupled with the propensity of this area to tropical storms, the Corps expressed concerns for future residents of the area. Since this project lies within the Northwest Florida Greenway Corridor project limits, a request was made for coordination with the agencies responsible for managing the Greenway Corridor.	*A significant level of preliminary analysis utilizing aerial photography and environmental information data layers has been given to all corridors. Further analysis will be conducted to determine how to best minimize impacts along the alternative alignment. Further detailed analysis will be conducted in an effort to provide an alternative alignment which best minimizes impacts to wetlands and waters of the State. Avoidance and minimization to wetland impacts per alignment will be documented and described as part of the EIS which will be developed for this proposed project. The EIS process will include a detailed alternatives analysis. Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study. This project is not within the Northwest Florida Greenway Corridor.*	*Please refer to the EIS Section 4.3.4 and the WER for wetland and water impacts. Navigation is covered in Section 2.3.4 and Section 4.3.18 of the EIS also.* *Avoidance and minimization efforts were conducted throughout the project to protect significant environmental lands and is discussed in Section 2. Coordination with federal and state environmental agencies was conducted throughout the PD&E Study and is included in this section as well as in the WER, ESBAR.*
U.S. Department of Interior – Fish and Wildlife Service	USFWS expressed concerns of potential impacts to protected species within the project area. The agency requested that red-cockaded woodpecker surveys be conducted within the area to determine if suitable nesting and foraging habitat may be affected. Depending on the survey findings, a foraging habitat analysis should be conducted. Protection of the habitat corridor between the Wetappo and Lathrop woodpecker populations was requested. Due to the presence of the state-protected PCC along the west side of Star Avenue and the fact Star Avenue is being presented as a possible tie in of the Parkway with US 231, other alternative alignments should be considered. FDOT and Opportunity Florida were encouraged to participate in the ongoing candidate conservation agreement with assurances to address the species conservation needs. USFWS recommended using a habitat evaluation model to identify and evaluate suitable habitat for the flatwoods salamander. Recommendations for bald eagle surveys within the project area were made. To determine effects on listed and rare plants, a comprehensive floral survey was requested within proposed alignments. Avoidance, minimization, and mitigation efforts were requested in reference to impacts on aquatic resources. Participation was requested from FDOT and Opportunity Florida in the regional ecosystem planning effort already initiated by the St. Joe Company. USFWS raised concerns over the new roadway fragmenting the regional landscape and could potentially affect both migrating and wide-ranging species. Wildlife crossings were suggested as a way to help maintain habitat and reduce the risk of loss. Concerns over migratory bird habitat and the possibility of bird take during construction were raised. USFWS requested participation in conservation planning efforts and examining other potential corridor alternatives to result in a less environmentally damaging roadway. There was an acknowledgement that an EIS will be prepared for this project.	*Specific comments from the USFWS are appreciated to identify existing resources. This information will be utilized to ensure adequate analysis and protection is planned for any proposed alignments in proximity to resources of protection areas. It is anticipated that red-cockaded woodpecker surveys will be conducted in relation to any accepted proposed corridors for this roadway project as will habitat evaluation modeling for the flatwoods salamander, and nest surveys for bald eagles in the area. Acceptable surveying procedures will be conducted to ensure accuracy and qualitative use of data collected. Specific fieldwork to identify and calculate potential impacts to the listed and rare plant species has not been conducted due to the numerous potential corridors and alignments. Seasonal vegetative surveys are proposed to be initiated in spring 2007. The preliminary nature of the alternative corridors serves as initial areas of investigation for potential alignments within the corridors. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to wetlands and waters of the State will be available and analyzed. Specific fieldwork to identify and calculate actual potential impacts to species within the study area has not been conducted due to the numerous potential corridors and alignments. Narrowing down the potential corridors will make groundtruthing more feasible. Furthermore, potential direct, indirect, and cumulative effects of this project will be documented in the EIS which is scheduled to be completed at the end of the PD&E Study. Opportunity Florida is committed to working with stakeholders in regards to identifying the potential affect of the proposed project to wildlife resources.*	*Please refer to the EIS and ESBAR for potential impacts to protected species.*
Florida Fish and Wildlife Conservation Commission	FFWCC commented on the number of rare and imperiled plant and animal species which may occur within the project corridors. Concerns were expressed about the fragmentation and loss of habitat for the PCC with both North options. In addition, concerns over the loss of Florida black bear through road kill and the fragmentation of its habitat were mentioned. It was recommended that surveys be performed in reference to the bear populations in the study area as well as the use of wildlife underpasses and other conservation measures to be implemented in design of the new roadway. Fear of habitat fragmentation was also a fear in reference to the flatwoods salamander in addition to species mortality.	*Specific comments from the FFWCC are appreciated to identify existing resources. This information will be utilized to ensure adequate analysis and protection is planned for any proposed alignments in proximity to resources of protection areas. It is anticipated that red-cockaded woodpecker surveys will be conducted in relation to any accepted proposed corridors for this roadway project as will habitat evaluation modeling for the flatwoods salamander, and nest surveys for bald eagles in the area. Acceptable surveying procedures will be conducted to ensure accuracy and qualitative use of data collected. The preliminary nature of the alternative corridors serves as initial areas of investigation for potential alignments within the corridors. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to*	*Please refer to the EIS (Section 4.3.14), ESBAR, WER, and ICE Report. An ETAT was formed and coordinated with throughout the PD&E Study.*

Agency	Comment	Response	Updated Response
	FFWCC also recommended a flatwoods salamander survey be conducted in the Wetappo Creek basin for impact avoidance, minimization, and mitigation. FFWCC stated their fear that a new roadway in the vicinity of Lathrop Bayou and the Wetappo Creek areas would have a detrimental effect on the red-cockaded woodpecker colonies in the area due to fragmentation of habitat and the uncontrolled growth of groundcover. Another species of particular concern was the bald eagle. Recommendations were stated in reference to following the USFWS habitat management guidelines along with coordination with USFWS and FFWCC. Overall recommendations included the reevaluation of other possible corridors, the use of approved surveys for all listed species, steps to avoid or minimize impacts to important habitat and fish and wildlife resources in the study area, in addition to the composition of an Environmental Technical Advisory Team (ETAT). Secondary impacts from potential residential and commercial development were also mentioned resulting in the loss of habitat and further development in an environmentally sensitive area. FFWCC stated that mitigation efforts would need to be addressed in the EIS and encouraged future coordination.	*wetlands and waters of the State will be available and analyzed. Specific fieldwork to identify and calculate actual potential impacts to species within the study area has not been conducted due to the numerous potential corridors and alignments. Narrowing down the potential corridors will make groundtruthing more feasible. Furthermore, potential direct, indirect, and cumulative effects of this project will be documented in the EIS which is scheduled to be completed at the end of the PD&E Study. Opportunity Florida is committed to working with stakeholders in regards to identifying the potential affect of the proposed project to wildlife resources.*	
Florida Department of Environmental Protection	FDEP expressed concern over the project's potential effect on water quality in the St. Andrews Bay watershed, particularly non-point source storm water runoff. Requests were made for the draft environmental document to include the following: identification of significant natural resources (particularly wetland and water resources); identification of how each alternative will avoid and minimize natural resource impacts, maintenance of watershed functions and protect water quality; evaluation of direct, secondary, and cumulative impacts to identified natural resources; description of any mitigation concepts to offset unavoidable impacts to wetlands, water quality or other natural resources; and evaluation of a "No-Build" alternative. FDEP requested immediate and continued coordination with state resource agencies as the project moves forward.	*The preliminary nature of the alternative corridors serves as initial areas of investigation for potential alignments within the corridors. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to wildlife, wetlands, and waters of the US will be available and analyzed. Specific fieldwork to identify and calculate actual potential impacts to these natural resources has not been conducted due to the numerous potential corridors and alignments. Narrowing down the potential corridors will make groundtruthing more feasible. Furthermore, potential direct, indirect, and cumulative effects of this project will be documented in the EIS which is scheduled to be completed at the end of the PD&E Study. Opportunity Florida will commit to avoiding, minimizing, and mitigating impacts to water resources for the Gulf Coast Parkway. Further, Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study.*	*Please refer to Section 4.3.20 of the EIS and the ICE Report.*
Florida Department of Community Affairs	FDCA determined the project is not inconsistent with FS or the goals, objectives and policies of the plan. However, they acknowledge this project is not currently addressed in the local government's comprehensive plans. The roadway would improve access to state roads in the region, additionally would serve as an additional hurricane evacuation route. However, the portion of the project beginning in Gulf County lies within the Coastal High Hazard Area and Gulf County's Comprehensive Plan does not justify a need for increased density and intensity within the Coastal High Hazard Area. In addition, the portion of this roadway project which exists outside of the urban service boundaries of both counties should not be considered as an impetus to encourage future development in the rural area. A recommendation was made that the project not be advanced into the Five Year Work Program until both County comprehensive plans are amended to reflect the proposed roadway modification.	No response required.	*No response required.*
Florida Department of State – Division of Historical Resources	Replied but provided no comment.	No response required.	*No response required.*
Northwest Florida Water Management District	Due to the fact the study area has extensive wetland, stream, and estuarine resources, development of a new major roadway would have considerable potential for impacts on water and related resources. Therefore, NWFWMD recommended analysis should identify and describe potential direct, secondary, and cumulative impacts to wetlands and other sensitive habitats, as well as potential offsite impacts from non-point source pollution and hydrologic change. In addition, NWFWMD recommended alternative actions to avoid or minimize impacts be considered and evaluated. Mitigation was mentioned as means to offset wetland impacts caused by the new roadway.	*The preliminary nature of the corridors submitted for analysis serves as initial areas of investigation for potential alignments within the corridors and requires further scrutiny to determine appropriate alignments within the proposed corridors. Further analysis, particularly instituted through the EIS process will narrow down specific corridors, alignments and potential impacts. Once a specific alignment has been chosen for detailed analysis, potential mitigation measures will be coordinated with the regulatory agencies, as required. At this phase in the proposed project's analysis, mitigation option development would be premature. Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study.*	*These wetland and natural resource concerns are addressed in the EIS (Section 4.3.4), WER, and ICE Report.* *Avoidance and minimization efforts were conducted throughout the project to protect significant environmental lands and are also discussed in Sections 2.3 and 2.5 of the EIS.*
West Florida Regional Planning Council	The comment received from WFRPC was actually a forwarded comment from the Planning and Zoning Division of Bay County. Concerns were expressed over the potential impacts to the Florida Black Bear and the red-cockaded woodpecker. Secondary impacts and traffic noise were also mentioned as unavoidable consequences of the new roadway. Efforts to minimize vehicle-caused deaths of the black bear and the gopher tortoise were also requested. It was requested that the long-term impacts of the project on the sensitive ecosystems and rare organisms be given special attention in the planning phase of the project.	*It is anticipated that red-cockaded woodpecker surveys will be conducted in relation to any accepted proposed corridors for this roadway project as will habitat evaluation modeling for the flatwoods salamander, and nest surveys for bald eagles in the area. Acceptable surveying procedures will be conducted to ensure accuracy and qualitative use of data collected. Specific fieldwork to identify and calculate potential impacts to the listed and rare plant species has not been conducted due to the numerous potential corridors and alignments. Seasonal vegetative surveys are proposed to be initiated in spring 2007. The preliminary nature of the alternative corridors serves as initial areas of investigation for potential alignments within the corridors. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to wetlands and waters of the State will be available and analyzed. Specific fieldwork to identify and calculate actual potential impacts to species within the study area has not been conducted due to the numerous potential corridors and alignments. Narrowing down the potential corridors will make groundtruthing more feasible. Furthermore, potential direct, indirect, and cumulative effects of this project will be documented in the EIS which is scheduled to be completed at the end of the PD&E Study. Opportunity Florida is committed to working with stakeholders in regards to identifying the potential affect of the proposed project to wildlife resources.*	*These concerns are addressed in the EIS (Section 4.3.14), ESBAR, and ICE Report. Please refer to these documents.*

