BY ELECTRONIC MAIL

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: **ACTION:** Addendum Assessment of Adverse Effects Determination for the I-94 East-West Corridor Project from 16th St to 70th St, Milwaukee, WI (Project ID 1060-27-00)

Date: November 2, 2015

From: Bethaney Bacher-Gresock/FHWA
Major Projects Environmental Lead
Madison, WI 53717

In Reply Refer To:
HAD-WI

To: Jim Draeger/Wisconsin SHPO
Reid Nelson/ACHP
Cameron Sholly/NPS
Section 106 Consulting Parties

The Federal Highway Administration (FHWA) – Wisconsin Division Office, in cooperation with Wisconsin Department of Transportation (WisDOT), has developed an environmental impact statement (EIS) for the I-94 East-West Corridor project from 16th Street to 70th Street in Milwaukee, Wisconsin. The purpose of the project is to maintain I-94 as a key link in the local, state, and national transportation network; to address obsolete design of I-94 to improve safety and decrease crashes; to replace deteriorated pavement; and to accommodate existing and future traffic volumes at an acceptable level of service.

This addendum to the September 24, 2014 *Revised FHWA Assessment of Adverse Effects for the I-94 East-West Corridor Project* memorandum provides FHWA's effect determinations for off-interstate improvements not evaluated in the Draft EIS, pursuant to 36 CFR 800.5. This document also serves to inform consulting parties that FHWA intends to make Section 4(f) *de minimis* impact determinations pursuant to 23 CFR 774.5(b)(1) for the Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark and related National Register Historic District.

As part of the preferred alternative in the west segment, WisDOT would construct some off-interstate improvements to mitigate the traffic impacts of partially closing the Hawley Road interchange. These improvements include extending Washington Street to make it easier for drivers in the Hawley Road corridor to access the 68th Street/70th Street interchange. The improvements at Washington Street would not affect any identified historic properties.

In addition to the Washington Street connection, three local roadway intersections have been identified for upgrades to improve local road operations under the partial closure of

the Hawley Road interchange. Each of the intersections would see a modest increase in traffic volumes as a result of the access change at Hawley Road. The local road intersections are:

- 70th Street/Greenfield Avenue
- National Avenue/Greenfield Avenue
- Miller Park Way/National Avenue

The following off-interstate improvement areas include historic properties:

- National Avenue/Greenfield Avenue
  - Paradise Theater
- Miller Park Way/National Avenue
  - Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark

FHWA, in consultation with the State Historic Preservation Office (SHPO), Advisory Council on Historic Preservation (ACHP) and other consulting parties, identified individual Areas of Potential Effect (APEs) for the identified off-interstate improvements associated with the I-94 East-West Corridor project (Attachment 1).

As part of the Section 106 consultation process, FHWA invited consulting parties to share their views on the potential effects the off-interstate improvements may have on the historic properties located within the APEs, pursuant to 36 CFR 800.4(d)(2) and 36 CFR 800.5. According to 36 CFR 800.5(a)(1), "an adverse effect is found when the undertaking may alter, directly or indirectly, any of the characteristics that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association".

FHWA, in consultation with the SHPO, ACHP, National Park Service (NPS) as it pertains to NHLs, the Veterans Administration (VA), and other consulting parties, has applied the criteria of adverse effect, considered the views of consulting parties, and determined that the off-interstate improvements would have No Adverse Effect on the identified historic properties within the APEs:

- Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark
- Paradise Theater

The project would not acquire, alter, or change the characteristics that qualify the properties for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark

The Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark (Soldiers' Home NHL) and the Soldiers' Home National Register Historic District are essentially the same historic property with some slight differences between the historical boundaries. However, those differences are in the southern portion of the property and the Soldiers' Home National Register Historic District would not be

impacted by the off-interstate improvements. This memo discusses only the Soldiers' Home NHL.

The National Asylum for Disabled Soldiers, as it was originally named, was established in 1865. Milwaukee's Soldiers' Home campus is the only one of the three original Soldiers' Home sites nationwide to have its majestic Soldiers' Home intact, and it is also the only one with the majority of its surrounding recuperative village remaining. The Soldiers' Home NHL houses 25 post-Civil War and turn-of-the-20th century buildings, as well as the oldest two-thirds of Wood National Cemetery.

The cemetery was established in 1871 as the Soldiers' Home Cemetery, on the grounds of the National Asylum for Disabled Soldiers, to inter the remains of soldiers who died while in the care of the Soldiers' hospital. The cemetery was renamed Wood Cemetery in 1937 in honor of General George Wood. It became a National Cemetery in 1973 and is the only National Cemetery in Wisconsin. Veterans of conflicts ranging from the war of 1812 to the Iraq war are buried in the cemetery.

The improvements at the Miller Park Way/National Avenue intersection include changes to National Avenue at General Mitchell Boulevard, an entrance to the VA Campus and specifically the VA Medical Center (Attachment 2). The improvements to National Avenue at General Mitchell Boulevard include extending the westbound through-lane an additional 500 feet and constructing a westbound dedicated right-turn lane onto General Mitchell Boulevard. This dedicated right-turn lane would require the acquisition of 0.20 acre of land from the Soldiers' Home NHL on its southern boundary. None of the identified heritage trees (in the Historic American Landscape Survey) would be directly impacted; the land to be acquired is an open, grassy area. The area north of National Avenue between General Mitchell Boulevard and Miller Park Way is an area of grass, trees, and a newly constructed parking lot and is part of the Soldiers' Home NHL, except for the extreme southeast corner. The area on the west side of General Mitchell Boulevard is an open parking lot that serves the VA Medical Center; this area is not within the Soldiers' Home NHL boundary. Additionally, there is a new surface parking lot on the east side of General Mitchell Boulevard with a slight overlap with the NHL.

During consultation, some parties expressed concern about the new construction causing visual impacts to the NHL, particularly to the landscape features and setting, as well as impacts to the heritage trees. FHWA will continue to consult with the City of West Milwaukee and consulting parties to identify a design option that least protrudes into the Soldiers' Home NHL. FHWA will also avoid the removal of the existing trees in the area of the improvements; specifically the tree identified as a heritage tree, which is a roughly 35-year-old Norway Maple. The Programmatic Agreement for the I-94 East-West Corridor project, which is in draft form and will be executed prior to finalization of the Record of Decision, will include stipulations regarding the design of this intersection and the impacts on the NHL and its trees.

The loss of 0.20 acre as part of the improvements would not be a significant impact to the NHL. This area is the far southern boundary of the NHL and the 0.20 acre will not be visible from Wood National Cemetery, nor from the buildings and structures that make up the Soldiers' Home NHL complex. Traffic at the intersection of General Mitchell Boulevard and National Avenue will not increase due to the added turn lane. The NHL will retain its integrity of location, design, setting, materials, workmanship, feeling, and association.

FHWA, in consultation with SHPO, ACHP, and consulting parties, has determined that there would be No Adverse Effect from the Preferred Alternative, including the off-interstate improvements on the Soldiers' Home NHL under 36 CFR 800.5. Pursuant to 23 CFR 774.5(b)(1), FHWA intends to make a Section 4(f) *de minimis* impact determination for the Soldiers' Home NHL based on the written concurrence of SHPO, ACHP, and NPS in this No Adverse Effect finding.

Northwestern Branch, National Home for Disabled Volunteer Soldiers National Register Historic District

While the Northwestern Branch, National Home for Disabled Volunteer Soldiers National Register Historic District (Soldiers' Home National Register Historic District) will not be impacted by the off-interstate improvements, it will be impacted by other elements of the project, as identified in the Final EIS. The No Adverse Effect determination from September 24, 2014 has not changed. Pursuant to 23 CFR 774.5(b)(1), FHWA intends to make a Section 4(f) *de minimis* impact determination for the Soldiers' Home National Register Historic District based on the written concurrence of SHPO and ACHP in this No Adverse Effect finding.

Paradise Theater

The former Paradise Theater, (now the Epikos Church) was designed and built by Urban F. Peacock in 1929 in the 20th Century Revival style. It sits on a triangular lot formed by Greenfield and National Avenues in the city of West Allis, Milwaukee County. The structure exhibits classical, Art Deco, and French Renaissance stylistic elements. The opulent auditorium and lobby are largely intact, including ceramic tile floors, decorative plaster moldings with fruit and flower motifs, and the original grand staircase. The Paradise Theater is a local example of a building type that was once commonly found in downtown and neighborhood areas of many communities in the United States. It is eligible for the National Register under Criterion C for its architectural elements and as an example of a 1920s theater that exhibits a good degree of interior and exterior integrity. The SHPO concurred with the National Register eligibility determination on September 26, 2015.

The Paradise Theater is located on a triangular lot formed by Greenfield and National Avenues at the intersection with 62nd Street. Improvements at this intersection will not require any property acquisition (Attachment 3). Improvements to Greenfield Avenue will include changes to the signal timing, restriping to create a dedicated left-turn lane, and a combined through and right-turn lane in each direction, and the elimination of 70 feet of parking on the westbound lane. Improvements to National Avenue also include signal timing, restriping to create a dedicated right-turn lane, and the elimination of 100 feet of parking on the southbound lane. These improvements intend to decrease the current backup for the left turn onto 62nd Street.

The changes to the traffic patterns on Greenfield and National Avenues would have minimal noise impacts on the Paradise Theater, compared to existing conditions. The traffic volume changes would not be such that it would measurably increase the noise level at this location. The theater is eligible for listing on the National Register because it is a very good example of a 1920s theater that exhibits a high degree of exterior and interior integrity. The improvements to the intersection will not alter the appearance of the theater and will not impact the ability to utilize the building, which is now a church.

The building will retain its integrity of location, design, setting, materials, workmanship, feeling, and association.

FHWA, in consultation with SHPO, ACHP, and consulting parties has determined that there would be No Adverse Effect from the off-interstate improvements on Paradise Theater, under 36 CFR 800.5.

Conclusion

These effect determinations for the off-interstate improvements do not change the overall determination of No Adverse Effect on historic properties from the I-94 East-West Corridor project under Section 106 of the National Historic Preservation Act.

Pursuant to 23 CFR 774.5(b)(1), FHWA requires written concurrence in this No Adverse Effect finding from the SHPO, ACHP, and NPS (as it pertains to the Soldiers' Home NHL) prior to making a Section 4(f) *de minimis* impact determination for the Soldiers' Home NHL and the Soldiers' Home National Register Historic District. If you have no additional questions or comments, please sign below indicating concurrence on the determination of effects for the off-interstate improvements and the overall I-94 project.

Please do not hesitate to contact me at bethaney.bacher-gresock@dot.gov or 608-662-2119 if I can be of additional assistance.

CONCUR: No Adverse Effect on the Soldiers' Home NHL, Soldiers' Home National Register Historic District, and Paradise Theater

Jim Draeger — 1/25/16

Jim Draeger, Wisconsin State Historic Preservation Officer — Date

Reid Nelson, Advisory Council on Historic Preservation — Date

Dr. Michele Curran, National Park Service — Date

Attachment 1: Historic Properties Located in the Area of Potential Effect

Attachment 2: Miller Park Way/National Avenue Intersection Improvement Impact to Soldiers' Home NHL

Attachment 3: Off-Interstate Improvements for Preferred Alternative – Greenfield Avenue and National Avenue Intersection

Attachment 4: Revised FHWA Assessment of Adverse Effects for the I-94 East-West Corridor Project

The building will retain its integrity of location, design, setting, materials, workmanship, feeling, and association.

FHWA, in consultation with SHPO, ACHP, and consulting parties has determined that there would be No Adverse Effect from the off-interstate improvements on Paradise Theater, under 36 CFR 800.5.

Conclusion

These effect determinations for the off-interstate improvements do not change the overall determination of No Adverse Effect on historic properties from the I-94 East-West Corridor project under Section 106 of the National Historic Preservation Act.

Pursuant to 23 CFR 774.5(b)(1), FHWA requires written concurrence in this No Adverse Effect finding from the SHPO, ACHP, and NPS (as it pertains to the Soldiers' Home NHL) prior to making a Section 4(f) *de minimis* impact determination for the Soldiers' Home NHL and the Soldiers' Home National Register Historic District. If you have no additional questions or comments, please sign below indicating concurrence on the determination of effects for the off-interstate improvements and the overall I-94 project.

Please do not hesitate to contact me at bethaney.bacher-gresock@dot.gov or 608-662-2119 if I can be of additional assistance.

CONCUR: No Adverse Effect on the Soldiers' Home NHL, Soldiers' Home National Register Historic District, and Paradise Theater

Jim Draeger, Wisconsin State Historic Preservation Officer	Date
for Charlene Dwin Vaughn Reid Nelson, Advisory Council on Historic Preservation	11/19/15 Date
Dr. Michele Curran, National Park Service	Date

Attachment 1: Historic Properties Located in the Area of Potential Effect

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The building will retain its integrity of location, design, setting, materials, workmanship, feeling, and association.

FHWA, in consultation with SHPO, ACHP, and consulting parties has determined that there would be No Adverse Effect from the off-interstate improvements on Paradise Theater, under 36 CFR 800.5.

Conclusion

These effect determinations for the off-interstate improvements do not change the overall determination of No Adverse Effect on historic properties from the I-94 East-West Corridor project under Section 106 of the National Historic Preservation Act.

Pursuant to 23 CFR 774.5(b)(1), FHWA requires written concurrence in this No Adverse Effect finding from the SHPO, ACHP, and NPS (as it pertains to the Soldiers' Home NHL) prior to making a Section 4(f) *de minimis* impact determination for the Soldiers' Home NHL and the Soldiers' Home National Register Historic District. If you have no additional questions or comments, please sign below indicating concurrence on the determination of effects for the off-interstate improvements and the overall I-94 project.

Please do not hesitate to contact me at bethaney.bacher-gresock@dot.gov or 608-662-2119 if I can be of additional assistance.

CONCUR: No Adverse Effect on the Soldiers' Home NHL, Soldiers' Home National Register Historic District, and Paradise Theater

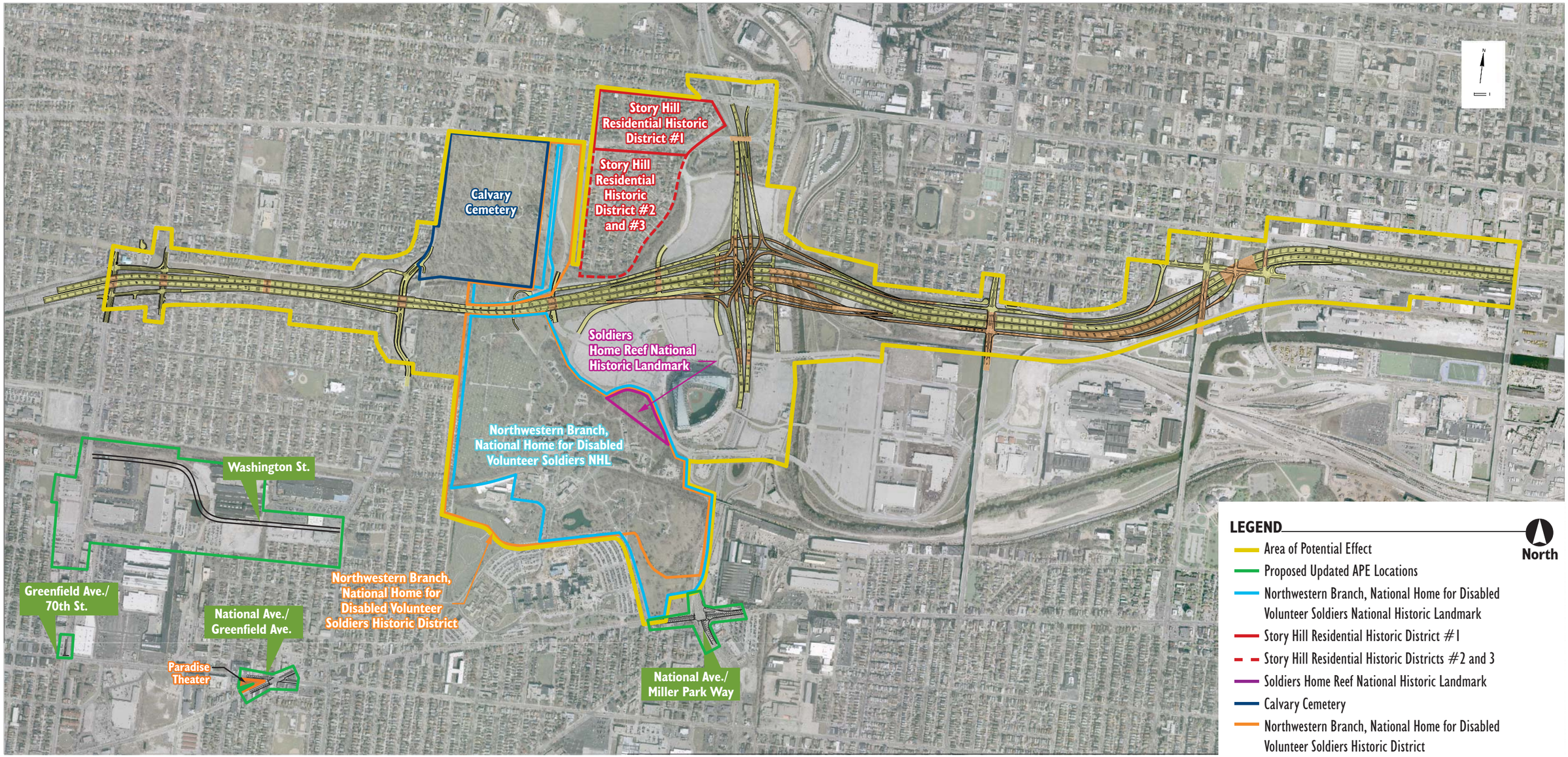
Jim Draeger, Wisconsin State Historic Preservation Officer	Date
Reid Nelson, Advisory Council on Historic Preservation	Date
Cameron Sholly, National Park Service Midwest Region	10/28/15 Date

Attachment 1: Historic Properties Located in the Area of Potential Effect

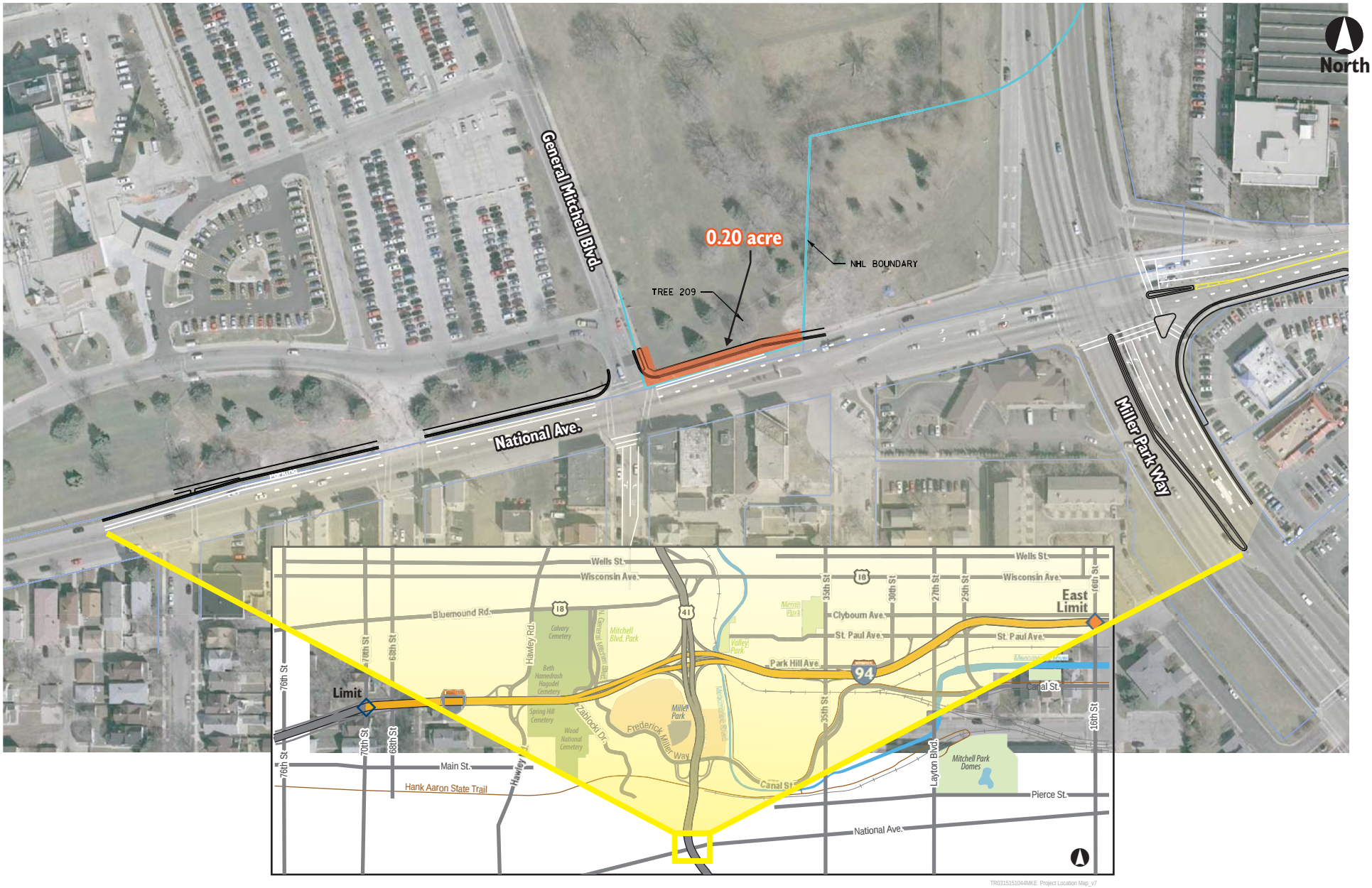
Attachment 2: Miller Park Way/National Avenue Intersection Improvement Impact to Soldiers' Home NHL

Attachment 3: Off-Interstate Improvements for Preferred Alternative – Greenfield Avenue and National Avenue Intersection

Attachment 4: Revised FHWA Assessment of Adverse Effects for the I-94 East-West Corridor Project



Preferred Alternative



TR0315151044MKE Project Location Map_v7

U.S. Department of Transportation
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Attachment 2

Miller Park Way/National Avenue Intersection Improvement Impact to Soldiers' Home NHL

U.S. Department of Transportation
Federal Highway Administration

Attachment 3

Off-Interstate Improvements for Preferred Alternative – Greenfield Avenue and National Avenue Intersection

TR0315151044MKE Attachment 2_GreenfieldAve_Improvements_v1.ai 10.26.15 sls

Attachment 4

BY ELECTRONIC MAIL

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: INFORMATION: Revised FHWA Assessment of Adverse Effects for the I-94 East – West Corridor Project from 16th St to 70th St, Milwaukee, WI (Project ID 1060-27-00)

Date: September 24, 2014

From: Bethaney Bacher-Gresock
Major Projects Environmental Manager
Madison, WI

In Reply Refer To:
HDA-WI

To: Dobra Payant
Deputy Project Manager, SE Region
Waukesha, WI

The Federal Highway Administration–Wisconsin Division Office (FHWA), in cooperation with Wisconsin Department of Transportation (WisDOT), is developing an environmental impact statement (EIS) for a proposed project on I-94 from 16th Street to 70th Street in Milwaukee, Wisconsin. This memorandum provides FHWA's effect determinations pursuant to 36 CFR 800.5. FHWA submitted the first draft of this memorandum to the consulting parties for review and comment in April 2014. This revised memorandum reflects the comments received on the first draft as well as subsequent consultation meetings.

FHWA, in consultation with the State Historic Preservation Office (SHPO) and other consulting parties, identified the project's Area of Potential Effect (APE) and the following historic properties within it.[1]

- Calvary Cemetery
- Northwestern Branch, National Home for Disabled Volunteer Soldiers Historic District (Soldiers' Home Historic District)
- Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark (Soldiers' Home NHL)
- Soldiers' Home Reef National Historic Landmark
- Story Hill Residential District #1
- Story Hill Residential Districts #2 and #3

[1] *FHWA Memorandum: Historic Properties On or Eligible for the National Register within the APE for the 1-94 East-West Corridor from 16th St to 70th St* (October 8, 2013, APE map revised March 2014 to clarify historic boundaries for the Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark, and the National Register listed Historic District). APE map revised March 2014 is attached. Brief summaries describing the characteristics and significance of the historic properties were provided as part of the October 15, 2013 consultation meeting.

The purpose of the proposed project is to maintain I-94 as a key link in the local, state, and national transportation network; to address obsolete roadway design to improve safety (including replacing left-hand entrances and exits and providing proper weaving distances between exit and entrance ramps); to replace deteriorated pavement and infrastructure (bridges); and to improve capacity by accommodating current and future traffic volumes at an acceptable level of service.

Through the alternatives screening process, the following project alternatives, located within the APE, were retained for detailed study for the I-94 East-West Corridor West Segment (70th Street to Stadium Interchange):

- At-grade alternative: Add a fourth lane in each direction, split-diamond interchange at 68th/70th Streets with either no Hawley Road interchange or a half interchange at Hawley Road (entrance/exit ramps to and from the west), and narrow lanes and shoulders through the cemetery area.
- Double Deck alternative: Add a fourth lane in each direction, split diamond interchange at 68th/70th Streets, full Hawley Road interchange, and a double deck (all up or partially down) through the cemetery area.

These alternatives, along with the No-Build alternative, are evaluated in detail in the I- 94 East-West Corridor Draft EIS.

As part of the Section 106 consultation process, FHWA invited consulting parties to share their views[2] on the potential effects the proposed I-94 project may have on the historic properties located in the APE pursuant to 36 CFR 800.4(d)(2) and 36 CFR 800.5. According to 36 CFR 800.5(a)(1), "an adverse effect is found when the undertaking may alter, directly or indirectly, *any of the characteristics that qualify the property for inclusion in the National Register in a manner that would diminish the integrity* of the property's location, design, setting, materials, workmanship, feeling, or association" (emphasis added).

FHWA, in consultation with the SHPO, Advisory Council on Historic Preservation (ACHP), National Park Service (NPS) as it pertains to NHLs, the Department of Veterans Affairs (VA), and other consulting parties, has applied the criteria of adverse effect, considered the views of consulting parties identified in *I-94 East-West Corridor Study Potential Effects on Historic Resources* (February 26, 2014), and determined that the proposed project, regardless of the alternative selected, would have No Adverse Effect on the following properties:

- Soldiers' Home Reef National Historic Landmark
- Story Hill Residential District #1

The project would not acquire, alter, or change the characteristics that qualify the properties for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

The proposed project would have No Adverse Effect on the Soldiers' Home Reef National Historic Landmark which was listed on the National Register and designated as a landmark in 1993. The historical significance of the 400-million-year-old Silurian Period fossil reef derives from its discovery in the 1830s by Wisconsin's first scientist, Increase A. Lapham, and by James Hall who recognized and described it in 1861 as an ancient fossil reef. The reef was one of the first described reefs in North America and the world. Thomas Chamberlin used the reef and others in formulating his paleoecological and sedimentological model of reef development. The proposed project would not

[2] Consulting party views were recorded in the *I-94 East-West Corridor Study Potential Effects on Historic Resources* memo dated February 13, 2014 and in the Section 106 Consultation meeting minutes from July 15, 2013, to February 13, 2014.

acquire property or otherwise alter or change the character or setting of the historic reef in a manner that diminishes its historic integrity.

The proposed project would have No Adverse Effect on the National Register eligible Story Hill Residential District #1. The historic significance of the district is derived from its period Craftsman and Colonial Revival style homes distinguished by their stucco cladding. The Story Hill neighborhood was developed when Albert & Alice Story registered a plat in 1911. The period of significance spans 1909–1936. The proposed project would not have direct impacts on Story Hill Residential District #1 or otherwise alter or change the character or setting of district in a manner that diminishes its historic integrity.

FHWA, in consultation with the SHPO, ACHP, NPS, the VA, and other consulting parties, has applied the criteria of adverse effect, considered the views of consulting parties and determined that the At-grade alternative would have No Adverse Effect and the Double Deck alternative would have a potential Adverse Effect on the following properties:

- Calvary Cemetery
- Story Hill Residential Districts #2 and #3

The historical significance of Calvary Cemetery is derived from its function as the final resting place of a number of influential individuals who made outstanding contributions to the history of Milwaukee and for embodying the "high style" qualities of Late Victorian and Classical Revival architecture. The period of significance is from 1857 to about 1922.

The At-grade alternative would not require acquisition of any Calvary Cemetery property. The noise levels would remain roughly the same as existing conditions. The roadway under this alternative would be slightly elevated (up to 3-5 feet) compared to the existing interstate, but the viewshed from the cemetery would have only minor modifications. The At-grade alternative would not alter or change the character of the property in a manner that diminishes the historic integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The At-grade alternative would have No Adverse Effect on Calvary Cemetery.

The Double Deck alternative could have an Adverse Effect on the National Register-eligible Calvary Cemetery. There would be no direct impacts to the property from the project, and no cemetery property would be acquired. However, there could be indirect impacts to the cemetery from the visual impacts of an elevated interstate. The integrity of location, design, materials, and association would not be altered or diminished by the project. The location of the cemetery would remain intact; the design and materials of the landscape and the architecture would be retained; and the cemetery would continue to be associated with the influential Milwaukee individuals. However, the visual impacts could diminish the integrity of setting and feeling. The viewshed of Calvary Cemetery includes the interstate, but under the Double Deck alternative, the view from the cemetery would be altered and obstructed by the new elevated roadway, which would be 25 to 30 feet taller than the existing roadway.

In summary, the At-grade alternative would have No Adverse Effect on Calvary Cemetery. The Double Deck alternative would have a potential Adverse Effect on Calvary Cemetery due to the visual impacts that could diminish the integrity of setting and feeling of the property.

The period of significance for the National Register-eligible Story Hill Residential Districts #2 and #3 spans from 1924–1963, with much of the construction occurring in the 1920s. The historic significance of the district is derived from its Period Revival styles, which are well represented in the form of Period Colonial Revival, Tudor Revival, and Mediterranean Revival styles and features examples of several well-regarded Milwaukee architects and builders, including Hugo C. Haeuser, Roy J. Jacobs, and the firm of George Schley & Sons. Of the 153 properties within the district, only three are considered noncontributing. Some of the contributing properties on the southeastern side of the

Story Hill Residential Districts #2 and #3 currently have views of the existing, highly urban I-94 corridor, the Stadium Interchange with elevated ramps, and the associated transportation infrastructure. Residents of the district have noise concerns because of the freeway and nearby Miller Park, home of the Milwaukee Brewers. These properties have coexisted with the I-94 corridor for more than 50 years, since the freeway opened in 1963.

As part of the alternative development process, FHWA and WisDOT are carrying forward alternatives within the view from Story Hill Residential Districts #2 and #3 that hold the northern freeway right-of-way line at its existing location, maintain I-94 westbound travel lanes and shoulder in their existing location, maintain the vegetative screening near Story Parkway, and move all proposed freeway improvements farther away. (The proposed Stadium Interchange flyover ramp would be roughly 1,300 feet away from the district.)

The At-grade alternative would not require acquisition of any property in Story Hill Residential Districts #2 and #3. Under the At-grade alternative, the freeway would be about the same elevation it is today adjacent to the historic district. Existing views towards I-94 and beyond would essentially remain the same. Noise levels from the At-grade alternative, if selected, are expected to result in a 1-2 decibel increase within the district, according to the noise analysis conducted as part of the EIS. Although an increase of less than 3 decibels is generally imperceptible to the human ear, the existing noise levels in the district are high enough that a noise wall is reasonable and feasible at that location under WisDOT policy. FHWA has determined that the increase in noise levels within the historic district would not be an adverse effect under Section 106. If a noise wall were installed to mitigate current or future noise levels, the wall itself may constitute an adverse effect on the district because of visual obstruction of the viewshed from the historic district properties.

The At-grade alternative would not alter or change the character of the property in a manner that diminishes the historic integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The At-grade alternative would have No Adverse Effect on Story Hill Residential Districts #2 and #3.

Noise levels from the Double Deck alternative, if selected, are expected to result in a 0 to 6 decibel increase within the district, according to the noise analysis conducted as part of the EIS. As previously noted, the existing noise levels in the district are high enough that a noise wall is reasonable and feasible at that location under WisDOT policy. FHWA has determined that the increase in noise levels within the historic district would not be an adverse effect under Section 106. If a noise wall were installed to mitigate current or future noise levels, the wall itself may constitute an adverse effect on the district because of visual obstruction of the viewshed from the historic district properties.

The Double Deck alternative would not require acquisition of any property in Story Hill Residential Districts #2 and #3. The Double Deck alternative would raise the freeway 14-feet (Partially Down option) to 20-feet (All Up option) at the west end of the district. Under the At-grade and the Double Deck alternatives an eastbound exit ramp from I-94 to US 41/Miller Park Way at the Stadium Interchange would add additional roadway infrastructure that would be roughly 30 feet higher than the existing interchange. This ramp would be roughly 1,300 feet from the district boundary. Under the Double Deck alternative, the new exit ramp and the elevated double deck structures through the cemetery area would be visible from parts of the historic district. The visual impacts of the Double Deck alternative (All Up or Partially Down options) to the district could diminish the integrity of setting and feeling of the historic property. There would be no direct impacts to the district, so it would retain integrity of design, materials, workmanship, and association.