Environmental Impact Statement Local Government, Public and Agency Kick-off Meetings

Kick-off meetings for the PD&E study were conducted for local government agencies, the public and the resource agencies. The details of these meetings are provided in the Public Involvement Program Summary Report. The dates of the meetings are listed below.

- Local Government Agency Kick-off Meetings

Bay County TPO Citizens Advisory Committee	8/24/05
Bay County TPO Board	8/24/05
Bay County TPO Technical Coordinating Committee	8/24/05
Bay County Commission	9/06/05
Gulf County Commission	9/13/05
Parker City Council	9/21/05
Callaway City Council	9/27/05
Springfield City Council	10/03/05
Mexico Beach City Council	10/11/05
Cedar Grove City Council	10/25/05

- Public Kick-off Meetings

Gulf County	11/28/05
Bay County	11/29/05

- Resource Agency Kick-off Meetings

First Resource Agency Meeting	11/29/05
Second Agency Kick-off Meeting.	3/08/06
ETAT Field Review	4/05/06 through 4/06/06

No comments were made at the local government agency kick-off meetings but during the PD&E Study some of the local governments provided resolution letters or letters of support for the project, or particular alternatives which are provided in the *Public Involvement Program Summary Report*. **Table 8-74** summarizes the comments and FDOT responses from the public kick-off meetings.

Table 8-74: Comments and FDOT Responses from the Public Kick-off Meetings

Comment	Response
Do not consider the middle pathway that goes right over the Wetappo. The creek is pristine and needs to be preserved. The cheapest involves not having to building the bridge over the intercoastal regardless there are many property owners on the Wetappo, south of Pleasant Rest Cemetery Road who have sailboats.	This alternative corridor was eliminated and is not being considered at this point in the PD&E study.
We live on Wetappo Creek. We look forward to a shorter route to Panama City. Our concerns are (1) the noise level of traffic since we can see the power lines from our front porch. (2) The clearance of the bridge height since so many of us have boats that require 50' clearance. During Hurricanes charter boats and shrimp boats take refuge on the creek. (3) The wildlife which is too numerous to mention. We are not against progress we just want it to be carefully thought out first. I favor the western corridor.	(1) Those alternatives that crossed Wetappo at that location have been eliminated. (2) A high-level bridge crossing will be designed over Wetappo Creek and it will allow 50" of clearance. (3) Minimization and avoidance measures were employed on wildlife impacts during the PD&E Study. Please refer to the ESBAR and the EIS for further information on these measures and results.
What will be the tie-in at old 98? (2) What will be the tie in at new 98?	The tie-in to 98 will be at CR 386/US 98 in Gulf County and in close proximity to the Tram Road/US 98 Intersection in Bay County.
Why is the road not going up Jarrott Dannels which is already a cut out road? There are very few residences as opposed to Pleasant Rest Rd. and surrounding which has close to 20 residences. I am concerned about the effects on the wetlands in that area. I prefer corridor A or C from the feasibility study.	The Jarrott Daniels Road was considered at one time but the environmental impacts were too high compared to the other alternatives. Minimization and avoidance measures were employed on wetland impacts during the PD&E Study. Please refer to the EIS or the WER for further information on these measures and results.
The westerly route over the canal is the most desirable.	No comment needed.

Environmental Transportation Decision Making

The Gulf Coast Parkway Project was entered into the ETDM Programming Screen in April 2006. The alternative alignments presented were alignment options of Corridor B, the recommended corridor from the Corridor Feasibility Study. The initial review process by the ETAT was completed on April 30, 2006. At this time, several agencies in the ETAT identified a degree of effect of Dispute Resolution for coastal and marine, ICE, wetlands, and wildlife and habitat.

A meeting to discuss the Dispute Resolution findings was conducted on October 17, 2006. Representatives of the ETAT, including FHWA, FDOT Central Environmental Management Office (CEMO), and FDOT - District Three attended. Members of the ETAT in attendance included USFWS, USACE, USEPA, FDEP, FFWCC, NWFWMD, and the FDCA. During this meeting, the FHWA made the decision to "re-start" the ETDM Programming Screen, which meant that the first Programming Screen review was not published. The "re-start" would include:

- The six options of Corridor B from the Corridor Feasibility Study originally entered into ETDM.
- The other four corridors from the original Corridor Feasibility Study.
- Any additional corridors the ETAT members wished to submit for consideration.

Eight additional alternative corridors were submitted by the ETAT members. Therefore, an analysis of eighteen Alternative Corridors was conducted utilizing the ETDM Programming Screen data to identify which of the corridors were most reasonable to carry forward for more detailed study.

On January 25, 2007 FHWA approved the Purpose and Need Statement for the project and, utilizing the project"s purpose and need criteria, determined that twelve of the possible eighteen corridors acceptably met the project"s purpose and need.

The twelve Alternative Corridors were presented in a second ETDM Programming Screen review on February 13, 2007. At the conclusion of the second Programming Screen review period, the FDOT prepared and entered summary degrees of effects for each environmental category into ETDM, which summarize for the ETAT representatives and the affected community the level of anticipated involvement in each category and how FDOT will address their comments and concerns. **Appendix E** is a table summarizing the ETAT comments and responses.

After the ETAT review of the project in the EST there were four issues identified as Dispute Resolution in the Degree of Effect. These are summarized in **Table 8-75**.

Table 8-75: Summary of Dispute Resolution Issues and Resource Agency Concerns

Dispute Resolution Issue	Resource Agencies Claiming Dispute Resolution	Agency Concerns & Recommendations	Status
Coastal and Marine	NMFS	Federal agencies which permit, fund, or undertake activities which may impact EFH must consult with NMFS and prepare an EFH assessment.	Consultation is on-going with NMFS
		In addition to direct impacts, concerned about the maintenance of natural hydrologic patterns and freshwater inflow to estuarine waters; and pollutants in stormwater runoff from road surface.	Project effects on EFH Resources are discussed in Section 4.3.5
Indirect and Cumulative Effect (ICE)	USEPA	Water quality and aquatic habitat protection should be priority considerations. Access control and future land use must be defined. Stormwater management must be evaluated. Additionally, the spread of invasive species as a result of rapid development is a concern.	Access control will be consistent with FDOT standards for a future SIS facility. Future land use has been addressed in Section 4.1.3 and Section 4.3.20. Stormwater management is summarized in Section 4.3.7 and discussed in detail in the Preliminary Engineering Report (PER). Invasive species will be treated in accordance with FDOT Standard Specifications for Road and Bridge Construction.
	FDEP	Stormwater runoff as a result of potential rural development and its effects of waterbodies are of particular concern.	Stomwater runoff will be treated to state standards for the receiving the water body.
	NMFS	Stormwater runoff as a result of increased residential and commercial development must be addressed. Limited access may help control sprawl.	Stormwater runoff as a result of induced growth is addressed in Section 4.3.20
	USFWS	Secondary and cumulative effects must be evaluated. Secondary and cumulative impacts to wildlife and habitat should be minimized through limited corridor access, proven roadway design, mitigation areas, wildlife crossings, environmentally-sensitive bridge crossings, non-native species control, protected and rare plant protection, water quality protection and hydrologic connection maintenance	Indirect (secondary) and cumulative effects on wildlife and habitat have been addressed in Section 4.3.20.
	NWFWMD	ICE must be analyzed. Dedicated water resource protection should be implemented, including stormwater management, waterfront buffer zones, wetland protection, wetland mitigation, construction and design BMP, and limited access. Potential wetland mitigation plans should be considered, including early	ICE have been analyzed. The discipline report presenting the analysis has been reviewed by the agencies and is summarized in Section 4.3.20.