In conclusion, the Double Deck alternative would have a potential Adverse Effect to Story Hill Residential Districts #2 and #3. The visual changes to the district could alter or change the setting and feeling of the district in a manner that could diminish its historic integrity. The At-grade alternative would have No Adverse Effect on the Story Hill Residential Districts #2 and #3.

FHWA, in consultation with the SHPO, ACHP, NPS, the VA, and other consulting parties, has applied the criteria of adverse effect, considered the views of consulting parties identified in the February 13, 2014 *I-94 East-West Corridor Study Potential Effects on Historic Resources* document, and determined that the At-grade alternative could be designed to have to have a No Adverse Effect and the Double Deck alternative would have an Adverse Effect on the following properties:

- Northwestern Branch, National Home for Disabled Volunteer Soldiers Historic District
- Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark

The Soldiers' Home NHL and Soldiers' Home Historic District are essentially the same historic property with some slight differences between the historical boundaries and periods of historic significance. The attached exhibit shows the boundaries of the NHL and Historic District. The period of significance for the Soldiers' Home NHL is 1866-1930 and 1867-1955 for the Soldiers' Home Historic District. The National Asylum for Disabled Soldiers, as it was originally named, was established in 1865. The Milwaukee Soldiers' Home campus is the only one of the three original Soldiers' Home sites to have its majestic Soldiers' Home intact, and it is also the only one with the majority of its surrounding recuperative village remaining. The Soldiers' Home NHL houses 25 post-Civil War and turn-of-the-20th-century buildings, as well as the oldest two-thirds of Wood National Cemetery. The most historically significant and architecturally dominant building is the site's namesake, the Soldiers' Home (Building 2), or "Old Main."

The cemetery was established in 1871 as the Soldiers' Home Cemetery, on the grounds of the National Asylum for Disabled Soldiers, to inter the remains of soldiers who died while in the care of the Soldiers' hospital. The cemetery was renamed Wood Cemetery in 1937 in honor of General George Wood. It became a National Cemetery in 1973 and is the only National Cemetery in Wisconsin. Veterans of conflicts ranging from the war of 1812 to the Iraq war are buried in the cemetery.

Potential adverse effects to the Soldiers' Home Historic District and the Soldiers' Home NHL under the Double Deck alternative include the visual effects of constructing a 25- to 30-foot elevated structure to carry I-94 traffic, currently at-grade, between the north and south sides of the Soldiers' Home Historic District and the Soldiers' Home NHL, and the direct effects of converting non-transportation-related property within the Soldiers' Home Historic District and Soldiers' Home NHL into a transportation facility (reconstruction of Zablocki Drive) for the VA.

If the Double Deck alternative is identified as the preferred alternative in the Final EIS and selected for implementation in the Record of Decision,[3] it would require further consultation with the consulting parties to identify specific measures to avoid and or minimize harm to the historic properties. Agreed upon measures would be stipulated in a Memorandum of Agreement and incorporated into the project implementation as commitments identified in the ROD. As part of the alternative development process, FHWA and WisDOT determined that project alternatives along I-94 from Hawley Road to Mitchell Boulevard would be constrained to the existing transportation right-of-way and that all graves would remain in place to avoid and minimize adverse effects to the Soldiers' Home Historic District and the Soldiers' Home NHL. Additional mitigation efforts could include the restoration of property previously functioning as a transportation facility into a more naturalized landscape, and provide openings in the elevated structure to allow for visual connections across I-94 between the north and south sides of the Soldiers' Home Historic District and Soldiers' Home NHL. Should the Double Deck alternative be selected, FHWA looks forward to additional consultation on

[3] FHWA and WisDOT will identify a preferred alternative after the public hearing and comment period for the Draft EIS. The preferred alternative will be described in the Final EIS. FHWA officially selects an alternative to implement the proposed project as part of the Record of Decision.

ways to further avoid, minimize, and mitigate adverse effects to the Soldiers' Home Historic District and the Soldiers' Home NHL.

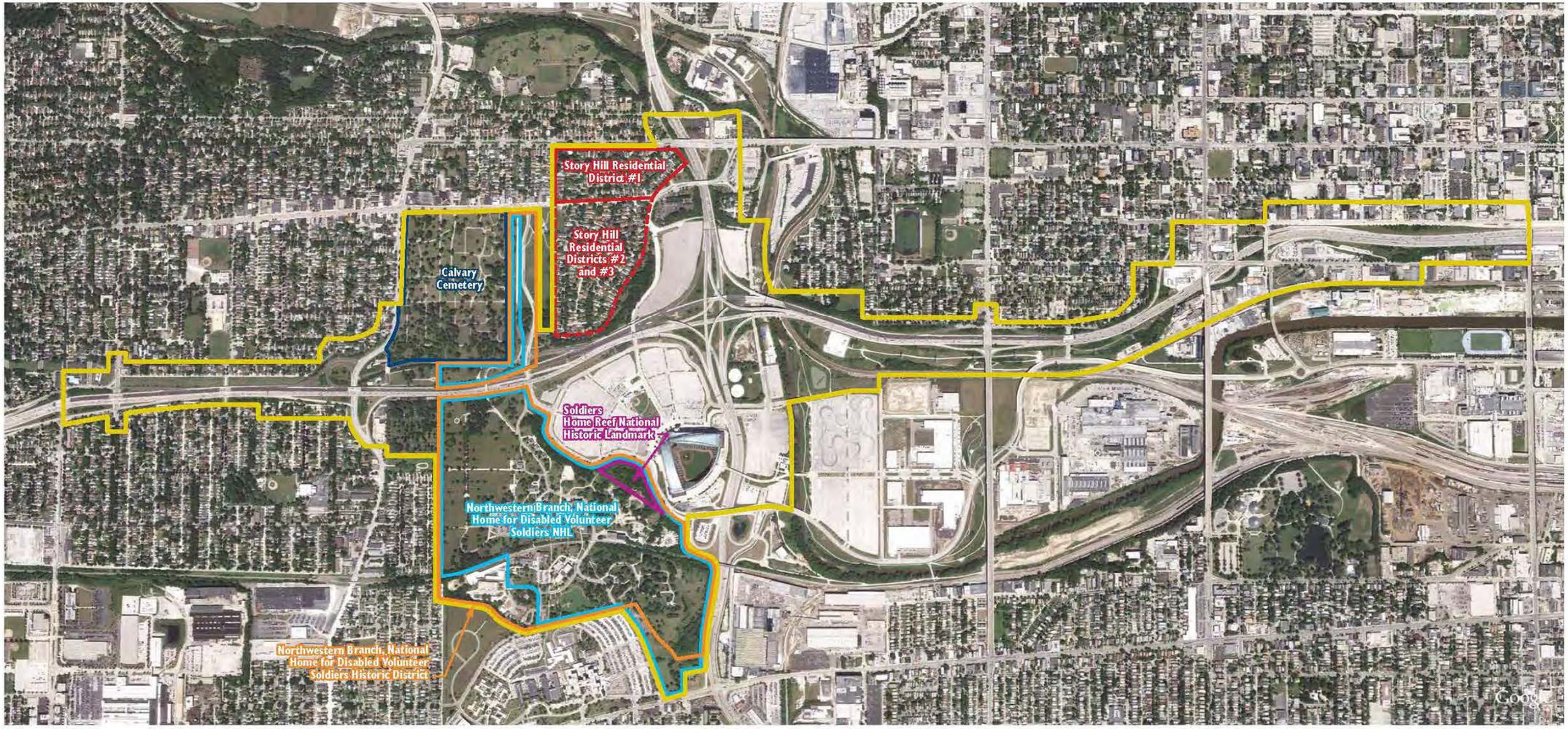
At the January 10, 2014 consultation meeting, the SHPO, NPS, ACHP, and other consulting parties generally agreed that the At-grade alternative could be designed to have no adverse effect to the Soldiers' Home Historic District and the Soldiers' Home NHL. FHWA has determined that the At-grade alternative, pending further engineering and design, would result in a conditional No Adverse Effect to the Soldiers' Home Historic District and the Soldiers' Home NHL. Should the At-grade alternative be selected, FHWA looks forward to continued consultation in the project design phase to ensure that an adverse effect is not created.

In summary, FHWA has determined that the Double Deck alternative would result in an Adverse Effect to the Soldiers' Home Historic District and the Soldiers' Home NHL. Direct adverse effects may be minimized by not acquiring property from the historic sites, not widening I-94 into the Soldiers' Home Historic District and the Soldiers' Home NHL, and not relocating graves. FHWA would continue consultation pursuant to 36 CFR 800.6 to look for opportunities to avoid, minimize, or mitigate adverse effects on the Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark and the Northwestern Branch, National Home for Disabled Volunteer Soldiers Historic District as well as on Calvary Cemetery and Story Hill Residential Districts #2 and #3. In addition, FHWA and WisDOT will gather the documentation for consultation materials (as described at 36 CFR 800.11(e)) used as part of the consultation process and prepare a report for consulting parties for further review and comment at a future consultation meeting.

FHWA looks forward to the consultation meeting October 16, 2014, and continued discussion on opportunities to minimize any impacts through avoidance, minimization, and mitigation. Please do not hesitate to contact me at bethaney.bacher-gresock@dot.gov or 608-662-2119 if I can be of additional assistance.

Enclosure

cc: Section 106 Consulting Parties



LEGEND

North

- Area of Potential Effect
- Northwestern Branch, National Home for Disabled Volunteer Soldiers National Historic Landmark
- Story Hill Residential District #1
- Story Hill Residential Districts #2 and 3
- Soldiers Home Reef National Historic Landmark
- Calvary Cemetery
- Northwestern Branch, National Home for Disabled Volunteer Soldiers Historic District

U.S. Department of Transportation
Federal Highway Administration

Historic Properties Located in the Area of Potential Effect (March 2014)

TBG0507122018MKE Historic_Properties_Located-in-Area_Potential_Effect_v5 4.15.14 mjl

Addendum to 2013 WisDOT/DNR White Paper on PM2.5 June 15, 2015

In 2013 WisDOT and Wisconsin DNR jointly developed a document entitled *Fine Particulate Matter Hot-Spot Analysis Requirements for the I-94 Project* (August 5, 2013). This "white paper" was provided to the Interagency Work Group (IWG) as a basis for the two agencies position that the I-94 East-West corridor study is not a project of local air quality concern. The IWG subsequently made a preliminary determination that the project is not a project of local air quality concern.

WisDOT and FHWA selected a preferred alternative for the project in February 2015. Subsequently WisDOT reinitiated coordination with the IWG to get a final determination on this issue from the IWG. On April 9, 2015 WisDOT's I-94 East-West study team presented an overview of the preferred alternative to the IWG. The purpose of this memo is to document information presented to the IWG at the April 9 meeting and to provide information requested by the IWG.

Change in Project Limits and Summary of Preferred Alternative

The study limits changed from 25th Street to 16th Street in June 2013 after the IWG's preliminary determination. The study limit was extended to the east to accommodate alternatives that would tie back into I-94 near 16th Street, rather than 25th Street. The limits were extended because WisDOT and FWHA were considering an alternative, the Off-alignment alternative, what would have tied back into the existing alignment east of 25th Street. The preferred alternative, the On-alignment alternative would also tie back into the existing I-94 alignment just east of 25th Street.

The preferred alternative selected by WisDOT is the At-grade alternative on the west segment and the On-alignment alternative on the east segment (see attached exhibit). The preferred alternative will increase capacity throughout the length of the project from 3 lanes in each direction to 4 lanes. Access will remain the same with one exception: the Hawley Road interchange will be converted from a full interchange to a half interchange. Another interchange—the Mitchell Boulevard interchange—will be moved about a ½ mile east to be located under the reconstructed Stadium Interchange. In all, no new access points will be added.

The half interchange at Hawley Road will provide freeway access to and from the west. There will be no freeway access to and from the east because of the close proximity of several cemeteries to I-94 just east of Hawley Road. This will change some driving patterns. In response to concerns by the City of West Allis about increased travel times for drivers to access I-94 eastbound from Hawley Road and vice versa, WisDOT committed to constructing a local road, Washington Street, for approximately 6 blocks between 70th Street and Hawley Road/60th Street. Washington Street is an existing east-west street that currently ends at about 66th Street. West Allis's comprehensive plan already includes the Washington Street extension.

The preferred alternative would essentially remain along the existing I-94 alignment. On the east segment, the reconstructed I-94 centerline would be up to about 50 feet south of its current centerline for a short segment through a curve near 25th Street). Three local street intersections (National Avenue/Miller Park Way; National Avenue/Greenfield Avenue; and Greenfield Avenue/70th Street) will also see improvements like traffic signal improvements and re-striping as a result of modest increases in traffic volumes anticipated as a result of the access change at the Hawley Road interchange. With signal

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improvements and improved lane channelization these intersections will operate at an acceptable level of service.

DNR, USEPA and the Corps of Engineers concurred with the preferred alternative in March 2015.

Traffic Data

The average annual daily traffic (AADT) forecast remains the same as the 2013 white paper. Tables entitled *2025 Traffic Projections* and *2040 Traffic Projections* presented on page 3 and 4 in the August 2013 white paper remain valid.

The truck percentages remain the same (6.7 % on west leg and 3.7 % on east leg) as the 2013 white paper.

Projected 2025 and 2040 I-94 Project Traffic Information

Metric	70th Street to Stadium Interchange Segment (i.e., "West Segment")	Stadium Interchange to 25th Street Segment (i.e., "East Segment")
Average Annual Daily Traffic (AADT)	147,700	150,400
Percentage Diesel Trucks	6.7%	3.7%
Level of Service (LOS)	E – F	E – F

2025 Traffic Projections -

Future Year Scenario	Metric	70th St. to Stadium Interchange Segment (i.e., "West Segment")	Stadium Interchange to 25th St. Segment (i.e., "East Segment")
2025 No-Build Scenario (See Appendix C)	Projected AADT	159,700	165,350
	Projected Percentage Diesel Trucks	6.7%	3.7%
	Projected Number of Diesel Trucks	10,700	6,118
	Level of Service (LOS)	E – F	E – F
2025 Build Scenario (See Appendix C)	Projected AADT	174,800	177,600
	Projected Percentage Diesel Trucks	6.7%	3.7%
	Projected Number of Diesel Trucks	11,712	6,571
	Level of Service (LOS)	D or better	D or better
Comparison Between No-Build and Build Scenarios	Projected AADT Increase	15,100	12,250
	Projected Increase of Diesel Trucks	1,012	453
	Projected Percentage Increase of Diesel Trucks	9.5%	7.4%

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2040 Traffic Projections -

Future Year Scenario	Metric	70th St. to Stadium Interchange (i.e., "West Segment")	Stadium Interchange to 25th St. (i.e., "East Segment")
2040 No-Build Scenario (See Appendix C)	Projected AADT	166,400	172,000
	Projected Percentage Diesel Trucks	6.7%	3.7%
	Projected Number of Diesel Trucks	11,149	6,364
	Level of Service (LOS)	E – F	E – F
2040 Build Scenario (See Appendix C)	Projected AADT	186,900	193,500
	Projected Percentage Diesel Trucks	6.7%	3.7%
	Projected Number of Diesel Trucks	12,522	7,159
	Level of Service (LOS)	D or better	D or better
Comparison Between No-Build and Build Scenarios	Projected AADT Increase	20,500	21,500
	Projected Increase of Diesel Trucks	1,373	795
	Projected Percentage Increase of Diesel Trucks	12.3%	12.5%

Summary

The project and associated traffic data have not changed substantially from what was presented in the 2013 white paper. The proposed I-94 project will not result in a significant increase in diesel vehicles, and is therefore not considered a project of local air quality concern per 40 CFR 93.123(b).

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KAPUR & ASSOCIATES, INC.
CONSULTING ENGINEERS

August 14, 2015

Ms. Dobra Payant
Wisconsin Department of Transportation
141 NW Barstow Street
Waukesha, Wisconsin 53187

RE: Addendum 1: Hazardous Material Site Recommendations-Preferred Alternative.
Preliminary Phase 1 Hazardous Material Assessment,
IH 94 East/West & Stadium Interchange
WisDOT ID: 1060-27-00
June 2014

Dear Ms. Payant,

Based on the selection of the Preferred Alternative, the tentative recommendations listed within the Preliminary Phase 1 Hazardous Material Assessment IH 94 East/West & Stadium Interchange dated June 2014, have been reviewed and updated. The Phase 1 included recommendations for two (2) alternatives. The alternatives were as follows:

Alternative 1: At-Grade (West/Cemetery), Modified Single Point Interchange (Stadium), and On-Alignment (East)
Alternative 2: Double Deck (all up or partial down) (West/Cemetery), Modified Single Point Interchange (Stadium), and Off-Alignment (East)

The description of the Preferred Alternative is provided below.

Preferred Alternative Description – At Grade (West) and On-Alignment (East)

West Segment: In the west segment (70th Street to Yount Drive, just west of the Stadium Interchange), the At grade alternative would reconstruct IH 94 to 8 travel lanes (4 in each direction) at essentially the same elevation as the existing freeway. To avoid encroachment on the cemeteries, the reconstructed IH 94 would have less than 12-foot driving lanes and narrow shoulders in the approximate 2,000-foot segment between the adjacent cemeteries (Hawley Road to Zablocki Drive). East and west of the cemeteries, the freeway would have standard 12-foot lanes and 12-foot shoulders.

The At-grade alternative would include an interchange at 68th/70th Streets and a half interchange at Hawley Road. The half interchange would have an entrance ramp to westbound IH 94 and an exit ramp from eastbound IH 94 to Hawley Road. There would be no westbound exit ramp or eastbound entrance ramp as part of the half interchange at Hawley Road option.

The existing interchange at Mitchell Boulevard would be removed and replaced with a new local road interchange at the Stadium Interchange.

Zablocki Drive would remain at its present location, and its bridge over IH 94 would be replaced and raised, requiring reconstruction of short segments of Zablocki Drive on each side of the new bridge (about 340-feet north of IH 94 and 210-feet south of IH 94).

For the At-grade alternative, there would be two (2) business and five (5) residential displacements for the half interchange at Hawley Road.

East Segment: The east segment of the study area is from Yount Drive, just west of the Stadium Interchange, to 16th Street. This segment includes the existing 35th Street and 25th/26th/28th Street service interchanges and the Stadium Interchange.

Under the On-alignment alternative, the Stadium Interchange would be reconstructed as a hybrid between a service interchange and a system interchange. The highest point of the new Stadium Interchange would be about 25 feet higher than the existing interchange.

The ramps from southbound USH 41 to eastbound IH 94 and from northbound Miller Park Way to westbound IH 94 would be controlled by a traffic signal. The reconstructed interchange would have a smaller footprint than the existing interchange.

Underneath the Stadium Interchange, new entrance and exit ramps to 44th Street and a new local street (tentatively referred to as 46th Street) would be constructed. The ramps would replace the interchange that would be removed from Mitchell Boulevard. This interchange would connect to the existing Miller Park ring road and a new frontage road north of IH 94. The new north frontage road would pass over Yount Drive and connect to Mitchell Boulevard near the existing westbound IH 94 exit ramp at Mitchell Boulevard.

East of the Stadium Interchange, the 35th Street interchange would be reconstructed. Braided ramps would also be provided between the 35th and 27th Street interchanges. East of the 35th Street interchange, IH 94 would remain close to its current alignment and be widened to the south. The centerline of reconstructed IH 94 would be about 50 feet south of the existing freeway centerline. The entrance and exit ramps near 27th Street would remain where they are today at 25th, 26th, and 28th Streets, and St. Paul Avenue.

This would result in four (4) commercial displacements at or near the 27th Street/St. Paul Intersection and three (3) business displacements south of the freeway.

In all, (8) eight commercial properties in the east segment would be acquired as part of the On-alignment alternative, including some properties located south of I-94. Two (2) additional vacant commercial buildings/parcel would also be acquired. Additionally, three (3) residences along 35th Street would be displaced.

Phase 1 Recommendations

Considering the historical land use, close proximity with the proposed area of improvements and/or construction, a review of Wisconsin Department of Natural Resources (WDNR) Case Files indicating the presence (or potential for presence) of contamination in soil and/or groundwater within the project area, and site reconnaissance, Table 1 summarizes the recommendations for properties with potential hazardous material concerns for the IH 94 project corridor. All changes made in this addendum from the Phase 1 report are crossed out and identified in red text. A brief summary of changes made is provided following the table.

At this time, proposed storm water facilities have not been finalized, potential hazardous material site locations within the area of the proposed storm water facilities will be addressed in an addendum once construction and property acquisition requirements have been finalized.

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
1	1231 N 46TH STREET 1231 N 46TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
2	4624 W JUNEAU AVENUE 4624 W JUNEAU AVENUE, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
3	MILWAUKEE STOVE AND FURNACE 5070 W STATE STREET, MILWAUKEE, WI	LUST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
4	1169 N 50TH PLACE 1169 N 50TH PLACE, MILWAUKEE, WI 53208	FINDS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
5	5050 W STATE STREET 5050 W STATE STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
6	STATE AUTO BODY 5000 W STATE STREET, MILWAUKEE, WI 53208	CESQG, FINDS, MANIFEST, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
7	1140 N 50TH STREET 1140 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
8	BRAKE, CLUTCH AND DRUM SERVICE 4934 W STATE STREET, MILWAUKEE, WI 53208	CESQG, FINDS, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

[1] Alternative 1 is At-Grade/On-Alignment.
[2] Alternative 2 is Double Deck/Off-Alignment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
9	WISDOT ALOIS STREET FACILITY 1150 N ALOIS STREET, MILWAUKEE, WI 53208	AST, BRRTS, FINDS, LUST, NONGEN, SHWIMS, UST, WDS, WRRSER,	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
10	1165 N 45TH STREET SPILL 1165 N 45TH STREET, MILWAUKEE, WI 53208	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
11	1150 N 46TH STREET 1150 N 46TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
12	1138 N 45TH STREET 1138 N 45TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
13	MILLER BREWERIES EAST 4430 W STATE STREET, MILWAUKEE, WI 53208	AUL, CRS, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
14	QUAD MED MILLER HEALTH AND FITNESS CENTER 4400 W STATE STREET, MILWAUKEE, WI 53208	SHWIMS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
15	50TH STREET AND STATE STREET SPILL 50TH STREET AND STATE STREET	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
16	46TH AND STATE STREET SPILL 46TH AND STATE STREET	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
17	MILLER BREWING COMPANY VISITOR CENTER 4315 W STATE STREET, MILWAUKEE, WI	AUL, ERP, WDS, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
18	MGIC 5151 W STATE STREET, MILWAUKEE, WI	LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
19	ACME SUPPLY 5101 W STATE STREET, MILWAUKEE, WI	AUL, ERP	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
20	FORMER CLIMATIC CONTROL COMPANY 5061 W STATE STREET, MILWAUKEE, WI 53208	AST, AUL, CRS, LAST, LUST,	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
21	GENUINE PARTS COMPANY / NAPA DISTRIBUTION CENTER 5001 W STATE STREET, MILWAUKEE, WI 53208	CESQG, FINDS, MANIFEST, SHWIMS, TIER 2	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
22	MAGNUS COMPANY INC / AD SCHINNER COMPANY 4901 W STATE STREET, MILWAUKEE, WI 53208	BRRTS, CERCLIS-NFRAP, FINDS, LUST, SHWIMS, UST, WDS, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
23	FORMER VICTORY GRAPHICS 4831 W STATE STREET, MILWAUKEE, WI 53208	CESQG, FINDS, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
24	MMSD FORMER SAILES PROPERTY 4601 W STATE STREET, MILWAUKEE, WI 53208	ERP	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
25	BADGER ALLOYS / OMCO USA INC 980 N 45TH STREET, MILWAUKEE, WI 53208	CESQG, FINDS, NONGEN, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
26	FORMER WR GRACE COMPANY 4301 W STERLING PLACE, MILWAUKEE, WI 53208	AUL, CRS, ERP, LUST, VPLE, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
27	FORMER WR GRACE COMPANY 900 N 43RD STREET, MILWAUKEE, WI 53208	AUL, CRS, ERP, FINDS, LUST, UST, VPLE, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
28	FORMER HAROLD T ILLING 4200 W MONARCH PLACE, MILWAUKEE, WI 53208	AUL, CRS, ERP, FINDS, NONGEN, SHWIMS, SPILLS,	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
29	FORMER 42ND STREET CORPORATION 753 N 42ND STREET, MILWAUKEE, WI	AST, ERP, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
30	FORMER CENTRAL REDI-MIX 5013 W STATE STREET, MILWAUKEE, WI 53208	BRRTS, ERP, LUST, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
31	MILWAUKEE COUNTY HAWLEY ROAD LANDFILL #426 / DOYNE PARK 942 N HAWLEY ROAD, MILWAUKEE, WI	ERP, LUST, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
32	5040 W WELLS STREET 5040 W WELLS STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
33	NORMS 49TH STREET AUTO BODY 817 N 49TH STREET, MILWAUKEE, WI 53208	CESQG, FINDS, MANIFEST, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
34	SORCE SERVICES LLC 999 N 46TH STREET, MILWAUKEE, WI 53208	SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
35	FORMER XEROX CORPORATION 944 N 46TH STREET, MILWAUKEE, WI 53208	AST, BRRTS, ERP, FINDS, LUST, TIER 2, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
36	4552 W WELLS STREET 4552 W WELLS STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
37	726 N 49TH STREET 726 N 49TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
38	5018 W WISCONSIN AVENUE 5018 W WISCONSIN AVENUE, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
39	4910 W WISCONSIN AVENUE 4910 W WISCONSIN AVENUE, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
40	FORMER ELLER MEDIA COMPANY 4550 W WISCONSIN AVENUE, MILWAUKEE, WI 53208	BRRTS, FINDS, NONGEN, SHWIMS, UST,	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
41	FORMER CANTEEN CORPORATION 4422, 4500 W WISCONSIN AVENUE, MILWAUKEE, WI 53208	AUL, CRS, CESQG, FINDS, LUST, NONGEN, SHWIMS, SPILLS, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
42	WISCONSIN AVENUE VIADUCT – PARCEL 7 WISDOT W WISCONSIN AVENUE AT 42ND STREET MILWAUKEE, WI	AUL, ERP	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
43	4821 W WISCONSIN AVENUE 4821 W WISCONSIN AVENUE, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
44	4924 W WOODLAWN COURT 4924 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
45	4918 W WOODLAWN COURT 4918 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
46	4908 W WOODLAWN COURT 4908 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
47	4904 W WOODLAWN COURT 4904 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
48	4828 W WOODLAWN COURT 4828 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
49	4744 W WOODLAWN COURT 4744 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
50	4734 W WOODLAWN COURT 4734 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
51	4927 W WOODLAWN COURT 4927 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
52	4907 W WOODLAWN COURT 4907 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
53	4841 W WOODLAWN COURT 4841 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
54	4827 W WOODLAWN COURT 4827 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
55	4807 W WOODLAWN COURT 4807 W WOODLAWN COURT, MILWAUKEE, WI 53208	LEAD, UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
56	4727 W WOODLAWN COURT 4727 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
57	4723 W WOODLAWN COURT 4723 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
58	4707 W WOODLAWN COURT 4707 W WOODLAWN COURT, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
59	4816 W BLUEMOUND ROAD 4816 W BLUEMOUND ROAD, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
60	4804 W BLUEMOUND ROAD 4804 W BLUEMOUND ROAD, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
61	4702 W BLUEMOUND ROAD 4702 W BLUEMOUND ROAD, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
62	543 N STORY PARKWAY 543 N STORY PARKWAY, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
63	MILWAUKEE MACK SALES INC 4444 W BLUEMOUND ROAD, MILWAUKEE, WI 53208	AST, CESQG, FINDS, LUST, MANIFEST, SHWIMS, TIER 2, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
64	534 N 44TH STREET SPILL 534 N 44TH STREET, MILWAUKEE, WI 53208	BRRTS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
65	4901 W BLUEMOUND ROAD 4901 W BLUEMOUND ROAD, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
66	486 N 49TH STREET 486 N 49TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
67	471 N 49TH STREET 471 N 49TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
68	459 N 49TH STREET 459 N 49TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
69	442 N 49TH STREET 442 N 49TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
70	436 N 49TH STREET 436 N 49TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
71	410 N 49TH STREET 410 N 49TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
72	418 N 50TH STREET 418 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
73	414 N 50TH STREET 414 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
74	439 N PINECREST STREET 439 N PINECREST STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
75	361 N PINECREST STREET 361 N PINECREST STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
76	438 N PINECREST STREET 438 N PINECREST STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
77	MENOMONEE RIVER STADIUM PROJECT IH 94 AND USH 41 MILWAUKEE, WI	ERP	Partial Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
78	365 N 50TH STREET 365 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
79	357 N 50TH STREET 357 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
80	339 N 50TH STREET 339 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
81	317 N 50TH STREET 317 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
82	311 N 50TH STREET 311 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
83	263 N 50TH STREET 263 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
84	246 N 50TH STREET 246 N 50TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
85	4923 W SUNNYSIDE DRIVE 4923 W SUNNYSIDE DRIVE, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
86	FORMER DRICKEN PROPERTY 4837 SUNNYSIDE DRIVE, MILWAUKEE, WI 53208	LUST, UST, WRRSER	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
87	4829 W SUNNYSIDE DRIVE 4829 W SUNNYSIDE DRIVE, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
88	4819 W SUNNYSIDE DRIVE 4819 W SUNNYSIDE DRIVE, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
89	303 N PINECREST STREET 303 N PINECREST STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
90	246 N PINECREST STREET 246 N PINECREST STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
91	240 N PINECREST STREET 240 N PINECREST STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
92	228 N PINECREST STREET 228 N PINECREST STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
93	323 N STORY PARKWAY 323 N STORY PARKWAY, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
94	MMSD FIELD OFFICE 164 N 44TH STREET, MILWAUKEE, WI 53208	BRRTS, FINDS, ICIS	Partial Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
95	500 N 41ST STREET SPILL 500 N 41ST STREET, MILWAUKEE, WI	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
96	428 N 41ST STREET 428 N 41ST STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
97	N 42ND STREET AND SAINT PAUL AVENUE SPILL N 42ND STREET AND SAINT PAUL AVENUE	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
98	DOUGLAS LOSEY PROPERTY 204 S 74TH STREET, MILWAUKEE, WI	LUST	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
99	70TH STREET AND O'CONNOR STREET SPILL 70TH STREET AND O'CONNOR STREET	SPILLS	IN ROW	Anticipated	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
100	IH 94 AND 70TH STREET SPILL IH 94 AND 70TH STREET	SPILLS	IN ROW	Anticipated	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
101	DOMINICAN SISTERS OF THE PERPETUAL ROSARY 217 N 68TH STREET, MILWAUKEE, WI 53213	AUL, CRS, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
102	O'CONNOR SUBSTATION 6800 O'CONNOR STREET, MILWAUKEE, WI	BRRTS	Partial Acquisition	Anticipated	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation
103	PENN TEN CORPORATION 112 S 68TH STREET, MILWAUKEE, WI	AST, BRRTS, UST	Partial Acquisition	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation (Completed in 2014)
104	6704 W STEVENSON STREET 6704 W STEVENSON STREET, MILWAUKEE, WI 53123	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
105	N 67TH STREET AND FAIRVIEW AVENUE SPILL N 67TH STREET AND FAIRVIEW AVENUE	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
106	FAIRVIEW EVANGELICAL LUTHERAN SCHOOL 137 N 66TH STREET, MILWAUKEE, WI 53213	FINDS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
107	6415 W MOUNT VERNON AVENUE 6415 W MOUNT VERNON AVENUE, MILWAUKEE, WI 53208	UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
108	FORMER FAIRVIEW MAUSOLEUM 6316 W FAIRVIEW AVENUE, MILWAUKEE, WI 53213	FINANCIAL ASSURANCE, FINDS, NONGEN, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
109	FORMER REID CONTRACTING INC 205 N 63RD STREET, MILWAUKEE, WI 53213	SHWIMS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
110	6221 W FAIRVIEW AVENUE 6221 W FAIRVIEW AVENUE, MILWAUKEE, WI 53213	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
111	224 N 61ST STREET 224 N 61ST STREET, MILWAUKEE, WI 53213	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
112	MPS FACILITIES AND MAINTENANCE 3841 W SAINT PAUL AVENUE, MILWAUKEE, WI 53208	FINDS, NONGEN, SHWIMS	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
113	3844 W PARK HILL AVENUE 3844 W PARK HILL AVENUE, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
114	315 N 37TH STREET 315 N 37TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
115	239 N 37TH STREET – ABANDONED CONTAINER 239 N 37TH STREET, MILWAUKEE, WI 53208	BRRTS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
116	225-227 N 36TH STREET 225-227 N 36TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
117	211 N 36TH STREET 211 N 36TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
118	222 N 36TH STREET 222 N 36TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
119	RP MOTORS INC 305 N 35TH STREET, MILWAUKEE, WI 53208	FINDS, ICIS	NONE	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation
120	FORMER VICTORY OPTICIANS INC 215 N 35TH STREET, MILWAUKEE, WI 53208	CESQG, FINDS, SHWIMS	Site Acquisition	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation
121	35TH STREET AND SAINT PAUL AVENUE SPILL 35TH STREET AND SAINT PAUL AVENUE MILWAUKEE, WI	SPILLS	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
122	418-420 N 35TH STREET 418-420 N 35TH STREET, MILWAUKEE, WI 53208	LEAD, UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
123	SUPER AMERICA #4080 / SPEEDWAY 4080 302 N 35TH STREET, MILWAUKEE, WI 53208	AUL, CESQG, CRS, FINANCIAL ASSURANCE, FINDS, LUST, SHWIMS, UST, WRRSER	NONE	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
124	MER-CAR CORPORATION INC / CITY OF MILWAUKEE 234 N 35TH STREET, MILWAUKEE, WI 53208	CESQG, FINDS, LUST, SHWIMS, UST, WRRSER,	Partial Acquisition – ALT 2 Only	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
125	AMOCO OIL CO 15228 / KAMRAN AMOCO 200 N 35TH STREET, MILWAUKEE, WI 53208	AUL, CRS, FINANCIAL ASSURANCE, FINDS, LUST, NONGEN, SHWIMS, UST, WRRSER	NONE	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
126	406 N 34TH STREET 406 N 34TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
127	302-304 N 34TH STREET 302-304 N 34TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
128	228 N 34TH STREET 228 N 34TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
129	434 N 32ND STREET 434 N 32ND STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
130	3221 W SAINT PAUL AVENUE 3221 W SAINT PAUL AVENUE, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
131	420 N 32ND STREET 420 N 32ND STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
132	MERRILL PARK HOUSING DEVELOPMENT 222 N 33RD STREET, MILWAUKEE, WI 53208	CESQG, FINDS, LUST, SHWIMS, UST	NONE	Anticipated – ALT 2 Only	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
133	3117-3119 W SAINT PAUL AVENUE, 3117-3119 W SAINT PAUL AVENUE, MILWAUKEE, WI 53208	LEAD, UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
134	437 N 31ST STREET 437 N 31ST STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
135	SAINT ROSE CATHOLIC ACADEMY 514 N 31ST STREET, MILWAUKEE, WI	LUST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
136	413-415 N 30TH STREET 413-415 N 30TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
137	3006 W SAINT PAUL AVENUE 3006 W SAINT PAUL AVENUE, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
138	432 N 30TH STREET 432 N 30TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
139	CITY OF MILWAUKEE ENGINE HOUSE 424 N 30TH STREET, MILWAUKEE, WI 53208	LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
140	308 N 30TH STREET 308 N 30TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
141	236 N 30TH STREET 236 N 30TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
142	226 N 30TH STREET 226 N 30TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
143	313 N 29TH STREET 313 N 29TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
144	MPI PROPERTY MANAGEMENT LLC 2820-2822 W CLYBOURN STREET, MILWAUKEE, WI 53208	FINDS, FTTS, HIST FTTS, LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
145	454 N 28TH STREET SPILL 454 N 28TH STREET, MILWAUKEE, WI	ERNS, SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
146	525 N 27TH STREET SPILL 525 N 27TH STREET, MILWAUKEE, WI 53233	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
147	KENTUCKY FRIED CHICKEN 605 N 27TH STREET, MILWAUKEE, WI 53208	AUL, CRS, LUST, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
148	527 N 27TH STREET 527 N 27TH STREET, MILWAUKEE, WI 53208	EDR HISTORICAL CLEANERS, UST	NONE	~~Anticipated ALT 2 Only~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	No Further Investigation Unless Real Estate or Construction Requirements Change
149	PETERS CLEANERS AND LAUNDRY 509 N 27TH STREET, MILWAUKEE, WI 53208	CESQG, EDR HISTORICAL CLEANERS, FINDS, MANIFEST, SHWIMS	NONE	~~Anticipated ALT 2 Only~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
150	505 N 27TH STREET 505 N 27TH STREET, MILWAUKEE, WI 53208	EDR HISTORICAL AUTO STATIONS, UST	NONE	Anticipated- ~~ALT 2 Only~~	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation
151	FORMER MR PS TIRES 2705 W CLYBOURN STREET, MILWAUKEE, WI 53208	SHWIMS	Partial Acquisition	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation (Completed in 2014)
152	419 N 27TH STREET 419 N 27TH STREET, MILWAUKEE, WI 53208	UST	Site Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 3 Subsurface Investigation
153	FORMER B&C CITGO LLC 405 N 27TH STREET, MILWAUKEE, WI 53208	AST, EDR HISTORICAL AUTO STATIONS, FINANCIAL ASSURANCE, FINDS, LUST, UST	Site Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 3 Subsurface Investigation
154	28TH STREET SUBSTATION 2701 W SAINT PAUL AVENUE, MILWAUKEE, WI	AUL, ERP, FINDS, NONGEN, SHWIMS, TIER 2, UST	~~Partial Acquisition – ALT 2 Only~~ NONE	Anticipated	Phase 2.5 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 2.5 Subsurface Investigation
155	FORMER CLARK REFINING AND MARKETING 34 608 N 27TH STREET, MILWAUKEE, WI 53208	AUL, CESQG, CRS, FINDS, LUST, SHWIMS, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
156	FORMER NERO AND SON / PAUL DAMIANO PROPERTY 2634 W CLYBOURN STREET, MILWAUKEE, WI 53233	FINDS, LUST, NONGEN, SHWIMS, UST	NONE	Anticipated – ~~ALT 2 Only~~	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
157	FORMER STI PROPERTIES 2601 W CLYBOURN STREET, MILWAUKEE, WI 53233	AST, FINDS, LUST, NONGEN, SHWIMS, UST	Partial Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
158	FORMER PERLSTEIN PROPERTY 418 N 27TH STREET, MILWAUKEE, WI 53208	AUL, CRS, ERP, LUST, UST	Partial Acquisition	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
159	2620 W SAINT PAUL AVENUE 2620 W SAINT PAUL AVENUE, MILWAUKEE, WI 53208	UST	Site Acquisition – ALT 1 Only	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation (Completed in 2014)