Dispute Resolution Issue	Resource Agencies Claiming Dispute Resolution	Agency Concerns & Recommendations	Status
		interagency planning in accordance with FS.	
Wetlands	FDEP	Wetland resource / stormwater permit applicant is required to eliminate or reduce impacts through avoidance, fill reductions, typical section, compensatory treatment, and mitigation. Cumulative Effects must be addressed. High-level bridging should be utilized for ICWW/Wetappo Creek, crossing. PCC habitat is a concern.	Wetland mitigation will mitigated as discussed in Section 4.3.4. Cumulative effects have been addressed in Section 4.3.20. High level bridging has been proposed for alternatives utilizing the ICWW/Wetappo Creek alignment. Impacts to PCC habitat have evaluated and discussed in Sections 4.3.14 and 4.3.20.
	NMFS	Natural hydrology, freshwater inflow, and stormwater runoff are concerns. Impacts to EFH must be addressed	Section 4.3.5 presents the evaluation of impacts to EFH.
	NWFWMD	Direct and cumulative impacts should be minimized.	Minimization of direct impacts has been presented throughout Section 2 in the description of the development of alternatives and is summarized in Section 2.4.5.
	USACE	Due to the overall acreage of wetland impacts an EIS should be prepared. Jurisdictional determination, functional analysis, pond siting analysis, wetland avoidance / minimization, a mitigation plan, limited / restricted access, wetland crossing design, and Quality Enhancement Strategies are all recommended.	An EIS is being prepared.
Wildlife and Habitat	FFWCC	An EIS is recommended to address issues of adverse effects to natural resources, the public interest, controversial aspects requiring high agency interaction, and potential for irreversible impacts to the environment including ICE. An interagency Environmental Advisory team is also recommended, as well as participation in the Scoping Process, to address riparian system protection, need for wildlife underpass structures, runoff, population and movement surveys, and PCC mitigation.	An EIS is being prepared and includes the indirect and a cumulative effects analysis (Section 4.3.20). An interagency advisory team was utilized early in the project development process for scoping, developing issue action plans, and especially to develop the ICE analysis methodology. This group has had continued involvement in the project with the review of draft documents summarizing the effects analysis on sensitive resources.
	USFWS	Impacts to protected species must be minimized or avoided, potentially through bridging, habitat acquisition / restoration, developmental balance, limited access, and growth management. In accordance with the Endangered Species Act, direct, indirect, and cumulative effects to species and habitat must be determined; this includes the red-cockaded woodpecker, flatwoods salamander, bald eagle, PCC, and protected and rare plants. Habitat fragmentation, habitat corridors, and wildlife crossings are also issues of concern, as are potential effects to migratory birds. Finally, lighting in coastal environments must be compliant with sea turtle protection.	Impacts to protected species have been minimized as much as feasible for the level of project development. As the project proceeds into the Final EIS phase, additional efforts will be made to further minimize involvement with protected species. An ICE analysis has been conducted and is presented in Section 4.3.20. This analysis addressed the species identified by the USFWS during the advisory group's participation in developing the ICE analysis methodology. The proposed project would not provide lighting in coastal environments.

The Dispute Resolution process in ETDM was intended as a method of resolving conflicts at the agency ETAT level in order to expedite the project in later phases of project development. There is a list of "triggers" for initiating dispute resolution.

- Project is contrary to the goals and policies of the State of Florida
- Project is non-permittable
- Project is contrary to a state or federal resource agency"s program, plan or initiative
- Project has significant environmental cost
- Project purpose and need is disputable

Initial resolution of disputes is an informal process. If the resolution is reached any agreements, understandings and/or recommendations resulting from the informal process are incorporated in the environmental documentation. If the conflict remains unresolved, it will then enter the more formal ETDM Dispute Resolution Process.

The informal process involves the development of an "Issue Paper/Position Paper" to be reviewed by the ETAT member agency heads and the FDOT District Secretary. If dispute cannot be resolved by the local agency heads, then the dispute moves to the statewide or regional agency heads who will review all relevant project information. The agency heads will make the final decision in consultation with the Governor.

At the ETDM programming stage, too much was unknown about the effects of the proposed Gulf Coast Parkway alternatives to reach resolution with the resource agencies. Therefore, Issue Action Plans for each of the four issues identified for dispute resolution (coastal and marine, wetlands, wildlife and habitat, and ICE) were developed in coordination with the agencies that identified the Dispute Resolution issues (**Table 8-76**). These plans were created to establish the conditions for achieving resolution on those controversial issues.

Table 8-76: Issue Action Plans

Issue Action Plans	Content	Status
Coastal and Marine	Outlines procedures to provide detailed information on project effects; identifies concerns to be addressed potential impact on natural hydrology and freshwater inflow to estuarine environment, effects of increased traffic and associated pollutants in stormwater, and effect of induced development; and identifies the resource agencies (NMFS and FFWCC) with which scoping and coordination will occur.	On-going
Indirect and Cumulative Effects	Outlines procedures to provide detailed information on ICE; provides for agency coordination during scoping and throughout study and opportunity to review documents.	On-going
Wetlands	Outlines procedures to provide detailed information on project effects; provides for agency coordination during scoping and throughout study and opportunity to review documents.	On-going
Wildlife and Habitat	Outlines procedures to provide detailed information on project effects; provides for agency coordination during scoping and throughout study and opportunity to review documents.	On-going

Studies have been conducted in accordance with the procedures identified in the Issue Action Plans and draft reports have been reviewed and commented upon by the resource agencies. The comments have been addressed and responded to and the reports have been modified, as appropriate, and resubmitted with response letters (all agency review comments, FDOT response letters, and agency replies can be found in **Appendix J** of the Draft EIS). **Table 8-77** summarizes the status of each discipline report.

Table 8-77: Status of Discipline Reports

Dispute Resolution Issue	Issue Discipline Report	Report Submitted	Agency Comments (Dated)	Comments Addressed, Report Revised, & Resubmitted	Concurrence Status
Coastal and Marine	Essential Fish Habitat Report (attached as appendix to Wetland Evaluation Report)	Yes	NMFS (6/21/11)	Yes	On-going
Indirect and Cumulative Effects	Indirect and Cumulative Effects Report	Yes	USFWS (6/1/11) NWFWMD (6/3/11) FFWCC (6/13/11) NMFS (6/21/11) USACE (7/15/11) USACE (7/16/11)	Yes	Ongoing
Wetlands	Wetlands Evaluation Report	Yes	USFWS (6/1/11) USACE (7/16/11)	Yes	Ongoing
Wildlife and Habitat	Endangered Species Biological Assessment Report	Yes	USFWS (5/18/11)	Yes	Ongoing

Although resolution of all agency concerns will not be achieved with the completion of the Draft EIS, FDOT will utilize the Reasonable Assurance Process discussed in **Sections 4.3.5 and 4.3.14** of the Draft EIS to provide assurance that agency concerns will be addressed in the remaining project phases. Because resolution of agency concerns cannot be fully addressed until a preferred alternative is identified, the impacts are refined, and the details of mitigation measures finalized, the Dispute Resolution process will not be completed until the conclusion of the PD&E study.

Environmental Impact Statement Notice of Intent

The Notice of Intent to conduct an EIS was issued on November 1, 2007 (see **Appendix M)**.

Environmental Impact Statement Agency Scoping Meeting

The scoping meeting for the project was held at the Springfield Community Center on November 14, 2007. Forty-six residents and business owners along with forty-two agencies, public officials, and interested non-governmental groups, including representatives from FHWA, FDOT, USFWS, NMFS, NWFWMD, FDEP, WFRPC, Florida Department of Agriculture and Consumer Services – Division of Forestry, Northwest Florida Transportation Corridor Authority (NWFTCA), Bay County, Gulf County Board of County Commission, City of Callaway, City of Parker, City of Panama City, City of Mexico Beach, Friends of Wetappo Creek, and Gulf county Transportation Committee, and Bay County Audubon Society, attended the meeting. See Section 8.3 for more details on the meeting.

Environmental Impact Statement Request for Cooperating Agencies

On December 4, 2007, the FHWA and FDOT invited six agencies to be Cooperating Agencies as part of the ETDM process for the Gulf Coast Parkway project. No official request or letter was submitted by FHWA for this request as it was done through coordination during the ETDM process. The USACE, USEPA, USFWS, NMFS, FDEP, and NWFWMD agreed to be Cooperating Agencies. All other ETAT agencies are considered to be Participating Agencies.

Environmental Impact Statement Initial Corridor Evaluation

Upon completion of the second Programming Screen review, the Corridor Alternatives Evaluation Summary Report (CAESR) was completed in consultation with the FDOT, the FHWA, and the ETAT. The corridors were evaluated based on their Purpose and Need, social and natural environmental impacts, and total costs to determine which corridors would be identified for further evaluation in the PD&E study. This analysis is discussed in Section 2.2 of the Draft EIS and can also be found in the *Gulf Coast Parkway Corridor Alternatives Evaluation Summary Report.*

A draft version of the CAESR was approved by the FHWA on March 19, 2009 for ETAT review. The ETAT completed their review on April 29 and the report was revised to include an appendix that summarized the ETAT comments and responses to those comments. After the revisions to the CAESR were made and the findings of the report updated, the Final CAESR and its recommendations for corridors to be carried forward for further analysis was approved by FHWA on June 15, 2009.