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
160	AMERICAN RED CROSS 2600 W WISCONSIN AVENUE, MILWAUKEE, WI	AUL, CRS, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
161	533-535 N 26TH STREET 533-535 N 26TH STREET, MILWAUKEE, WI 53233	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
162	606 N 26TH STREET 606 N 26TH STREET, MILWAUKEE, WI 5328	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
163	2524 W MICHIGAN STREET 2524 W MICHIGAN STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
164	2517A W CLYBOURN 2517A W CLYBOURN, MILWAUKEE, WI 53233	UST	NONE	~~Anticipated – ALT 2 Only~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	No Further Investigation Unless Real Estate or Construction Requirements Change
165	UNION 76 / CITGO FOOD MARKET / CITGO 2502 W WISCONSIN AVENUE, MILWAUKEE, WI 53208	EDR HISTORICAL AUTO STATIONS, FINANCIAL ASSURANCE, FINDS, LUST, NONGEN, SHWIMS, SPILLS, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
166	605 N 25TH STREET 605 N 25TH STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
167	507 N 25TH STREET 507 N 25TH STREET, MILWAUKEE, WI 53233	LEAD	NONE	Anticipated – ALT 2 Only	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
168	2459 W MICHIGAN STREET 2459 W MICHIGAN STREET, MILWAUKEE, WI	UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
169	2453 W MICHIGAN STREET 2453 W MICHIGAN STREET, MILWAUKEE, WI 53208	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
170	FORMER BADGER REBUILDERS 2455 W CLYBOURN STREET, MILWAUKEE, WI 53233	FINDS, NONGEN	NONE	~~Anticipated – ALT 2 Only~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	No Further Investigation Unless Real Estate or Construction Requirements Change
171	THE RAVE 2401 W WISCONSIN AVENUE, MILWAUKEE, WI 53233	FINDS, NONGEN, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
172	FORMER BURGESS CAR AND TRUCK 2440 W CLYBOURN STREET, MILWAUKEE, WI 53233	BRRTS, CESQG, EDR HISTORICAL AUTO STATIONS, ERP, FINDS, SHWIMS, UST	NONE	~~Anticipated – ALT 2 Only~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2.5 Subsurface Investigation	No Further Investigation Unless Real Estate or Construction Requirements Change
173	FORMER PRISMA GRAPHICS INC 2422 W CLYBOURN STREET, MILWAUKEE, WI 53208	CESQG, FINDS, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
174	FORMER BOEHCK EQUIPMENT COMPANY 2404 W CLYBOURN STREET, MILWAUKEE, WI 53233	FINDS, LUST, NONGEN, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
175	SCRUB A DUB CAR WASH 2323 W WISCONSIN AVENUE, MILWAUKEE, WI	AUL, CRS, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
176	624 N 24TH STREET 624 N 24TH STREET, MILWAUKEE, WI 53208	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
177	FORMER HH WEST 2202-2302 W CLYBOURN STREET, MILWAUKEE, WI 53233	AUL, BROWNFIELDS, CRS, ERNS, ERP, FINDS, LUST, NONGEN, SHWIMS, UST, VPLE	NONE	NONE	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
178	MUELLER PROPERTY / CRAFTMASTERS CONTRACTORS 2123 W MICHIGAN STREET, MILWAUKEE, WI	ERP, FINDS, LUST, NONGEN, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
179	AMERICAN LITHO & PUBLISHING INC 530 N 22ND STREET, MILWAUKEE, WI	CESQG, FINDS, LUST, MANIFEST, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
180	AMERICAN BUILDING 2130 W CLYBOURN STREET, MILWAUKEE, WI	CESQG, FINDS, LUST, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
181	7219 W ADLER STREET SPILL 7219 W ADLER STREET, MILWAUKEE, WI	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
182	LUCKEYS TIRE & SERVICE 401 S 70TH STREET, MILWAUKEE, WI 53214	FINDS, LUST, NONGEN, SHWIMS, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
183	FORMER GUIDAS SERVICE 541 S 70TH STREET, MILWAUKEE, WI 53214	AUL, CRS, FINDS, LUST, NONGEN, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
184	230 S 66TH STREET 230 S 66TH STREET, MILWAUKEE, WI 53214	LEAD	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
185	6311 W DIXON STREET SPILL 6311 W DIXON STREET, MILWAUKEE, WI 53214	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
186	61ST STREET AND ADLER STREET SPILL 61ST STREET AND ADLER STREET	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
187	BURBANK ELEMENTARY SCHOOL 6035 W ADLER STREET, MILWAUKEE, WI 53208	BRRTS, FINDS, UST	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
188	FORMER BENTLEY WELDING SUPPLY 200 S HAWLEY ROAD, MILWAUKEE, WI 53214	CESQG, FINDS, LUST, SHWIMS, UST, WRRSER	NONE	Anticipated	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
189	MILLER PARK 1 BREWERS WAY, MILWAUKEE, WI 53214	AST, CESQG, FINANCIAL ASSURANCE, FINDS, MANIFEST, SHWIMS, SPILLS, TIER 2, UST	Partial Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
190	FORMER MILWAUKEE COUNTY STADIUM 201 S 46TH STREET, MILWAUKEE, WI	ERP, FINDS, FTTS, HIST FTTS, LUST, MANIFEST, NONGEN, SHWIMS UST	Partial Acquisition	Anticipated	See Site 189	See Site 189	See Site 189
191	WI DOT MILWAUKEE COUNTY STADIUM / IH 94 / USH 41 IH 94 & USH 41 MILWAUKEE, WI	ERP	Partial Acquisition	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
192	FORMER MENOMONEE VALLEY PUMPING STATION 127 S 44TH STREET, MILWAUKEE, WI 53208	FINDS, MANIFEST, NONGEN, SHWIMS	Partial Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
193	SOO LINE RR COMPANY STADIUM PROJECT 400 N 44TH STREET, MILWAUKEE, WI	BRRTS	Partial Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
194	FORMER MILWAUKEE ROAD RR SHOPS / MILWAUKEE SHOPS PROPERTY 400-620 S 44TH STREET, MILWAUKEE, WI 53214	BROWNFIELDS, BRRTS, FINDS, US BROWNFIELDS	Partial Acquisition – ~~ALT 2 Only~~	Anticipated	Phase 2.5 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
195	NATIONAL SALVAGE 600 S 44TH STREET, MILWAUKEE, WI 53214	ERP, FINDS, NONGEN, NPDES, SHWIMS, TIER 2,	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
196	FORMER LEWINSKY IRON AND METAL COMPANY 620 S 44TH STREET, MILWAUKEE, WI 53214	AST, BROWNFIELDS, BRRTS, ERP, FINDS, LUST, NONGEN, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
197	HARNISCHFEGER CORPORATION / P&H MINING EQUIPMENT 4400 W NATIONAL AVENUE, MILWAUKEE, WI 53204	2020 COR ACTION, AIRS, AST, CORRACTS, ERNS, ERP, FINDS, FTTS, HIST FTTS, ICIS, LQG, LUST, MANIFEST, NPDES, SHWIMS, TIER 2, TRIS, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	See TMP Phase 1 Report
198	IH 94 EASTBOUND BETWEEN STADIUM AND 35TH STREET SPILL IH 94 EASTBOUND BETWEEN STADIUM AND 35TH STREET	SPILLS	IN ROW	Anticipated	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
199	WEPCO PARK HILL SOUTHWEST SUBSTATION 4000 W CANAL STREET, MILWAUKEE, WI 53208	FINDS, NONGEN, SHWIMS	Partial Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
200	MENOMONEE VALLEY / FORMER CMC 3301 W CANAL STREET, MILWAUKEE, WI	AST, CERCLIS- NFRAP, CESQG, ERP, FINDS, MANIFEST, SHWIMS, SPILLS, US BROWNFIELDS, UST	~~NONE~~ Partial Acquisition	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 3 Subsurface Investigation
201	FORMER WI DH&SS STADIUM PROJECT AREAS B & C 554 S 44TH STREET, MILWAUKEE, WI 53208	AST, ERP	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
202	35TH STREET AND CANAL STREET SPILL 35TH STREET AND CANAL STREET	SPILLS	IN ROW	Anticipated	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
203	PALERMO VILLA INC 3301 W CANAL STREET, MILWAUKEE, WI 53208	BRRTS, FINDS, TIER 2	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
204	RR TRACKS AT CANAL AND 30TH STREET SPILL RR TRACKS AT CANAL AND 30TH STREET MILWAUKEE, WI	SPILLS	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
205	REXNORD INDUSTRIES LLC 3001 W CANAL STREET, MILWAUKEE, WI	2020 COR ACTION, AIRS, AST, AUL, BRRTS, CERCLIS-NFRAP, CORRACTS, CRS, ERNS, ERP, FINDS, MANIFEST, NPDES, SHWIMS, SPILLS, SQG, TIER 2,TRIS, UST, WDS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
206	IH 94 EASTBOUND NEAR 28TH STREET SPILL IH 94 EASTBOUND NEAR 28TH STREET	SPILLS	IN ROW	Anticipated	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
207	FORMER RED STAR YEAST 2702 W GREVES STREET, MILWAUKEE, WI 53208	AST, ERNS, FINDS, ICIS, LUST, MANIFEST, NONGEN, RMP, SHWIMS, SPILLS, UST	Owned by WisDOT	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
208	THIELE TANNING COMPANY 123 N 27TH STREET, MILWAUKEE, WI 53208	AIRS, ERNS, FINDS, NPDES, SPILLS, TIER 2, TRIS	NONE	~~Anticipated – ALT 2 Only~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	No Further Investigation Unless Real Estate or Construction Requirements Change
209	IH 94 ON RAMP AT W SAINT PAUL AND 26TH STREET SPILL IH 94 ON RAMP AT W SAINT PAUL AND 26TH STREET	ERNS	IN ROW	Anticipated	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
210	RED STAR YEAST 2612 W GREVES STREET, MILWAUKEE, WI	LUST	Site Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
211	D.R. DIEDRICH & COMPANY 2615 W GREVES STREET, MILWAUKEE, WI 53208	FINDS, NONGEN, NPDES, SHWIMS, SPILLS, TIER 2, TRIS, UST	NONE	~~Anticipated – ALT 2 Only~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
212	25TH STREET AND CANAL STREET BIORETENTION 199 N 25TH STREET, MILWAUKEE, WI	AUL, CRS, ERP, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
213	CANADIAN PACIFIC RAILROAD 504 S LAYTON BOULEVARD, MILWAUKEE, WI	AST, ERP, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
214	2563 W SAINT PAUL AVENUE SPILL 2563 W SAINT PAUL AVENUE, MILWAUKEE, WI	SPILLS	IN ROW	Anticipated	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
215	FORMER FRIEDA CORPORATION 333 N 25TH STREET, MILWAUKEE, WI	LUST, SPILLS, UST, WRRSER	Site Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
216	FORMER BADGER STATE TANNING 305-321 N 25TH STREET, MILWAUKEE, WI 53233	AUL, BROWNFIELDS, BRRTS, CESQG, CRS, FINDS, LUST, MANIFEST, SHWIMS	Partial Acquisition – ALT 1, ~~Site Acquisition – ALT 2~~	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
217	FORMER WEST SIDE MGP N 25TH STREET AND MOUNT VERNON AVENUE, MILWAUKEE, WI 53201	EDR MANUFACTURED GAS PLANTS	See Individual Sites				
218	BADGER TRUCK CENTER INC 2326 W SAINT PAUL AVENUE, MILWAUKEE, WI 53201	AUL, CESQG, CRS, ERP, FINDS, LUST, MANIFEST, SHWIMS, UST	Site Acquisition	Anticipated	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation
219	FORMER DMV EMISSIONS STATION 2401 W SAINT PAUL AVENUE, MILWAUKEE, WI 53233	AUL, CRS, ERNS, ERP, SPILLS	Site Acquisition ~~– ALT 2 Only~~	Anticipated	Phase 2.5 Subsurface Investigation	Phase 3 Subsurface Investigation	Phase 3 Subsurface Investigation (Acquired by WisDOT)
220	FORMER WEST SIDE MGP / MALLORY PROPERTIES 200-224 N 25TH STREET, MILWAUKEE, WI 53233	AST, AUL, BRRTS, CESQG, CRS, ERP, FINDS, LUST, MANIFEST, MANUFACTURED GAS PLANTS, NONGEN, SHWIMS, SPILLS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
221	SIVA TRUCK LEASING INC 2301 W SAINT PAUL AVENUE, MILWAUKEE, WI 53201	AST, AUL, BROWNFIELDS, BRRTS, CESQG, CRS, FINANCIAL ASSURANCE, FINDS, LUST, MANIFEST, SHWIMS, TIER 2, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
222	JM BRENNAN INC 2101 W SAINT PAUL AVENUE, MILWAUKEE, WI	AST, FINDS, LUST, MANIFEST, NONGEN, SHWIMS, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
223	MILWAUKEE CITY CENTRAL REPAIR GARAGE 2142 W CANAL STREET, MILWAUKEE, WI	BRRTS, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
224	MARQUETTE UNIVERSITY SOCCER 1818 W CANAL STREET, MILWAUKEE, WI	BRRTS, ERP	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
225	CITY OF MILWAUKEE MUNICIPAL SERVICE BUILDING 1540 W CANAL STREET, MILWAUKEE, WI	AUL, BRRTS, LUST, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
226	FORMER TEWS GARAGE 1601-1901 AND 2001 W MOUNT VERNON AVENUE, MILWAUKEE, WI	AST, AUL, CESQG, CRS, ERP, FINANCIAL ASSURANCE FINDS, LAST, LUST, SHWIMS, SPILLS, UST,	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
227	CITY OF MILWAUKEE RECYCLING CENTER 1313 W MOUNT VERNON AVENUE, MILWAUKEE, WI	AST, AUL, CRS, FINDS, LUST, NONGEN, SHWIMS, SPILLS, TIER 2, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
228	TYCO INTERNATIONAL / BADGER TRUCK CENTER 1741 W SAINT PAUL AVENUE, MILWAUKEE, WI	CESQG, FINDS, LUST, MANIFEST, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
229	FORMER BRUCH CORPORATION 1701 W SAINT PAUL AVENUE, MILWAUKEE, WI	LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
230	15TH STREET AND W SAINT PAUL AVENUE SPILL 15TH STREET AND W SAINT PAUL AVENUE, MILWAUKEE, WI	SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
231	FORMER GEUDER PARSCHKE AND FRYE COMPANY 324 N 15TH STREET, MILWAUKEE, WI	CERCLIS, ERP, FINDS, NONGEN, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
232	FORMER HOSE JOSEPH 1357-1439 W SAINT PAUL AVENUE, MILWAUKEE, WI	FINDS, NONGEN, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
233	FORMER MILWAUKEE PLUMBING 313 N 13TH STREET, MILWAUKEE, WI	AUL, CRS, ERP	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
234	ALLIED INSULATION SUPPLY COMPANY 315 N 12TH STREET, MILWAUKEE, WI	LUST, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
235	PAIN ENTERPRISES INC 1816-1832 W SAINT PAUL AVENUE, MILWAUKEE, WI	TIER 2	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
236	FORMER MONITOR PRESS AND MACHINE COMPANY INC 1610 W SAINT PAUL AVENUE, MILWAUKEE, WI	CESQG, FINDS, SHWIMS	NONE	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation
237	GENERAL PRESS AND FABRICATING 1500-1538 W SAINT PAUL AVENUE, MILWAUKEE, WI	FINDS, NONGEN, SHWIMS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
238	MATERION ADVANCED CHEMICALS INC 407 N 14TH STREET, MILWAUKEE, WI	AIRS, AUL, BRRTS, CRS, ERNS, ERP, FINDS, LQG, MANIFEST, NONGEN, SHWIMS, SPILLS, TIER 2, TRIS, TSCA	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
239	MATERION ADVANCED CHEMICALS INC 405 N 12TH STREET, MILWAUKEE, WI	AIRS, AUL, BRRTS, CRS, ERP, FINDS, LQG, LUST, MANIFEST SHWIMS, SPILLS, TRIS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
240	MARQUETTE INTERCHANGE N 13TH STREET AND CLYBOURN STREET, MILWAUKEE, WI	LUST, SPILLS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
241	MARQUETTE UNIVERSITY 530 N 13TH STREET, MILWAUKEE, WI	LUST, SPILLS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
242	MARQUETTE UNIVERSITY 1343 W WISCONSIN AVENUE, MILWAUKEE, WI	ERP, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
243	MARQUETTE UNIVERSITY 1415 W WISCONSIN AVENUE, MILWAUKEE, WI	AST, BRRTS, ERNS, LUST, MLTS, SPILLS, UST, WRRSER	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
244	MARQUETTE JESUIT RESIDENCE 1404 W WISCONSIN AVENUE, MILWAUKEE, WI	UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
245	MARQUETTE UNIVERSITY 526-604 N 16TH STREET, MILWAUKEE, WI	SHWIMS, SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
246	FORMER JOHNNY'S ENCO GAS 1500 W WISCONSIN AVENUE MILWAUKEE, WI	EDR HISTORICAL AUTO STATIONS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
247	FORMER GAS STATION N 16TH STREET AND W CLYBOURN STREET MILWAUKEE, WI	AUL, LUST	IN ROW	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
248	MARQUETTE UNIVERSITY SERVICE BUILDING #324 1706 W CLYBOURN STREET MILWAUKEE, WI	AST, BRRTS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
249	MARQUETTE UNIVERSITY 525 N 16TH STREET MILWAUKEE, WI	AST, EDR HISTORICAL AUTO STATIONS, ERNS	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
250	MARQUETTE UNIVERSITY 1621 W WISCONSIN AVENUE MILWAUKEE, WI	AST, EDR HISTORICAL AUTO STATIONS, LUST, SPILLS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
251	FORMER MARQUETTE APARTMENTS 706 N 17TH STREET MILWAUKEE, WI	AUL, CRS, LAST, LUST, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
252	BLOODCENTER OF WISCONSIN 638 N 18TH STREET MILWAUKEE, WI	AST, FINDS, LUST, MANIFEST, SHWIMS, SQG, TIER 2, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
253	MARQUETTE UNIVERSITY 721 N 17TH STREET MILWAUKEE, WI	LUST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
254	FORMER CONCENTRA OCC MEDICAL CENTERS 500 N 19TH STREET MILWAUKEE, WI	FINDS, NONGEN, SHWIMS	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
255	FORMER GOOD SAMARITAN MEDICAL CENTER 620 N 19TH STREET MILWAUKEE, WI	AIRS, FINDS, SHWIMS	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
256	SOVEREIGN APARTMENTS LLC 1810-1826 W WISCONSIN AVENUE MILWAUKEE, WI	BRRTS, UST	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
257	FORMER SINAI SAMARITAN FAMILY CARE CENTER 1834 W WISCONSIN AVENUE MILWAUKEE, WI	SHWIMS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
258	MARQUETTE UNIVERSITY 1926 W WISCONSIN AVENUE MILWAUKEE, WI	UST	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
259	2001 W WISCONSIN AVENUE 2001 W WISCONSIN AVENUE MILWAUKEE, WI	UST	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
260	ASSATA 2017-2023 W WISCONSIN AVENUE MILWAUKEE, WI	FINDS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
261	2040 W WISCONSIN AVENUE 2040 W WISCONSIN AVENUE MILWAUKEE, WI	AST, MLTS, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
262	2121 W WISCONSIN AVENUE 2121 W WISCONSIN AVENUE MILWAUKEE, WI	SPILLS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
263	FORMER AUTO STATION 2210 W WISCONSIN AVENUE MILWAUKEE, WI	EDR HISTORICAL AUTO STATIONS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
264	DOWNEY INC 2203 W MICHIGAN STREET MILWAUKEE, WI	CESQG, FINDS, MANIFEST, SHWIMS, UST	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
265	FORMER CLEANERS 2227 W WISCONSIN AVENUE MILWAUKEE, WI	EDR HISTORICAL CLEANERS	NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
266	AMBASSADOR HOTEL 2308-2324 W WISCONSIN AVENUE MILWAUKEE, WI	AST, BRRTS, UST	NONE	NONE	No Further Investigation	No Further Investigation	No Further Investigation
267	GRAND AVENUE SCHOOL 2430 W WISCONSIN AVENUE MILWAUKEE, WI	FINDS, SPILLS	NONE	NONE	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
268	2700 W SAINT PAUL AVENUE SPILL 2700 W SAINT PAUL AVENUE MILWAUKEE, WI	SPILLS	IN ROW	Anticipated	Removed From Further Assessment	Removed From Further Assessment	Removed From Further Assessment
269	SUDS YOUR DUDS 547 N 27TH STREET MILWAUKEE, WI	EDR HISTORICAL CLEANERS	NONE	Anticipated – ALT 2 Only	No Further Investigation	No Further Investigation	No Further Investigation

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
270	FORMER AUTO STATION 2715 W CLYBOURN STREET MILWAUKEE, WI	EDR HISTORICAL AUTO STATIONS	NONE	~~Anticipated – ALT 2 Only~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	Phase 2 Subsurface Investigation	No Further Investigation Unless Real Estate or Construction Requirements Change
SANBORN MAP SITES							
SAN-1	FORMER FILLING STATION SOUTH OF WISCONSIN AVENUE BETWEEN USH 41 AND THE NORTHBOUND OFF RAMP		IN ROW	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation (Completed in 2014)
SAN-2	FORMER AUTO REPAIR SOUTHWEST OF THE INTERSECTION OF 35TH STREET AND PARK HILL		IN ROW	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation
SAN-3	FORMER GAS TANKS USH 41 ROW NORTH OF STATE STREET		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
SAN-4	FORMER OIL TANK ~2033 W SAINT PAUL AVENUE		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
SAN-5	FORMER OIL TANKS, FOUNDRY ~1925 TO 2015 W SAINT PAUL AVENUE		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
SAN-6	WEPCO OIL TANKS WISDOT IH 94 ROW WEST OF 1922 W SAINT PAUL AVENUE		IN ROW	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
SAN-7	HISTORIC FILLING STATION WISDOT IH 94 ROW WEST OF 1922 W SAINT PAUL AVENUE		IN ROW	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
SAN-8	FORMER COMMERCIAL PHOTOGRAPHY AND AUTO REPAIR 2100 W CLYBOURN STREET		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
SAN-9	FORMER AUTO REPAIR 2030 W CLYBOURN STREET		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
HISTORIC PLAT MAP SITES							
HP-1	FORMER MILWAUKEE AND SUBURBAN TRANSPORT COMPANY EAST OF 70TH STREET IN IH 94 ROW		IN ROW	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation
HP-2	FORMER STANDARD OIL COMPANY SOUTHEAST OF THE INTERSECTION OF PARK HILL AND 35TH STREET		IN ROW	Anticipated	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation	Phase 2 Subsurface Investigation (Completed in 2014)
HP-3	FORMER FALK CORPORATION USH 41 ROW NORTH OF WELLS STREET		IN ROW	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
RAILROAD SITES							
RR-1	SOO LINE RAILROAD UNDERPASS BETWEEN WEST STATE STREET AND THE MENOMONEE RIVER		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
RR-2	FORMER INTERURBAN RAILROAD CROSSING IH 94 JUST EAST OF THE 70TH STREET OVERPASS		IN ROW	Anticipated	No Further Investigation	No Further Investigation	No Further Investigation
RR-3	FORMER INTERURBAN RAILROAD ADJACENT TO IH 94 (NORTH SIDE) BETWEEN 68TH STREET AND HAWLEY ROAD		IN ROW	Anticipated	No Further Investigation	No Further Investigation	No Further Investigation
RR-4	FORMER INTERURBAN RAILROAD WITHIN THE STADIUM INTERCHANGE		IN ROW	Anticipated	No Further Investigation	No Further Investigation	No Further Investigation
RR-5	FORMER RAILROAD UNDER IH 94 BETWEEN SOUTH 44TH STREET AND THE MENOMONEE RIVER		IN ROW	Anticipated	See Site 94	See Site 94	See Site 94
RR-6	SOO LINE RAILROAD UNDER IH 94 ADJACENT TO THE EAST OF THE MENOMONEE RIVER		IN ROW	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
RR-7	FORMER RAILROAD CROSSING OVER MILLER PARK WAY SOUTH OF FREDERICK MILLER WAY		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
RR-8	FORMER MILWAUKEE ROAD SHOPS BETWEEN 27TH STREET AND 44TH STREET SOUTH OF IH 94		Partial Acquisition – ALT 2 Only	Anticipated	See Site 194	See Site 194	See Site 194
RR-9	FORMER INTERURBAN RAILROAD ADJACENT TO IH 94 (SOUTH SIDE) BETWEEN RR-6 AND 35TH STREET		IN ROW	Anticipated	No Further Investigation	No Further Investigation	No Further Investigation
RR-10	FORMER INTERURBAN RAILROAD ADJACENT TO IH 94 (SOUTH SIDE) BETWEEN 35TH STREET AND 27TH STREET		IN ROW	Anticipated	No Further Investigation	No Further Investigation	No Further Investigation
RR-11	FORMER INTERURBAN RAILROAD ADJACENT TO IH 94 (SOUTH SIDE) FROM 27TH STREET TO 16TH STREET		IN ROW	Anticipated	No Further Investigation	No Further Investigation	No Further Investigation
RR-12	SOO LINE RAILROAD BETWEEN RR-6 AND 35TH STREET		IN ROW	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation

Table 1. Potential Hazardous Material Sites

Site Number	Site Name and Address	Database	Real Estate Requirements	Construction Requirements	Recommendations for Additional Investigation Alternative 1[1]	Recommendations for Additional Investigation Alternative 2[2]	Updated Recommendations for the Preferred Alternative
RR-13	SOO LINE RAILROAD BETWEEN 35TH STREET AND 27TH STREET		NONE	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
RR-14	SOO LINE RAILROAD BETWEEN 27TH STREET AND 16TH STREET		NONE	~~Anticipated~~ NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
STREAM SITES							
S-1	MENOMONEE RIVER UNDERNEATH USH 41 600 FEET SOUTH OF W STATE STREET		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change
S-2	MENOMONEE RIVER UNDERNEATH IH 94 BETWEEN N 42ND STREET (EXTENDED) AND N 44TH STREET		NONE	Anticipated	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation	Phase 2.5 Subsurface Investigation
S-3	WOOD CREEK UNDERNEATH MILLER PARK WAY SOUTH OF FREDERICK MILLER WAY		NONE	NONE	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change	No Further Investigation Unless Real Estate or Construction Requirements Change

As indicated in the above table, one hundred and twenty-four (124) sites were removed from further assessment in the Phase 1 report due to their location in relation to the project, database listing, and overall low potential for impacting the project. The sites are numbered as follows: 1, 2, 4, 5, 7, 10, 11, 12, 14, 15, 16, 32, 36, 37, 38, 39, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 89, 90, 91, 92, 93, 95, 96, 97, 99, 100, 104, 105, 106, 109, 110, 111, 113, 114, 115, 116, 117, 118, 122, 126, 127, 128, 129, 130, 131, 133, 134, 136, 137, 138, 140, 141, 142, 143, 144, 145, 146, 161, 162, 163, 166, 167, 169, 176, 181, 184, 185, 186, 198, 202, 206, 209, 214, 230, 235, 245, 257, 259, 260, 267, and 268.

The remaining one hundred and seventy-one (171) sites were assessed due to their close proximity to the project or their potential for impacting the project. Of these, No Further Investigation is recommended at nineteen (19) sites for the preferred alternative (At-Grade for the West Segment and On-Alignment for the East Segment).

No further investigation unless construction or real estate requirements change is recommended at one hundred and nine (109) sites.

A Phase 2 Subsurface Investigation (FDM Procedure 21-35-10) is recommended at twelve (12) sites.

A Phase 2.5 Subsurface Investigation (FDM Procedure 21-35-12) is recommended at fourteen (14) sites.

A Phase 3 Subsurface Investigation (FDM Procedure 21-35-15) is recommended at sixteen (16) sites.

The following is a summary of the changes that have been made based on the At-Grade/On-Alignment Alternative being chosen as the Preferred Alternative:

Potential Hazardous Material Sites – Zoo Interchange

Site 150: 505 N 27th Street has been changed to Phase 2 Subsurface Investigation based upon the potential for subsurface work (signal bases) located adjacent to the site.