Environmental Impact Statement Corridor Public Workshop

Two corridor public workshops, one in Bay County and one in Gulf County, were conducted for the Gulf Coast Parkway Project. In addition, prior to the workshops, presentations were made to the local government agencies. The following is a list of meetings associated with the Corridor Public Workshops that occurred.

- Local Government Agency Presentations (July 2008 - August 2008)

  Bay County TPO Citizens Advisory Committee
  Bay County TPO Board
  Bay County TPO Technical Coordinating Committee
  Bay County Commission
  Gulf County Commission
  Parker City Council
  Callaway City Council
  Springfield City Council
  Mexico Beach City Council
  Cedar Grove City Council

- Corridor Public Workshops

  Gulf County - Approximately 109 people attended the workshop held on 8/12/08 at the Centennial Building (2201 Centennial Drive) in the City of Port St. Joe.

  Bay County - Approximately 124 people attended the workshop held on 8/21/08 at the Springfield Community Center (3728 E. 3rd Street) in City of Springfield.

Completion of the Environmental Impact Statement Corridor Evaluation

The *Final Draft CAESR* was submitted to the ETAT on March 31, 2009 for review. A review period was provided, from April 1 to April 29, 2009, and on April 15, 2009 a meeting/teleconference was held for the ETAT members to ask questions and/or discuss the report.

On June 15, 2009, the FHWA issued their final approval of the *CAESR*, which includes a summary of the comments received from the ETAT along with responses to those comments in its appendix. Based on

the ETAT feedback, two additional alternatives were included for further analysis. Therefore, a total of five Alternative Corridors were selected for the development of alignments during the PD&E Study.

The main issue to come out of this corridor evaluation was that the alternatives may involve historic and archeological sites and these sites might be subject to section 4(f).

Environmental Impact Statement Alternatives Public Workshop

Two alternative public workshops, one in Bay County and one in Gulf County, were conducted for the Gulf Coast Parkway Project. In addition, prior to the workshops, presentations were made to the local government agencies. The following is a list of meetings associated with the Alternatives Public Workshops that occurred.

- Local Government Agency Presentations (September 2009 - October 2009)

  Bay County TPO Citizens Advisory Committee
  Bay County TPO Board
  Bay County TPO Technical Coordinating Committee
  Bay County Commission
  Gulf County Commission
  Parker City Council
  Callaway City Council
  Springfield City Council
  Mexico Beach City Council
  Cedar Grove City Council

- Alternative Public Workshops

  Gulf County - the workshop was held on 10/15/09 at the Centennial Building (2201 Centennial Drive) in the City of Port St. Joe.

  Bay County - the workshop was held on 10/20/09 at the Springfield Community Center (3728 E. 3rd Street) in City of Springfield.

Main issues at these meetings were nature environmental impacts, economic gain from the project, potential relocations of landowners, federal monies involved / construction costs, access management to existing residents, congestion impacts to existing US 98, and possible realignments from public input.

Environmental Impact Statement Stakeholders Public Workshop

A Stakeholders Public Workshop was held on November 3, 2009, from 1:30 to 3:30 p.m. at the Woodlawn United Methodist Church (219 North Alf Coleman Road) in Panama City Beach, Florida.

No comment forms were submitted at this meeting. However the Port Panama City Port Authority (Port Authority) did object to Alternative 14 traveling through their planned Bay County Distribution Center. Further meetings and coordination were held with the Port Authority and it was agreed that if Alignment 14 was ultimately selected as the preferred route further coordination would occur to make sure that the best solution for designing the alignment through their property would be considered.

8.10 COORDINATION WITH AGENCIES

Agency coordination for the EIS began with the publication of the project in the FDOT ETDM Programming Screen and issuance of AN. As noted above under Environmental Transportation Decision Making, the project was republished in the programming screen with additional corridors developed by members of the EST. Since several members of the ETAT claimed Dispute Resolution regarding some area resources, these ETAT members were invited to participate in an advisory group for the project. It is this group that participated in the development of Issue Action Plans to help resolve the Dispute Resolution concerns. This group has continued to contribute to the project at various milestones in the project‟s development, including: the corridor evaluation phase leading to the selection of the viable corridors, guidance and participation in development of the methodology for the ICE analysis, and reviews of draft discipline reports for those issues of concern and the Draft EIS. Other agency coordination activities not specifically related to the agency advisory group are summarized below.

8.10.1 Agency Scoping Meeting

In addition, a formal Scoping Meeting was held on November 14, 2007. The purpose of the scoping meeting was to:

1. Determine the scope and the significance of issues and the degree of analysis required in the EIS. This included identifying the range of alternatives and impacts to be evaluated.

2. Identify and eliminate from detailed study those issues which are not significant or which have been covered by prior environmental studies, thereby narrowing the discussion of those issues with effects on the human environment in the EIS by providing a reference to their coverage elsewhere (i.e., other sections of the EIS, technical reports).
3. Allocate assignments for preparation of EIS among lead and cooperating agencies with the lead agency (FHWA/FDOT) retaining responsibility for the EIS.

4. Identify any other environmental documents which are being prepared and are related to, but are not part of, the scope of the Draft EIS under consideration.

5. Identify other environmental review and consultation requirements so that the lead and cooperating agencies may prepare other required analysis and studies concurrently with the EIS. Examples of additional requirements include surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act of 1966, the Endangered Species Act of 1973, and other environmental laws and executive orders.

6. Identify if any permits, licenses, or entitlements are necessary.

7. Discuss the relationship between the timing of the preparation of environmental analyses and the agency‟s tentative planning and decision-making schedule.

No agencies responded to the Scoping Meeting Notice. The Scoping Meeting Notice is located in the appendices of the *Public Involvement Program Summary Report*.

The Scoping Meeting was held at the Springfield Community Center. Forty-six residents and business owners along with 42 agency and public officials attended including representatives from FHWA, FDOT, USFWS, NMFS, NWFWMD, FDEP, WFRPC, Florida Department of Agriculture and Consumer Services - Division of Forestry, Northwest Corridor Transportation Authority (NWFTCA), Bay County, Gulf County Board of County Commissioners, City of Callaway, City of Parker, City of Panama City,

City of Mexico Beach, Friends of Wetappo Creek and Gulf County Transportation Committee, and Bay County Audubon. Topics discussed at the meeting included:

- Introduction to project background, project need, ETDM process, and ETAT review and comment.
- Schedule and process of the corridor evaluation study, EIS, funding, and public and agency involvement.
- Preliminary corridors submitted and commented on by the ETAT in the ETDM Programming Screen review and corresponding environment and socioeconomic impacts, engineering alternatives, traffic service factors, costs, and evaluation matrix.

One comment was presented at the Scoping Meeting:

Comment: The Sandy Creek area is known to be an area of intense high density of threatened and endangered species in the study published by the Nature Conservancy in 1996. There is concern with the road causing increased development and with the road potentially bisecting important habitats.

Response: *The study team is aware of the sensitivity of the Sandy Creek area and is developing alternatives that avoid or minimize involvement with the listed species and their habitat in this area.*

No questions from the general public were received.

Five comments were received after the Scoping Meeting:

Comment: Suggested the construction of "comfort stations" along the roadway.

Response: *No response required.*

Comment: Expressed concern about the project dumping more traffic on already stressed roadways (US 231 and I-10) during hurricane evacuations. Expressed concern about the impact of development on the wildlife and habitat in this region.

Response: *The same amount of traffic would be on US 231 and I-10 with or without the project. The proposed roadway, by providing an alternate route, would divert some of that traffic further to the north on US 231 than they would utilize access under the No Build scenario thereby relieving congestion in the Panama City area and along key roadways such as US 98. Relieving congestion on the roadways reduces evacuation times, especially from those areas nearest the coast.*

The direct, indirect, and cumulative effects of the proposed alternatives, including the No Build, on the wildlife and habitat within the region will be evaluated as part of the environmental impact study being performed for this project.

Comment: Risk of environmental harm that could result from this project extends far beyond the footprint of the alternative ultimately selected and the integrity of the EIS depends on a full analysis of the road itself and effects of the readily foreseeable growth it will facilitate.

Response: *An analysis of the indirect and cumulative effects of the proposed alternatives will be conducted during the environmental impact study.*

Comment: Made suggestions for adaptations of Alternatives 7 and 16 to benefit more residents and travelers.

Response: *No response required.*

Comment: Opposed the project due to its potential impact on the environment. Expressed concern over the "special interests" that would be the only beneficiaries of a constructed parkway.

Response: *The project's purpose and need have been established as: 1) enhance economic development in Gulf County through provision of direct access to major transportation facilities (regional freight transportation routes and intermodal facilities); improved mobility; and direct access to tourist destinations in south Gulf County; 2) improve mobility within the regional transportation network by providing a new connection to existing and future transportation routes consistent with the Bay County LRTP; 3) improve security of the Tyndall AFB by providing a shorter detour route, and 4) improve hurricane evacuation for residents of coastal Gulf County by providing an additional evacuation route. The beneficiaries of this project are the residents of Gulf and Bay counties and travelers of the transportation network of which this project will become a part.*

While the proposed improvements have been developed to meet the requirements established by the project's purpose and need, they have been and are continuing to be done so while considering the potential environmental impacts they may incur. It is the intent of the PD&E process to ultimately identify an alternative that meets the project's purpose and need while minimizing adverse effects on the socioeconomic, natural, and physical environment of the study area.

The EIS being prepared for this project, with agency coordination and public involvement, will document that process. It is the intent of the PD&E stage of project development to develop alternatives that meet the project's purpose and need, compare their impacts, and identify avoidance and mitigation measures that will offset the adverse effects.

The Scoping Meeting transcript and sign-in sheets are located in the appendices of the *Public Involvement Program Summary Report* prepared for this project.

8.10.2 Environmental Agency Meetings

In addition, numerous field and office meetings, email correspondences, and phone conversations with regards to natural resource assessments and analysis techniques have occurred since this project was initiated in 2006. Discussion of dispute resolution issues identified through review of the project in the EST resulted in the drafting and subsequent approval of the following Issue Action Plans (**Appendix A**): Coastal and Marine Action Plan, ICE Action Plan, Wetlands Action Plan, and Wildlife and Habitat Action Plan. Elements of each plan were incorporated into supporting resource assessments that culminated in various technical documents, e.g., ESBAR, Wetland Evaluation Report, in support of the PD&E and NEPA processes.

As the project has progressed, studies have been conducted in accordance with the procedures identified in the Issue Action Plans and draft reports have been prepared and subsequently reviewed and commented upon by the resource agencies. The comments have been addressed and the reports have been modified, as appropriate, and resubmitted with response letters (**Appendix J** of the Draft EIS). **Table 8-76** above,

summarizes the status of issues addressed in the Issue Action Plans. **Table 8-77,** above, summarizes the status of each discipline report.

Because resolution of agency concerns cannot be fully addressed until a preferred alternative is identified, the impacts of that alternative are refined, and the details of mitigation measures worked out, the Dispute Resolution process will not be completed until the conclusion of the PD&E study. Although resolution of all agency concerns will not be achieved with the completion of this Draft EIS, FDOT will utilize the Reasonable Assurance Process discussed in **Sections 4.3.5 and 4.3.14** of the Draft EIS to provide assurance that agency concerns will be addressed in the remaining project phases.

A summary of other agency coordination activities is provided in **Table 8-78**, below.

Table 8-78: Summary of Gulf Coast Parkway Agency Correspondence

Date	Agency	Type of Correspondence	Representative
2/2/2007	USFWS	Email correspondence concerning Guidelines for Conducting and Reporting the results of Botanical Surveys.	Mary Mittiga, USFWS
4/23/2007	USFWS	Email correspondence to set up field review meeting.	Mary Mittiga, USFWS
5/1/2007	USFWS	Field meeting to review proposed Gulf Coast Parkway corridors.	Patty Kelly, Mary Mittiga, Vivian Negron-Ortiz, USFWS
5/2007	Multiple Agencies	Wetlands Field Evaluation Methodology Consultation. Email correspondence was sent between the above agencies and FDOT to discuss the proposed wetland evaluation methods for the PD&E study. Revisions and suggestions were shared by the agencies and a methodology was determined.	Mary Mittiga, USFWS; Ted Hoehn, FFWCC; Andy Phillips, USACE
5/14/2007	USFWS	Email correspondence regarding listed plant species information.	Patty Kelly & Mary Mittiga, USFWS
7/24/2007	FFWCC	Meeting to discuss State species concerns.	Scott Sanders, Ted Hoehn, Terry Gilbert, Ernest Ladkani, Greg Vaughn, Eric Schneider
8/28/2007	Multiple Agencies	Meeting to discuss Draft Issue Agreement Plan.	ETAT
8/29/2007	FFWCC	Email correspondence concerning location data for PCC.	John Hines, FFWCC
8/2007 and 9/20/2007	NMFS and FFWCC	Multiple email messages regarding EFH survey methods, modifications to survey methods due to field conditions, and final approval of survey methods.	David Rydene, NMFS; Lisa Gregg, FFWCC; Ted Hoehn, FFWCC
9/20/2007	FFWCC	Email request for black bear data in Bay and Gulf Counties and/or Northwest Florida in general (Bear Roadkill, Bear Telemetry, Nuisance Bear and Bear Range). Also requested two reports: Closing the Gaps (latest edition), Integrated Habitat Ranking System.	FFWCC
10/9/2007	USFWS	Email correspondence about flatwoods salamander assessment methods and comments on assessment method approach.	Hildreth Cooper, USFWS
11/7/2007	Multiple Agencies	Email correspondence concerning PCC field meeting focused on species identification and draft mitigation options.	David Cook, FFWCC
11/29/2007	USACE	Follow-up to USACE inquiring about coordination with the NMFS on EFH.	Andy Phillips, USACE
7/8/2009	Multiple Agencies	Meeting with ETAT to discuss project status, finalization of CAESR, and to develop Cumulative Effects (CE) Advisory Group and agree on Cumulative Effects Methodology for project.	ETAT

8/11/2009	Multiple Agencies	Meeting with CE Advisory Group to finalize methodology, discuss the group guidelines, and to begin steps 1 through 3 of the Cumulative Effects Evaluation.	Agency Advisory Group
9/11/2009	Multiple Agencies	Meeting with CE Advisory Group to develop boundaries for resources to be evaluated in the CE and to develop the time and geographic scope of the study.	Agency Advisory Group
10/21/2009	Multiple Agencies	Meeting with CE Advisory Group to discuss characterizations of existing environment, impact thresholds for resources, and past, present, and future actions affecting each resource	Agency Advisory Group
12/8/2009	FFWCC	Email correspondence listing wildlife species of potential concern, potential indirect impacts, and generalized mitigation objectives and goals.	Terry Gilbert, FFWCC
12/8/2009	NMFS	Email correspondence concerning EFH indirect impact analysis related to alignment buffers.	David Rydene, NMFS
12/9/2009	Multiple Agencies	Email and phone correspondence about buffer widths associated with indirect impact assessments concerning threatened and endangered species and EFH.	Ted Hoehn, FFWCC, David Rydene, NMFS; Mary Mittiga, USFWS, Terry Gilbert, FFWCC
12/18/2009	FFWCC	PCC data/assessment methods	John Himes, FFWCC
4/20/2011	FDEP NMFS NWFWMD USACE USCG USEPA USFWS	Submittal of Pre-Draft EIS and draft technical reports were submitted to cooperating agencies as required by NEPA and in compliance with 23 CFR Part 771	David Rydene, NMFS Ron Bartel, NWFWMD Irene Sadowski and Randy Turner, USACE Commander, 8th District, USCG Madolyn Dominy, USEPA Donald Imm and Mary Mittiga, USFWS
4/20/2011	USFWS	Submitted copy of ESBAR and WER for concurrence of affect findings.	Mary Mittiga, USFWS
3/4/2013	USFWS NMFS NWFWMD USCG	Response letters sent for comments received from these agencies on the pre-draft EIS and Draft Cumulative Effects report	Mary Mittiga, USFWS David Rydene, NMFS Duncan Cairns, NWFWMD David Frank, USCG
8/1/2013	USCG	Response to reply from USCG on letter sent regarding the revisions to the pre-draft EIS on March 4, 2013	David Frank, USCG

8.11 PUBLIC COORDINATION

The public involvement for the Gulf Coast Parkway to date has occurred in two stages: (1) during the Corridor Feasibility Study and Project Concept Report, and (2) since the initiation of the SEIR and EIS. To date there have been no requests for Limited English Proficiency (LEP) language services; however, should the need arise, LEP services are available. The following provides further detail of the public efforts previously mentioned for these two phases.

8.11.1 Corridor Feasibility Study Public Involvement

An AN was distributed on May 14, 2002, upon initiation of the Gulf Coast Parkway Corridor Feasibility Study in accordance with the requirements of Part 1, Chapter 2 (now Chapter 8, of the FDOT *Project Development and Environment Manual)*. This was followed by local government kick-off meetings for the Panama City – Bay County MPO [now TPO]), the Bay County Commission, the Gulf County Commission, the Calhoun County Commission, and the city councils for Callaway, Parker, and Mexico Beach.

Three newsletters were distributed during the study to approximately 3,000 people in Gulf and Bay counties and the communities of Springfield, Mexico Beach, and Callaway. The first, published in November 2002, described the study area, the corridor feasibility study process, and provided names with contact information. The second newsletter, distributed in February 2003, summarized the progress on

the study and provided information about the forthcoming corridor workshops. The final newsletter was submitted at the conclusion of the corridor feasibility study to inform the public of the study findings and the next steps in the project development process.

Three corridor workshops, held during March 2003, were conducted in accordance with the requirements in the FDOT *Project Development and Environment Manual*. A total of 102 people attended the three workshops. Six formal comments were made during the meetings.

1. One asked how the economic benefits had been determined.

   Response: *Mr. Semoon Chang determined these benefits using an economic model that essentially factors in savings in transportation costs over existing conditions. The new roadway is looked upon as a tool by the model.*

2. One objected to Alternative Corridor 7 (at the time known as Corridor A in the Corridor Feasibility Study) on environmental grounds.

   Response: *Corridor 7 is not under consideration anymore. It was eliminated from the analysis in the corridor phase of the PD&E Study.*

3. Two favored improving existing roads.

   Response: *Improving existing roads was considered in the corridor phase of the PD&E Study. It was later eliminated as it did not meet purpose and need of the project.*

4. One urged a regional approach to the planning study.

   Response: *The regional planning approach was taken into account and used in the ICE Study for the project.*

5. One asked for clarification on whether the proposed project was to be a four-lane facility.

   Response: *The ultimate typical section is a 4-lane facility.*

6. One asked how much of the property along the right-of-way was owned by the St. Joe Company.

   Response: The amount of land owned by the St. Joe Company was unknown and was not a factor in the location of corridors.