Site 156: Former Nero and Son/Paul Damiano Property, 2634 W Clybourn Street, has been changed to Phase 2.5 Subsurface Investigation based upon the potential for subsurface work (signal bases) located adjacent to the site.

Site 194: Former Milwaukee Road Railroad Shops / Milwaukee Shops Property, 400-620 S 44th Street, has been changed to Phase 3 Subsurface Investigation due to required partial site acquisition (Wheelhouse Parcel) and known onsite residual soil and water contamination.

Site 200: Menomonee Valley / Former CMC, 3001 W Canal Street, has been changed to Phase 3 Subsurface Investigation due to required partial site acquisition (Wheelhouse Parcel) and known onsite residual soil and water contamination.

Site 219: Former DMV Emissions Station, 2401 W Saint Paul Avenue, has been changed to Phase 3 Subsurface Investigation due to WisDOT site acquisition and known onsite residual soil and water contamination.

Please let me know if you have any questions or comments.

Sincerely,
Kapur & Associates, Inc.

Patricia Hermann
Environmental Scientist

Attachments

S:\DOT\DOT_SE\120260 I94 East West Corridor Study\HAZMAT\PHASE 1 ADDENDUM\REPORT\IH94 Addendum 1.docx

Introduction

The Interstate Highway 94 East-West (I-94 EW) Stadium Interchange Study is located in southeastern Wisconsin and includes three and one half miles of the I-94 EW freeway corridor. The influence area is bounded by system interchanges at the east (Marquette Interchange) and west limits (Zoo Interchange).

The safety analysis of the I-94 EW corridor was documented in the "*I-94 EW Stadium Interchange Study Crash Analysis Tech Memo*" (dated September [Sept.] 14, 2012). It included a summary of existing (2005-2009) crash data and rates for the portion of the I-94 and Wisconsin State Highway 341/United States Highway 41 (WIS 341/US 41) corridors located within the study limits.

Since the development of the Sept. 2012 crash memo, the limits of the I-94 EW Study corridor have been adjusted to include an additional portion of I-94, in addition to a reduction of the WIS 341/US 41 corridor.

Therefore, the purpose of this addendum is to supplement the Sept. 2012 crash memo with additional I-94 crash data and revise the crash summary to be consistent with the current limits of the I-94 EW Study corridor (including the reduction of WIS 341/US 41). The following sections further describe these modifications to the crash memo.

Study Limits

The original I-94 EW Study limits summarized in the Sept. 2012 crash memo included I-94 from 70th Street to 25th Street and WIS 341/US 41 from National Avenue to Lisbon Avenue. However, in mid-2013 the limits on I-94 were extended east to include the portion of I-94 from 25th Street to 16th Street. Additionally, the limits on WIS 341/US 41 were reduced to only encompass the corridor between the Canal Street and Wisconsin Avenue/Wells Street Interchanges. **Figure 1** on the following page shows the changes in the I-94 and WIS 341/US 41 study limits.

Crash Data Summary

As noted in the previous section, the revised I-94 EW Study limits included an additional segment of I-94 (25th Street to 16th Street) that was not previously covered by the Sept. 2012 crash memo. As such, additional crash data for this segment was obtained from the Wisconsin Traffic Operations and Safety Laboratory's (TOPS Lab) geographical information system (GIS) crash site for 2005 to 2009 inclusive[1], which is consistent with crash data gathered for the Sept. 2012 crash memo.

[1]TOPS Lab site: http://transportal.cee.wisc.edu/applications/crash-data/ (data retrieved 6/11/13)

Figure 1 - Revised Study Limits

The TOPS Lab crash site indicated 407 crashes occurred on both directions of the I-94 mainline from 25th Street to 16th Street between 2005 and 2009. No fatal crashes were recorded for this segment. The 25th Street ramps to and from the east were included in the Sept. 2012 crash memo.

In addition, the Sept. 2012 crash memo included a longer portion of the WIS 341/US 41 corridor in comparison to the revised study limits. Based on the TOPS Lab crash data included in the Sept. 2012 crash memo, 189 mainline and 17 service ramp crashes would be removed from the overall crash total as they occur outside the revised study limits of WIS 341/US 41.

The inclusion of additional I-94 crashes and reduction of WIS 341/US 41 crashes does not significantly alter the ratio between property damage and injury crash occurrences, or modify the proportion of the most significant crash types within the study limits (rear-end, single vehicle, and sideswipe), in comparison to the summary presented in the Sept. 2012 crash memo.

Table 1 on the following page shows a summary of the crash breakdown for the I-94 EW Study area, including the revised I-94 and WIS 341/US 41 limits. It includes all crashes which occurred between 2005 and 2009 for the following roadways:

- I-94: 70th Street to 16th Street
- I-94 service ramps
    - 68th/70th Street, Hawley Road, Mitchell Boulevard, 35th Street, and 25th-28th Streets
- WIS 341/US 41: Canal Street to Wells Street
- WIS 341/US 41 service ramps
    - Canal Street and Wisconsin Avenue/Wells Street
- Stadium Interchange system ramps

Appendix A of this addendum includes revised exhibits (#1 and #3) from the Sept. 2012 crash memo, which have been updated to include crash data consistent with the revised study limits. **Appendix B** of this addendum includes revised spreadsheets which supplement those presented in Appendix B of the Sept. 2012 crash memo. The revised spreadsheets include the additional segment of I-94 from 25th Street to 16th Street and the reduced portion of WIS 341/US 41 from the Canal Street Interchange to the Wisconsin Avenue/Wells Street Interchange, consistent with the revised study limits.

Table 1 - I-94 EW Study Limits Crash Summary

Crash Type	Number of Crashes (2005-2009)	Percent of Total Crashes			Total
		Property Damage	Injury	Fatal	
Angle	51	1.2%	0.7%	0.0%	1.9%
Rear-End	1,595	41.1%	19.3%	0.0%	60.5%
Sideswipe	386	11.9%	2.7%	< 0.1%	14.6%
Single Vehicle	588	15.9%	6.3%	< 0.1%	22.3%
Other	17	0.4%	0.3%	0.0%	0.6%
Total	**2,637**	**70.6%**	**29.3%**	**0.1%**	**100.0%**

Conclusion

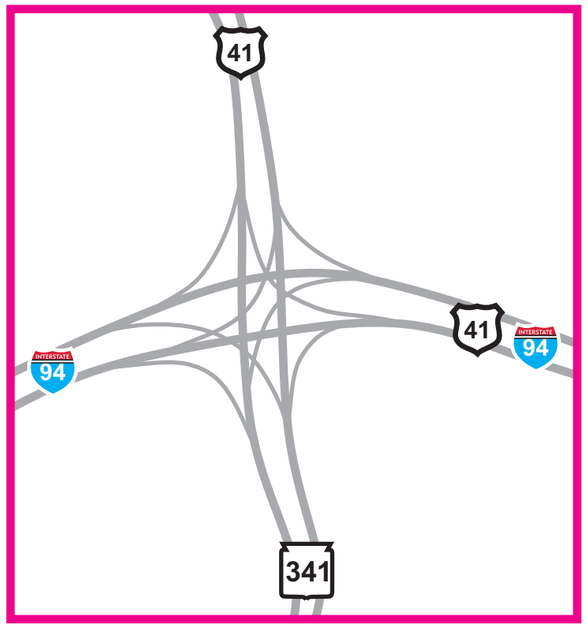
This addendum supplements the Sept. 2012 crash memo with crash data that is consistent with the revised I-94 EW Study limits.

Appendix A – Revised Exhibits

Exhibit 1: Study Area

I-94 East-West Stadium Interchange Study

I-94, US 41, WIS 341 & Stadium Interchange



N

Not To Scale

Garfield Ave
Lloyd St
Lisbon Ave
Vine St
Washington Blvd
47th St
35th St
Vliet St
Hawley Rd
Alois St
41
46th St
Martin Dr
28th St
26th St
25th St
Highland Blvd
State St
16th St
Wells St
Wisconsin Ave
18
Wisconsin Ave
Bluemound Rd
18
18
Mitchell Blvd
Clybourn St
St Paul Ave
41
94
Park Hill Ave
41
94
57
Canal St
O'Connor St
94
Kearney St
94
Frederick Miller Way
Canal St
35th St
Layton Blvd (27th St)
Main St
70th St
68th St
341
59
National Ave
Miller Park Way
59
Greenfield Ave

Legend

- Interstate Highway
- United States Highway
- Wisconsin State Highway
- Freeway
- Local Street
- Study Area
- Major Local Roadway
- Service Interchange
- Local Intersection (within 0.5 mi of freeway corridor)

WISCONSIN DEPARTMENT OF TRANSPORTATION

11/2/15

Exhibit 3: Total Crash Rates

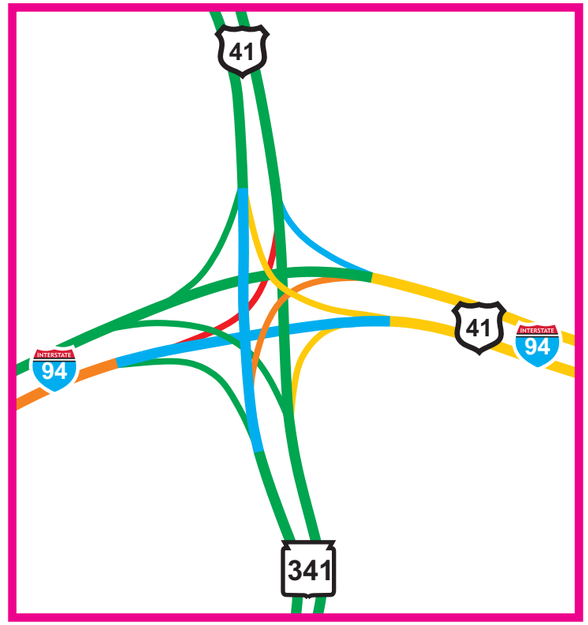
I-94 East-West Stadium Interchange Study

I-94, US 41, WIS 341 & Stadium Interchange

Mainlines, System Ramps, Service Ramps, Local Roadways & Intersections

N

Not To Scale



Garfield Ave
Lloyd St
Lisbon Ave
Vine St
Washington Blvd
47th St
35th St
Vliet St
Hawley Rd
46th St
Alois St
Martin Dr
Highland Blvd
State St
70th St
68th St
Wells St
Wisconsin Ave
To Highland Blvd
28th St
26th St
25th St
16th St
Bluemound Rd
Mitchell Blvd
Clybourn St
St Paul Ave
Park Hill Ave
Canal St
O'Connor St
Kearney St
Frederick Miller Way
Canal St
35th St
Layton Blvd (27th St)
Main St
National Ave
Hawley Rd
Miller Park Way
Greenfield Ave

Notes:

1. Statewide average total crash rate for a "large urban freeway" from 2005-2009 is 85 crashes/100M VMT (discounting deer-related crashes)
2. Statewide average total crash rate for an "urban street" from 2005-2009 is 326 crashes/100M VMT
3. Total crash rate includes reported property damage, injury, and fatal crashes (2005-2009)

Legend

Freeway & Local Road Total Crash Rate Range

- 0.0 to 100.0 Crashes/100M VMT
- 100.1 to 200.0 Crashes/100M VMT
- 200.1 to 300.0 Crashes/100M VMT
- 300.1 to 400.0 Crashes/100M VMT
- More than 400.0 Crashes/100M VMT

System Ramp, Service Ramp & Local Intersection Total Crash Rate Range

- 0.0 to 0.3 Crashes/1MEV
- 0.31 to 0.6 Crashes/1MEV
- 0.61 to 0.9 Crashes/1MEV
- 0.91 to 1.2 Crashes/1MEV
- More than 1.2 Crashes/1MEV

- Freeway
- Local Street

WISCONSIN DEPARTMENT OF TRANSPORTATION

11/2/15

Appendix B – Revised Crash Spreadsheets

I-94 East-West Stadium Interchange Study

I-94 Freeway Mainline

Crash Data and Calculations (2005-2009)

Interstate Highway 94 Eastbound

ROADWAY SEGMENT	Segment Length (ft)	Segment Length (Miles)	Segment Existing AADT	Total Crashes (PD + Fatal/Inj) (2005-2009)	Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/100M VMT)	Property Damage (PD) Crashes Only					Total Number of PD Crashes (2005-2009)	Average Number of PD Crashes per Year (2005-2009)	PD Crash Rate (2005-2009) (Crashes/100M VMT)	Fatal and Injury Crashes Only					Total Number of Fatal/Inj Crashes (2005-2009)	Average Number of Fatal/Inj Crashes per Year (2005-2009)	Fatal/Inj Crash Rate (2005-2009) (Crashes/100M VMT)
						2005	2006	2007	2008	2009				2005	2006	2007	2008	2009			
70th Street Exit Ramp to 68th Street Entrance Ramp	2440	0.46	69150	128	219.5	15	20	18	19	17	89	17.8	152.6	9	9	6	10	5	39	7.8	66.9
68th Street Entrance Ramp to Hawley Road Exit Ramp	1210	0.23	76500	45	140.6	13	3	6	4	4	30	6.0	93.8	2	5	3	2	3	15	3.0	46.9
Between Hawley Road Exit and Entrance Ramps	1510	0.29	71750	95	253.7	12	14	11	17	16	70	14.0	186.9	7	8	2	4	4	25	5.0	66.8
Hawley Road Entrance Ramp to Mitchell Boulevard Exit Ramp	800	0.15	76250	18	85.4	1	8	0	1	2	12	2.4	56.9	2	1	0	2	1	6	1.2	28.5
Between Mitchell Boulevard Exit and Entrance Ramps	1490	0.28	74650	149	387.6	23	25	20	16	25	109	21.8	283.5	6	9	10	10	5	40	8.0	104.0
Mitchell Boulevard Entrance Ramp to Stadium Interchange System Ramps	640	0.12	77500	59	344.1	13	11	5	5	7	41	8.2	239.2	4	5	2	2	5	18	3.6	105.0
SEE STADIUM INTERCHANGE FOR SYSTEM RAMP CRASH DATA																					
Stadium Interchange System Ramps to 35th Street Exit Ramp	1580	0.30	76500	115	275.3	41	16	13	7	7	84	16.8	201.1	10	5	4	6	6	31	6.2	74.2
Between 35th Street Exit and Entrance Ramps	1840	0.35	69750	140	315.6	23	16	30	19	17	105	21.0	236.7	7	12	6	4	6	35	7.0	78.9
35th Street Entrance Ramp to 26th Street Exit Ramp	1870	0.35	69000	71	159.2	20	20	7	2	1	50	10.0	112.1	5	7	3	6	0	21	4.2	47.1
26th Street Exit Ramp to 25th Street Entrance Ramp	1610	0.30	61500	208	607.8	50	25	42	20	10	147	29.4	429.5	20	9	21	9	2	61	12.2	178.2
25th St Entrance Ramp to 16th Street	2640	0.50	76500	254	363.9	49	31	56	15	3	154	30.8	220.6	29	24	35	7	5	100	20.0	143.3
			TOTAL	**1282**	**TOTAL**	**260**	**189**	**208**	**125**	**109**	**891**		**TOTAL**	**101**	**94**	**92**	**62**	**42**	**391**		