Twelve written comments were received during the comment period.

7. Eight comments were in favor of the project, four specified Alternative Corridor 15 (Corridor D in the Corridor Feasibility Study) as a preferred corridor.

   Response: No response needed.

8. One opposed Corridor E (no longer under consideration but was east of Alternative 9 and connected to US 231 just south of Youngstown, FL).

   Response: *Corridor E is not under consideration anymore. It was eliminated from the analysis in the corridor phase of the PD&E Study.*

9. One supported the multi-use trail.

   Response: No response needed.

10. One expressed support for widening existing SR 71.

    Response: This was considered in the corridor evaluation phase and eventually eliminated. It did not meet the purpose and need of the project.

11. One supported a tri-county planning process instead of a new road.

    Response: *A new roadway is needed to meet the purpose and need of the project.*

Numerous oral comments supporting the project were made to FDOT staff during the open-house portion of the workshop.

In addition, resolutions supporting the project were received from the Callaway City Commission (Resolution #03-04, dated February 17, 2003), the City of Panama City (Resolution #022503-1, dated February 25, 2003), the Springfield City Commission (Resolution #03-02, dated February 24, 2003), and the Panama City Urbanized Area MPO (Resolution #03-06, dated April 28, 2003), which recommended Corridors A (Alternative 7) or B (Alternatives 9 or 12).

Tyndall AFB also submitted a letter indicating that the project would benefit security at the base by providing a suitable alternative route for the public. Tyndall AFB indicated this would significantly upgrade its force protection posture and the safety and security of its personnel and resources, as well as enhance its ability to execute its mission in heightened threat conditions.

8.11.2 PD&E Public Involvement

At the initiation of the SEIR study, prior to the appropriation of federal for the project, an AN for the project was distributed to the Florida State Clearinghouse – FDEP/OIP and other interested federal, state, regional, and local agencies on August 24, 2005. Also, a series of kick-off meetings were held with local government officials, the public, and regulatory agencies. A list of the public kick-off meetings and the dates they were conducted are provided in **Table 8-79**.

Table 8-79: Gulf Coast Parkway PD&E Study Public Kick-off Meetings

Group	Date of Meeting
Gulf County Public	11/28/05
Bay County Public	11/29/05

Both public kick-off meetings provided an opportunity for the public to review exhibits, obtain hand-outs, and ask questions before the project presentation. The presentation included a description of the prior studies and the selection of Corridor B from the Corridor Feasibility Study, the development of the six alignment options to be studied, an explanation of the study to be conducted and the schedule for completion, and an explanation on how to obtain additional information. Following the presentation, the project team remained to answer any questions. A lengthy discussion was held with a few members of the public following the presentation providing more detail on the project, the project development process, and the funding situation. Overall, the public was favorable to the project.

A total of five comment sheets were returned during the formal comment period.

- Three comments favored the western route across the ICWW and Wetappo Creek.
- One asked why the alignment was not utilizing Jarrott Daniels Road (an unpaved road) and indicated a preference for any of the corridors from the corridor study except for the one selected.
- One asked how the new road would tie to US 98.

8.11.3 Environmental Impact Statement Public Involvement

Federal funds were appropriated for the project on August 10, 2005, necessitating preparation of an EIS. Public Involvement activities that have been conducted since the change to an EIS are discussed here.

Invitational mailers/letters to each of the scheduled Public Workshops were mailed to federal and state agencies, local officials, and owners of property within 300 feet (ft) of the centerline of the proposed alternatives. This notification process was used for the August 2008 and October 2009 Public Workshops. Additional concerned individuals or groups identified during the study were added to the project mailing list database throughout the course of the study and also received invitations.

To ensure notification to all of the interested public, a newspaper advertisement was placed in *The Port St. Joe Star* and *the Panama City News Herald,* for each Public Workshop. Each advertisement ran approximately one week in advance of its respective workshop, announcing the specific public workshop meeting date, location, and time. Also, press releases were distributed to the print media one week in advance of the workshops.

8.11.3.1 Alternative Corridors Public Workshops

Two Alternative Corridors Public Workshops were held to provide information to the public about the 12 corridors being considered for the Gulf Coast Parkway and to obtain public input regarding the corridors under consideration. Notifications of the workshops were published in *The Port St. Joe Star* on August 7, 2008 and in the *Panama City News Herald* on July 31, August 3, August 4, and August 10, 2008.

The Alternative Corridors Public Workshop in Gulf County was held from 6:00 to 7:30 pm on August 12, 2008 at the Centennial Building (2201 Centennial Drive) in the City of Port St. Joe. Approximately 109 people attended. The workshop was conducted using an "open house" format, allowing the public to view aerial photography, maps, and comparative data of the study area and the proposed corridors. FDOT representatives and the study consultant were also available to answer questions and discuss the project. After the "open house" period, a formal presentation was delivered followed by a question/comment period. During the workshop, a public opinion survey was made available which could be filled out and submitted at the workshop or taken home and submitted by mail at a later date. A public comment sheet was also provided along with a handout to each attendee for them to read over information about the project and leave a written comment. Additionally, a court reporter was available at the workshop for any individuals who wished to leave a public comment in this manner.

Four comments were received at the first Corridor Alternatives Public Workshop. Below are the comments and FDOT"s resulting response or action:

Comment: This road is to support future tourism and commerce in Gulf County and Port St. Joe.
Response: *No response needed.*

Comment: What impact will this have on houses along the Parkway, specifically in Overstreet? Will this affect insurance costs to the homes located on the Parkway?

Response: *The proposed project corridors are being developed to minimize residential and business relocations. However, should the selected alternative require the acquisition of property involving a relocation, 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 proposed project is not anticipated to adversely affect insurance costs to homes located along the project route. A slight positive effect may occur to a few properties where access and response times are significantly improved by the project, but this would need TBD by contacting your insurance carrier once the route was constructed.

Comment: Would project effect property rights? The property has been family owned for 20 years.

Response: *The proposed project would not affect property rights, nor would access be denied. Should right-of-way need to be acquired, 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).*

Comment: We favor Alternatives 7, 8, 11 and 17. Our favorite is Alternative 17.

Response: *No response needed.*

An Alternative Corridors Public Workshop was also held in Bay County on August 21, 2008 at the Springfield Community Center (3728 E. 3rd Street) in the City of Springfield. Approximately 124 people attended. The purpose and format of the workshop was identical to the workshop held in Gulf County, as was the information presented. Again, a public opinion survey, public comment sheet accompanying a meeting handout, and a court reporter were made available to all attendees.

Seven comments were received at the second Corridor Alternatives Public Workshop. Below are the comments and FDOT"s resulting response or action:

Comment: Would like to see Nehi Road to SR 390 option.

Response: *No response needed.*

Comment: I own property along Alternatives 7 and 17 and would like to work with FDOT on road alignment.

Response: *No response needed.*

Comment: Gulf Coast Parkway would provide improved east-west access to region and airport.

Response: *No response needed.*

Comment: Consider putting new road connection through Callaway Heights Area on Highway 22.

Response: *No response needed.*

Comment: Favor Alternatives 7 and 17.

Response: *No response needed.*

Comment: Favor Alternatives 7 and 17. Impressed with Presentation and Accessibility.
Response: *No response needed.*

Comment: Favor Alternative 11, then Alternatives 12 or 13. Ease traffic and accessibility to Panama City.
Response: *No response needed.*

Following the workshops, a public comment period in which the comment forms and public opinion surveys could be returned was held open until August 31, 2008. This feedback was used to assist in determining corridors for further study. A summary of the survey responses is provided in Section 6.3.4.1.

In addition to the workshops on August 12 and 21, the project website (www.gulfcoastparkway.com) also provided a means for the public to view and/or download all of the material that was presented at the workshops, including the presentation. The public opinion survey and comment forms were also available on the project website where both could be filled out online and submitted or downloaded and returned by mail.

Illustrations of the proposed Alternative Corridors, Roadway Sections, and a copy of the PowerPoint presentation shown at the workshops are located in the appendices of the *Public Involvement Program Summary Report*.

8.11.3.2 Alignment Alternatives Public Meeting

The first Alignment Alternatives Public Meeting was held on October 15, 2009, from 6:00 to 7:30 p.m. in Bay County at the Springfield Community Center in Springfield, Florida. This meeting was attended by representatives from local municipalities and the public. The purpose of the meeting was to present the 5 alternative roadway alignments, the roadway typical sections, and comparative information on each alignment to the public and to receive comments and preferences on the alternative roadway alignments. This feedback was used to assist in determining the publicly preferred alternative for the study.

At the meeting, a presentation was given by Ms. Rosemary Woods from PBS&J which provided a project update and then focused on the five alternative roadway alignments, the roadway typical sections, and the environmental, cultural and social concerns, as well as the estimated costs for these alternatives. A public comment period was held after the presentation. The meeting was concluded in an "open house" format, where those in attendance were invited to view the aerial maps and boards on display and speak with project staff.

The second Alignment Alternatives Public Meeting was held on October 20, 2009, from 6:00 to 7:30 p.m. in Gulf County at the Centennial Building in Port St. Joe, Florida. The same presentation and illustrations from the October 15th meeting were provided.

Following the meetings, a public comment period in which the comment forms and public opinion surveys could be returned was held open until October 30, 2009. A summary of the survey responses is provided in later portions of this section.

Seven comments were received at the Alignment Alternatives Public Meetings. Below are the comments and FDOT"s resulting response or action:

Comment: When possible, I would like to have access points on the type of roadway section goes through his property.

Response: *No response needed. This will be provided in the future.*

Comment: I wanted to be included on future comment opportunities.
Response: *His contact information was taken down and added to the interested parties' mailing list.*

Comment: Can the section of Highway 386 using routes 17 and 19 use existing highway before the short section turning left or right? It would save right-of-way acquisition and not relocate people.
Response: *It will use existing highway as much as possible. Every effort will be made to try and avoid relocating people.*

Comment: Am I directly in the path of this project? Is the starting point (CR386 @98) immovable and set in stone? If I am on the border of this project, then I would need to know specifics as to how close this will come to my home?
Response: *No you are not. Yes the southern logical terminus is set in stone at the CR 386/US 98 intersection.*

Comment: Why is Jarrod Daniels Road not being considered? I would like better information and definition of resident impacts through the Wetappo Creek area from Alternatives 8, 14, and 15. How will this reduce my travel time, as all routes are upwards of 30 miles. It only takes me 30 minutes to travel to Callaway how will this reduce my travel time?
Response: *The Jarrott Daniels road was considered in the corridor evaluation phase but the environmental impacts were too high compared to the other corridors therefore it was eliminated. Residential Impacts are covered in detail in the EIS so please refer to it. Depending on where you live, the whole road (total distance) might not be utilized to go from Overstreet to Callaway. The calculated distance for each alternative includes both northern terminuses.*

Comment: How much federal money will be required? Why isn"t this project being done by the NW Fl Transportation Corridor Authority? What level population growth for this area is being projected? Is cost the only consideration for a 2-land versus a 4-land project? Is a project goal to induce more development into this area? Will the roadways have unlimited access to properties adjacent to the right-of-way or will access be limited as associated with a parkway design?
Response: *It is not known at this time how much federal money will be required or utilized. This project was taken over as an FDOT job when Opportunity Florida was disbanded, the NW FL Transportation Authority could have taken it over also. There is not a project goal to induce more growth in the area. Please refer to the EIS and ICE report to see the analysis. It is proposed to be a controlled access typical section so it will not be limited.*

Comment: Why can"t you use St. Joe Co. wooded land, instead of tearing down 26 to 51 beach homes on Hwy 386? Where is the traffic coming from that warrants a four land highway? What does your traffic count on CR 386 show?
Response: *Because FHWA requires we use what is called logical termini. The future traffic is coming back and forth from Mexico Beach, Port St Joe and going north to US 98 Tyndall Parkway, US 231, etc. Please refer to the Gulf Coast Parkway Traffic Report.*

Illustrations of the proposed Alternative Roadway Alignments, Roadway Sections, and a copy of the PowerPoint presentation shown at the meeting are located in the appendices of the *Public Involvement Program Summary Report* prepared for this project.

8.11.3.3 Stakeholders Public Workshop

A Stakeholders Public Workshop was held on November 3, 2009, from 1:30 to 3:30 p.m. at the Woodlawn United Methodist Church (219 North Alf Coleman Road) in Panama City Beach, Florida. The workshop began with a brief presentation, followed by a discussion period to answer questions and to obtain feedback about the project and the specific alternative alignments presented.

At the workshop attendees were given the opportunity to provide comments and feedback. No comment forms were submitted. However the Bay County Port Authority did object to Alternative Alignment 14 traveling through their planned Bay County Distribution Center. A letter from the Authority was submitted to FDOT and is included in the appendices of the *Public Involvement Program Summary Report*. Further meetings and coordination were held with the Port Authority and it was agreed that if Alignment 14 was ultimately selected as the preferred route further coordination would occur to make sure that the best solution for designing the alignment through their property would be considered.

8.11.4 Public Opinion Surveys

Public Opinion Surveys were distributed at the Corridor Assessment Workshops and the Alignment Alternatives Public Meetings to collect public opinion and preferences. The information from the public opinion surveys are utilized as part of the criteria for identifying the publicly preferred alternative. Copies of the surveys are included as **Appendix N**. The analysis of the survey results is summarized in the Public Involvement Summary Report.

8.11.4.1 First Public Opinion Survey

This first public opinion survey was distributed at the Alternative Corridors Public Workshop. The questions in the survey, therefore, were pertinent to the corridors under consideration. The questions were designed to obtain the public‟s preferences for a corridor and to identify the issues of greatest importance. The issues provided include: economic development, project cost, environmental impacts, use of existing roads and bridges, congestion relief or avoidance, hurricane or emergency evacuation, access to the north, access to and between places, versatility, most direct route, property impacts and relocations, personal reasons, bypass of Tyndall AFB, and roadway safety.

The following list presents those issue categories selected most often or second-most often for each corridor.

Corridor 7 was selected most often for cost, access to and/or between places, most direct route, Tyndall Bypass, and personal reasons. When similar corridors were combined, the combined Corridor 7/17 remained the most preferred route for the aforementioned issue categories, but also became the preferred route in the economic and environmental categories.

Corridor 8 was selected most often for versatility. It was second most often selected for the Tyndall Bypass. When combined with Corridor 11, it was second most selected for the additional categories of: use of existing bridges/roadways, access to and/or between places, most direct route, and personal reasons.

Corridor 9 was second most often selected versatility and Tyndall Bypass. Combined with Corridor 12, it was most often selected for use of existing bridges and roadways.

Corridor 10 Corridor 10 in combination with Corridor 13 was second most often selected in the environment category.

Corridor 11 was most often selected for versatility and Tyndall Bypass. Combined with Corridor 8, it was second most often selected for the additional categories of: use of existing bridges and roadways, access to and/or between places, most direct route, and personal reasons.

Corridor 12 was second most often selected for use of existing bridges/roadways and the Tyndall Bypass. Combined with Corridor 9, it was most selected for use of existing bridges and roadways.

Corridor 13 Corridor 13 in combination with Corridor 10 was second most often selected in the environment category.

Corridor 14 was selected most often for congestion relief/avoidance and hurricane/emergency evacuation, and second-most often selected for economic and access to north. In combination with Corridor 15, it was most often selected for economic, congestion relief, hurricane evacuation, access to north, and property impacts/ relocations. The combined Corridor 14/15 was also second most selected for cost.

Corridor 15 was selected most often for access to north and property impacts/relocations, and second most often selected for congestion relief/avoidance and hurricane/emergency evacuation. Combined with Corridor 14, it was most often selected for economic, congestion relief/avoidance, hurricane/emergency evacuation, access to north, and property impacts/ relocations.

Corridor 16 was selected most often for economic and use of existing bridges and roads. It was second most often selected for property impacts/relocations. In the analysis of combined corridors, Corridor 16 was second most often selected for economic, use of existing bridges and roads, and property impacts/relocations.

Corridor 17 was selected most often for economic, environment, and safety. It was second most selected for cost, versatility, access to and/or between places, most direct route, and personal reasons. Combined with Corridor 7 it was most preferred for economic, costs, environment, access to and/or between places, most direct route, personal reasons, and safety. Combined Corridor 7/17 was second most preferred for hurricane evacuation and versatility.

Corridor 18 was second most selected for economic, congestion relief/avoidance, and access to north. In the analysis of combined alternatives, Corridor 18 was second most selected for congestion relief and access to north.

Corridors 7 and 17 were the most preferred corridors. The primary difference between these two corridors was that Corridor 7 was most frequently selected first with Corridor 17 selected second.

Because many of the corridors have very similar alignments (Corridors 7 and 17, 8 and 11, 9 and 12, 10 and 13, and 14 and 15), a second analysis was conducted where the votes for pairs of similar corridors were combined to determine if there would be any change in the preferred corridors from that reached by counting corridors separately. Because of the similarity between corridors it was thought that this would permit a more accurate picture of the public‟s perceptions regarding the corridors.

The combination of Corridor 7 and Corridor 17 remained the most preferred with the second most preferred the combination of Corridors 14 and 15.

The study team then identified the issue of greatest importance to the public. Based on the number of responders (67) selecting it, the issue of greatest concern to the public is the most direct/shortest route. It should be noted that although the greatest number of responders voted for the shortest, most direct route, the shortest/most direct route was not necessarily the same route for all respondents. However, the second most important issue category, access to and/or between places, was selected by less than half the number of respondents (28) selecting the most direct/shortest route. Therefore, it was concluded the most important issue to the public in the identification of an alternative corridor was that it provide the most/shortest route.

8.11.4.2 Second Public Opinion Survey

The second public opinion survey was distributed at the Alternatives Public Workshop. Of the 533 surveys returned, 431 respondents were in favor of the project, 50 were opposed to the project and 52 were undecided about the project.

Table 8-80 provides the responses to questions about the effect of the project on growth and economic benefit.

Table 8-80: Public Opinion Results of the Project's Effects on Growth, Growth Benefit, & Business Benefit

Response	Induces Growth	Growth Benefit	Business Benefit
Yes	420	383	95
No	39	36	6
Don't Know	46	66	48
No Response	28	48	384
Total	**533**	**533**	**533**

The majority of respondents agreed that the proposed project would induce growth and would provide a growth benefit with only 39 disagreeing that the project would induce growth and 36 disagreeing that the project would have a growth benefit. The remainder of the 533 respondents either did not know or did not respond. Only 95 respondents agreed and six disagreed that the project would benefit business, while 48 expressed that they did not know and 384 did not respond.

Respondents were asked to identify their three most important benefits of the project, ranking them from one to three. **Table 8-81** summarizes their responses.

Table 8-81: Total Votes for the Gulf Coast Parkway Project's Benefits

Project Benefits	Rank		
	Most Important	Second-Most Important	Third-Most Important
Decreased Roadway Congestion	36	81	23
Roadway Safety	73	44	0
Improved Travel Time	15	24	**222**
Hurricane/ Emergency	84	84	19
Economic Improvement	**221**	0	0
Induced Growth	31	**91**	25
Tyndall Bypass	13	52	65
Better Connectivity	18	85	45

From **Table 8-81**, the majority of respondents (221) perceived economic improvement as the most important benefit of the project, with hurricane/emergency (84) and roadway safety (73) coming distant seconds. The second most important benefit was less clear as four categories were split nearly equally: induced growth received 91 votes, better connectivity received 85 votes, hurricane evacuation received 84 votes, and congestion relief received 81 votes. The third most important benefit provided by the project was clearly reduced travel times (222).

Respondents were also asked to identify their three greatest concerns regarding the project, again ranking them from one to three. **Table 8-82** summarizes their responses.

Table 8-82: Total Votes for the Gulf Coast Parkway Project's Greatest Concerns

Project Concerns	Rank		
	Most Important	Second-Most Important	Third-Most Important
Increased Roadway Congestion	58	0	0
Roadway Safety	82	18	0
Potential Bridges	32	38	14
Property Relocations	**115**	37	4
Waterway Navigation	4	23	13
Wetlands	23	64	108
Wildlife and Habitat	5	72	**140**
Other Environmental	0	5	84
Induced Growth	38	65	17
Project Costs	100	**101**	60

From **Table 8-82**, the greatest concern identified by the respondents was property relocations (115) followed by project costs (100) and roadway safety (82). The second greatest concern was project costs (101) followed by wildlife and habitat (72), induced growth (65), and wetlands (64). The third greatest concern was wildlife and habitat (140) followed by wetlands (108) and other environmental concerns (84).

Table 8-83 summarizes the responses received to the question of whether or not the benefits of the project outweighed the impacts.

Table 8-813: Project Benefits Versus Project Impacts

Responses	Number Responding
Benefits outweigh Impacts	344
Impacts outweigh Benefits	55
Undecided	64
No response	70
Total	**533**

Approximately 65 percent of the total number of respondents stated that the project benefits outweighed the impacts. If the number of undecided and those that did not respond to the question are eliminated from the total responses received, the percentage increases to 86 percent. Those that believe the impacts would outweigh the project benefits were limited to 10 percent of the total respondents. If those that were undecided or did not respond are eliminated from the total, the percentage of those believing the impacts outweigh the benefits increases to nearly 14 percent.

When asked which direction respondents traveled from US 98 in Gulf County, 234 responded that they traveled to US 231 and 197 responded they traveled to US 98 (Tyndall Parkway). A total of 102 did not answer this question.

Respondents were asked to identify the route they would most likely travel if they were to travel between the project"s southern terminus (US 98 at CR 386) and US 231 and if they were to travel between the southern terminus and US 98 (Tyndall Parkway). **Table 8-84** summarizes the responses to this question.

Table 8-84: Route Most Likely to be Used Depending on Destination

Alternative	US 231	US 98 (Tyndall Parkway)
8	34	46
14	25	23
15	53	19
17	278	281
19	88	68

The alternative route chosen most frequently was Alternative 17 regardless of whether the traveler was going to and from US 98 or to and from US 231. A total of 278 respondents selected Alternative 17 as the best route to travel to US 231, and a total of 281 respondents selected Alternative 17 as the best route to travel to US 98 (Tyndall Parkway).

Respondents were asked to identity their top two publicly preferred alternatives. **Table 8-85** summarizes the responses received for first and second preferences.

Table 8-85: Total Responses for Top Two Publicly Preferred Alternatives

	First Publicly Preferred Alternative					Second Publicly Preferred Alternative					No Build Alternative Selected or None
	8	14	15	17	19	8	14	15	17	19	
Total	69	67	22	287	17	0	18	59	38	280	138

The most selected alternative for most preferred route was Alternative 17 (287) or approximately 54 percent of the total surveys returned had Alternative 17 as their most publicly preferred alternative. The second most preferred route was Alternative 19 (280). There were 138 no responses or votes for the no Build Alternative. This number is approximately 26 percent of the total surveys returned.

A total of 431 of the 533 respondents were in favor or the project, 50 were opposed, and 52 were undecided.

8.11.5 Project Website

The FDOT developed a project website found at http://www.gulfcoastparkway.com. The website was set up to provide the community with the latest project information about the ETDM process, project description, project need, alternatives, schedule, information about public involvement and announcements for upcoming workshops, answers to frequently asked questions, links, documents, and FDOT contact information. It also provides the opportunity for citizens to comment on the study. The project has had over 8,000 visits and over 13,000 web pages viewed.

The project website also provides a means for the public to view and/or download all of the material that was presented at the workshops, including the presentation. The public opinion survey and comment forms were also available on the project website where both could be filled out online and submitted or downloaded and returned by mail.

8.11.6 Public Hearing

FDOT will not make a final decision on the proposed action or any alternative until the public hearing has been held on this project and all comments received have been taken into consideration. The Final EIS/ROD will update the information in this document including any public comments made during or after the public hearing.

8.11.7 Resolutions and Letters of Support

Resolutions from local governments and letters of support from a special interest groups have been received at various stages of the project‟s development. A list of the governments and agencies submitting resolutions or letters of support are listed below. Copies of the documents are provided in **Appendix B.**

- Department of the Air Force (Tyndall AFB) 9/9/02 Letter
- Panama City Metropolitan Planning Organization 4/28/03 Letter
- Panama City Metropolitan Planning Organization Resolution 03-06
- City of Springfield Resolution 09-10
- City of Callaway Resolution 09-23

- Bay County TPO Resolution 09-47
- Gulf County Board of County Commissioners 11/3/09 Letter
- Bay County Board of County Commissioners 11/18/09 Letter
- Bay County Chamber of Commerce Resolution of 12/17/09
- Bay County Chamber of Commerce 1/8/10 Letter
- Port St. Joe Port Authority 10/24/12 Letter
- City of Callaway 11/27/12 Letter
- Gulf County Board of County Commissioners Letter 02/12/13

8.12 REFERENCES

1. Bay County, *Comprehensive Plan,* 1990, amended September 24, 1991, revised and adopted December 15, 2009.

2. Bay County Transportation Planning Organization, *Cost Feasible Plan Report* (January 2007).

3. Apalachee Regional Planning Council, *Strategic Regional Policy Plan*, June 1996 22.

4. Apalachee Regional Planning Council, *Comprehensive Economic Development Strategy for the Apalachee Region of Florida*, September 2007.

5. John S. Adams, Barbara J. Vandrasek, *Transportation as Catalyst for Community Economic Development,* December 2007.

6. West Florida Regional Planning Council, *Bicycle and Pedestrian Plan: Technical Memorandum 2: Existing Conditions Report*, prepared for the Bay County Transportation Planning Organization, December 2005.

7. Apalachee Regional Planning Council*, Comprehensive Economic Development Strategy Report*, September 2007.

8. Florida Department of Transportation*, Community Effect Assessment Handbook*, November 2000.

9. Florida Department of State, Division of Historical Resources, *Cultural Resource Management Standards and Operations Manual, Module Three: Guidelines for Use by Historic Preservation Professionals,* revised August 2003.

10. Florida Department of Transportation, *Project Development and Environment Manual, Part 2, Chapter 12*, January 12, 1999.

11. Florida Department of Transportation, *Cultural Resource Management Handbook,* (revised August 2003).

12. PBS&J, *Cultural Resources Assessment Survey Report*, January, 2011.

13. West Florida Regional Planning Council, *Bicycle and Pedestrian Plan Technical Memorandum 3:Implementation Plan Report*, prepared for the Bay County Transportation Planning Organization, December 2005.

14. Florida Department of Transportation, *Project Development and Environment Manual, Part 2, Chapter 16*, revised September 13, 2006.

15. United States Environmental Protection Agency*, National Ambient Air Quality Standards,* http://www.epa.gov/air/criteria.html

16. Federal Highway Administration*, FHWA Noise Abatement Criteria,* *http://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/probresp.cfm*

17. Federal Highway Administration*, FHWA Traffic Noise Model,* *http://www.fhwa.dot.gov/environment/noise/traffic_noise_model/*

18. Florida Department of Transportation, *Project Development and Environment Manual, Part 2, Chapter 18*, revised November 20, 2009.

19. PBS&J, *Gulf Coast Parkway Wetland Evaluation Report*, February, 2011.

20. Florida Administrative Code, Chapter 62-345, *Uniform Mitigation Assessment Method*, as amended February 24, 2004.

21. Florida Department of Transportation, *Florida Land Use, Cover and Forms Classification System*, *Third Edition*, prepared by the Survey and Mapping Office, 1999.

22. PBS&J, *Essential Fish Habitat Report*, November, 2010.

23. Florida Department of Environmental Protection, Division of Water Resource Management, *Choctawhatchee – St. Andrew Basin Status Report,* June 2003.

24. Florida Department of Environmental Protection, Division of Water Resource Management, *Choctawhatchee – St. Andrew Water Quality Assessment Report,* June 2006.

25. Florida Department of Transportation, *Project Development and Environment Manual, Part 2, Chapter 23*, revised January 8, 2008.

26. PBS&J, *Location Hydraulic Report*, December, 2010.

27. *Preble-Rish, Contamination Screening Evaluation Report, December, 2010.*

28. Florida Department of Transportation, *Scenic Highway Approved Corridors*, http://www.dot.state.fl.us/emo/ScenicHWY/designated.htm, accessed 4/26/10.

29. *Florida Geographic Data Library, http://www.fgdl.org/, accessed December 2010.*

30. Florida Department of State, *Florida Master Site File.*