Interstate Highway 94 Westbound

ROADWAY SEGMENT	Segment Length (ft)	Segment Length (Miles)	Segment Existing AADT	Total Crashes (PD + Fatal/Inj) (2005-2009)	Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/100M VMT)	Property Damage (PD) Crashes Only					Total Number of PD Crashes (2005-2009)	Average Number of PD Crashes per Year (2005-2009)	PD Crash Rate (2005-2009) (Crashes/100M VMT)	Fatal and Injury Crashes Only					Total Number of Fatal/Inj Crashes (2005-2009)	Average Number of Fatal/Inj Crashes per Year (2005-2009)	Fatal/Inj Crash Rate (2005-2009) (Crashes/100M VMT)
						2005	2006	2007	2008	2009				2005	2006	2007	2008	2009			
16th Street to 25th Street Exit Ramp	2640	0.50	76500	153	219.2	36	22	15	12	31	116	23.2	166.2	13	10	5	2	7	37	7.4	53.0
25th Street Exit Ramp to 27th Street Entrance Ramp	2530	0.48	69000	126	208.8	17	17	10	22	23	89	17.8	147.5	5	8	6	10	8	37	7.4	61.3
27th Street Entrance Ramp to 35th Street Exit Ramp	930	0.18	79000	21	82.7	1	5	4	3	4	17	3.4	66.9	0	1	1	0	2	4	0.8	15.8
Between 35th Street Exit and Entrance Ramps	1840	0.35	69750	100	225.4	10	10	15	19	23	77	15.4	173.6	0	6	7	4	6	23	4.6	51.8
35th Street Entrance Ramp to Stadium Interchange System Ramps	1580	0.30	76500	115	275.3	25	19	20	11	12	87	17.4	208.2	9	4	7	3	5	28	5.6	67.0
SEE STADIUM INTERCHANGE FOR SYSTEM RAMP CRASH DATA																					
Stadium Interchange System Ramps to Mitchell Boulevard Exit Ramp	640	0.12	77500	27	157.5	5	5	2	2	5	19	3.8	110.8	2	2	1	1	2	8	1.6	46.7
Between Mitchell Boulevard Exit and Entrance Ramps	1490	0.28	74650	98	254.9	6	9	25	19	15	74	14.8	192.5	3	6	3	6	6	24	4.8	62.4
Mitchell Boulevard Entrance Ramp to Hawley Road Exit Ramp	800	0.15	76250	24	113.8	4	1	4	2	6	17	3.4	80.6	1	2	4	0	0	7	1.4	33.2
Between Hawley Road Exit and Entrance Ramps	1510	0.29	71750	75	200.3	16	15	13	5	8	57	11.4	152.2	5	5	3	3	2	18	3.6	48.1
Hawley Road Entrance Ramp to 68th Street Exit Ramp	1210	0.23	76500	38	118.8	6	11	3	3	3	26	5.2	81.3	5	1	3	1	2	12	2.4	37.5
68th Street Exit Ramp to 70th Street Entrance Ramp	2440	0.46	69150	144	246.9	18	24	13	18	27	100	20.0	171.5	7	7	10	12	8	44	8.8	75.4
			TOTAL	**921**	**TOTAL**	**144**	**138**	**124**	**116**	**157**	**679**		**TOTAL**	**50**	**52**	**50**	**42**	**48**	**242**		

Notes:

1. Crash data pulled manually from WisDOT TOPS lab website for years 2005-2009
2. Mainline crash data does not include crashes located on service or system ramps
3. Existing segment AADT (2010) pulled from WisDOT traffic counts website: Link
4. Mainline segment lengths are approximate and rounded to the nearest 10 feet

I-94 East-West Stadium Interchange Study

I-94 Service Interchange Ramps

Crash Data and Calculations (2005-2009)

Interstate Highway 94 Service Ramps

SERVICE INTERCHANGE RAMP	Ramp Existing AADT	Total Crashes (PD + Fatal/Inj) (2005-2009)	Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/1MEV)	Property Damage (PD) Crashes Only					Total Number of PD Crashes (2005-2009)	Average Number of PD Crashes per Year (2005-2009)	PD Crash Rate (2005-2009) (Crashes/1MEV)	Fatal and Injury Crashes Only					Total Number of Fatal/Inj Crashes (2005-2009)	Average Number of Fatal/Inj Crashes per Year (2005-2009)	Fatal/Inj Crash Rate (2005-2009) (Crashes/1MEV)
				2005	2006	2007	2008	2009				2005	2006	2007	2008	2009			
70th Street/68th Street																			
EB Exit Ramp (70th Street)	5100	0	0.0	0	0	0	0	0	0	0.0	0.0	0	0	0	0	0	0	0.0	0.0
EB Entrance Ramp (68th Street)	7900	8	0.6	3	0	0	1	1	5	1.0	0.3	1	0	0	1	1	3	0.6	0.2
WB Exit Ramp (68th Street)	6800	8	0.6	1	0	0	1	1	3	0.6	0.2	2	2	1	0	0	5	1.0	0.4
WB Entrance Ramp (70th Street)	5500	1	0.1	0	0	0	0	1	1	0.2	0.1	0	0	0	0	0	0	0.0	0.0
Hawley Road																			
EB Exit Ramp	4100	0	0.0	0	0	0	0	0	0	0.0	0.0	0	0	0	0	0	0	0.0	0.0
EB Entrance Ramp	4500	4	0.5	0	0	0	0	1	1	0.2	0.1	0	1	2	0	0	3	0.6	0.4
WB Exit Ramp	3100	5	0.9	1	0	1	1	2	5	1.0	0.9	0	0	0	0	0	0	0.0	0.0
WB Entrance Ramp	5400	7	0.7	0	1	1	1	0	3	0.6	0.3	0	1	2	0	1	4	0.8	0.4
Mitchell Boulevard																			
EB Exit Ramp	1400	6	2.3	0	0	2	2	1	5	1.0	2.0	1	0	0	0	0	1	0.2	0.4
EB Entrance Ramp	1300	6	2.5	1	0	2	1	1	5	1.0	2.1	0	0	0	1	0	1	0.2	0.4
WB Exit Ramp	930	2	1.2	0	1	0	0	1	2	0.4	1.2	0	0	0	0	0	0	0.0	0.0
WB Entrance Ramp	1800	7	2.1	2	0	1	2	1	6	1.2	1.8	0	0	0	0	1	1	0.2	0.3
35th Street																			
EB Exit Ramp	6100	6	0.5	3	1	0	0	0	4	0.8	0.4	1	0	1	0	0	2	0.4	0.2
EB Entrance Ramp	4600	3	0.4	1	0	0	1	0	2	0.4	0.2	1	0	0	0	0	1	0.2	0.1
WB Exit Ramp	3400	2	0.3	0	0	0	0	1	1	0.2	0.2	0	0	0	0	1	1	0.2	0.2
WB Entrance Ramp	7400	3	0.2	1	0	1	0	0	2	0.4	0.1	0	0	0	0	1	1	0.2	0.1
28th Street/St Paul Avenue																			
WB Entrance Ramp	10000	11	0.6	1	0	2	4	2	9	1.8	0.5	0	1	0	0	1	2	0.4	0.1
26th Street/25th Street																			
EB Exit Ramp (26th Street)	7500	9	0.7	3	3	0	0	1	7	1.4	0.5	2	0	0	0	0	2	0.4	0.1
EB Entrance Ramp (25th Street)	8700	3	0.2	1	0	1	0	0	2	0.4	0.1	0	1	0	0	0	1	0.2	0.1
WB Exit Ramp (25th Street)	8100	1	0.1	0	0	0	0	1	1	0.2	0.1	0	0	0	0	0	0	0.0	0.0
	TOTAL	**92**	**TOTAL**	**18**	**6**	**11**	**14**	**15**	**64**		**TOTAL**	**8**	**6**	**6**	**2**	**6**	**28**		

Notes:

1. Crash data pulled manually from WisDOT TOPS lab website for years 2005-2009
2. Service ramp crash data does not include crashes within the ramp terminal area of influence
3. Existing service ramp AADT (2010) pulled from WisDOT traffic counts website: **Link**

I-94 East-West Stadium Interchange Study
I-94 Freeway Mainline
Crash Rate Comparison to Statewide Crash Rates

Interstate Highway 94

ROADWAY SEGMENT	Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/100M VMT)			PD Crash Rate (2005-2009) (Crashes/100M VMT)			Fatal/Inj Crash Rate (2005-2009) (Crashes/100M VMT)		
	I-94 East-West Study Area	Statewide "Large Urban Freeway" Average	% Difference	I-94 East-West Study Area	Statewide "Large Urban Freeway" Average	% Difference	I-94 East-West Study Area	Statewide "Large Urban Freeway" Average	% Difference
Eastbound									
70th Street Exit Ramp to 68th Street Entrance Ramp	219.5		158.2%	152.6		155.2%	66.9		166.4%
68th Street Entrance Ramp to Hawley Road Exit Ramp	140.6		65.5%	93.8		56.8%	46.9		86.8%
Between Hawley Road Exit and Entrance Ramps	253.7	85.0	198.5%	186.9	59.8	212.6%	66.8	25.1	166.0%
Hawley Road Entrance Ramp to Mitchell Boulevard Exit Ramp	85.4		0.4%	56.9		-4.8%	28.5		13.4%
Between Mitchell Boulevard Exit and Entrance Ramps	387.6		356.0%	283.5		374.1%	104.0		314.5%
Mitchell Boulevard Entrance Ramp to Stadium Interchange System Ramps	344.1		304.9%	239.2		299.9%	105.0		318.3%
SEE STADIUM INTERCHANGE FOR SYSTEM RAMP CRASH RATE COMPARISON									
Stadium Interchange System Ramps to 35th Street Exit Ramp	275.3		223.8%	201.1		236.2%	74.2		195.6%
Between 35th Street Exit and Entrance Ramps	315.6		271.3%	236.7		295.8%	78.9		214.3%
35th Street Entrance Ramp to 26th Street Exit Ramp	159.2	85.0	87.3%	112.1	59.8	87.5%	47.1	25.1	87.6%
26th Street Exit Ramp to 25th Street Entrance Ramp	607.8		615.0%	429.5		618.3%	178.2		610.1%
25th Street Entrance Ramp to 16th Street	363.9		328.1%	220.6		268.9%	143.3		470.7%
Westbound									
16th Street to 25th St Exit Ramp	219.2		157.9%	166.2		177.9%	53.0		111.2%
25th Street Exit Ramp to 27th Street Entrance Ramp	208.8		145.7%	147.5		146.7%	61.3		144.3%
27th Street Entrance Ramp to 35th Street Exit Ramp	82.7	85.0	-2.7%	66.9	59.8	11.9%	15.8	25.1	-37.2%
Between 35th Street Exit and Entrance Ramps	225.4		165.2%	173.6		190.3%	51.8		106.6%
35th Street Entrance Ramp to Stadium Interchange System Ramps	275.3		223.8%	208.2		248.2%	67.0		167.0%
SEE STADIUM INTERCHANGE FOR SYSTEM RAMP CRASH RATE COMPARISON									
Stadium Interchange System Ramps to Mitchell Boulevard Exit Ramp	157.5		85.3%	110.8		85.3%	46.7		85.9%
Between Mitchell Boulevard Exit and Entrance Ramps	254.9		199.9%	192.5		221.9%	62.4		148.7%
Mitchell Boulevard Entrance Ramp to Hawley Road Exit Ramp	113.8	85.0	33.9%	80.6	59.8	34.8%	33.2	25.1	32.3%
Between Hawley Road Exit and Entrance Ramps	200.3		135.6%	152.2		154.5%	48.1		91.5%
Hawley Road Entrance Ramp to 68th Street Exit Ramp	118.8		39.7%	81.3		35.9%	37.5		49.4%
68th Street Exit Ramp to 70th Street Entrance Ramp	246.9		190.5%	171.5		186.7%	75.4		200.6%
Average for Interstate Highway 94 Mainline (2005-2009)	**238.9**	**85.0**	**181.1%**	**171.1**	**59.8**	**186.1%**	**67.8**	**25.1**	**170.2%**

I-94 East-West Stadium Interchange Study

WIS 341/US 41 Freeway Mainline

Crash Data and Calculations (2005-2009)

Wisconsin State Highway 341/United States Highway 41 Northbound

ROADWAY SEGMENT	Segment Length (ft)	Segment Length (Miles)	Segment Existing AADT	Total Crashes (PD + Fatal/Inj) (2005-2009)	Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/100M VMT)	Property Damage (PD) Crashes Only					Total Number of PD Crashes (2005-2009)	Average Number of PD Crashes per Year (2005-2009)	PD Crash Rate (2005-2009) (Crashes/100M VMT)	Fatal and Injury Crashes Only					Total Number of Fatal/Inj Crashes (2005-2009)	Average Number of Fatal/Inj Crashes per Year (2005-2009)	Fatal/Inj Crash Rate (2005-2009) (Crashes/100M VMT)
						2005	2006	2007	2008	2009				2005	2006	2007	2008	2009			
Between Frederick Miller Way/Canal Street Exit and Entrance Ramps	520	0.10	26200	17	361.0	2	2	0	2	3	9	1.8	191.1	1	1	2	3	1	8	1.6	169.9
Frederick Miller Way/Canal Street Entrance Ramp to Stadium Interchange System Ramps	1660	0.31	27900	32	199.9	3	4	3	6	5	21	4.2	131.2	2	3	1	2	3	11	2.2	68.7
SEE STADIUM INTERCHANGE FOR SYSTEM RAMP CRASH DATA																					
Stadium Interchange System Ramps to Wisconsin Avenue/Wells Street Exit Ramp	610	0.12	34900	13	176.7	1	2	0	3	4	10	2.0	135.9	0	0	2	0	1	3	0.6	40.8
Between Wisconsin Avenue/Wells Street Exit and Entrance Ramps	1700	0.32	31100	19	104.0	6	2	1	2	1	12	2.4	65.7	1	2	2	2	0	7	1.4	38.3
			TOTAL	**81**	**TOTAL**	**12**	**10**	**4**	**13**	**13**	**52**		**TOTAL**	**4**	**6**	**7**	**7**	**5**	**29**		

Wisconsin State Highway 341/United States Highway 41 Southbound

ROADWAY SEGMENT	Segment Length (ft)	Segment Length (Miles)	Segment Existing AADT	Total Crashes (PD + Fatal/Inj) (2005-2009)	Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/100M VMT)	Property Damage (PD) Crashes Only					Total Number of PD Crashes (2005-2009)	Average Number of PD Crashes per Year (2005-2009)	PD Crash Rate (2005-2009) (Crashes/100M VMT)	Fatal and Injury Crashes Only					Total Number of Fatal/Inj Crashes (2005-2009)	Average Number of Fatal/Inj Crashes per Year (2005-2009)	Fatal/Inj Crash Rate (2005-2009) (Crashes/100M VMT)
						2005	2006	2007	2008	2009				2005	2006	2007	2008	2009			
Between Wisconsin Avenue/Wells Street Exit and Entrance Ramps	1700	0.32	33000	9	46.4	0	0	1	4	0	5	1.0	25.8	0	2	1	1	0	4	0.8	20.6
Wisconsin Avenue/Wells Street Entrance Ramp to Stadium Interchange System Ramps	610	0.12	36600	15	194.4	0	1	3	0	2	6	1.2	77.8	3	1	1	1	3	9	1.8	116.6
SEE STADIUM INTERCHANGE FOR SYSTEM RAMP CRASH DATA																					
Stadium Interchange System Ramps to Frederick Miller Way/Canal Street Exit Ramp	1660	0.31	29700	20	117.4	1	2	1	6	4	14	2.8	82.2	1	2	1	2	0	6	1.2	35.2
Between Frederick Miller Way/Canal Street Ramps	520	0.10	27600	7	141.1	1	0	1	2	0	4	0.8	80.6	1	0	1	0	1	3	0.6	60.5
			TOTAL	**51**	**TOTAL**	**2**	**3**	**6**	**12**	**6**	**29**		**TOTAL**	**5**	**5**	**4**	**4**	**4**	**22**		

Notes:

1. Crash data pulled manually from WisDOT TOPS lab website for years 2005-2009
2. Mainline crash data does not include crashes located on service or system ramps
3. Existing segment AADT (2010) pulled from WisDOT traffic counts website: **Link**
4. Mainline segment lengths are approximate and rounded to the nearest 10 feet

I-94 East-West Stadium Interchange Study
WIS 341/US 41 Service Interchange Ramps
Crash Data and Calculations (2005-2009)

Wisconsin State Highway 341/United States Highway 41 Service Ramps

SERVICE INTERCHANGE RAMP	Ramp Existing AADT	Total Crashes (PD + Fatal/Inj) (2005-2009)	Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/1MEV)	Property Damage (PD) Crashes Only								Fatal and Injury Crashes Only							
				2005	2006	2007	2008	2009	Total Number of PD Crashes (2005-2009)	Average Number of PD Crashes per Year (2005-2009)	PD Crash Rate (2005-2009) (Crashes/1MEV)	2005	2006	2007	2008	2009	Total Number of Fatal/Inj Crashes (2005-2009)	Average Number of Fatal/Inj Crashes per Year (2005-2009)	Fatal/Inj Crash Rate (2005-2009) (Crashes/1MEV)
Frederick Miller Way/Canal Street																			
NB Exit Ramp	2600	0	0.0	0	0	0	0	0	0	0.0	0.0	0	0	0	0	0	0	0.0	0.0
NB Entrance Ramp	1700	1	0.3	0	0	0	0	1	1	0.2	0.3	0	0	0	0	0	0	0.0	0.0
SB Exit Ramp	2100	3	0.8	0	1	1	0	0	2	0.4	0.5	0	0	1	0	0	1	0.2	0.3
SB Entrance Ramp	3400	0	0.0	0	0	0	0	0	0	0.0	0.0	0	0	0	0	0	0	0.0	0.0
Wisconsin Avenue/Wells Street																			
NB Exit Ramp (Wisconsin Avenue)	3800	3	0.4	1	0	0	0	0	1	0.2	0.1	0	0	0	1	1	2	0.4	0.3
NB Entrance Ramp (Wells Street)	2600	1	0.2	0	0	0	0	0	0	0.0	0.0	0	0	0	0	1	1	0.2	0.2
SB Exit Ramp (Wells Street)	2500	1	0.2	0	0	1	0	0	1	0.2	0.2	0	0	0	0	0	0	0.0	0.0
SB Entrance Ramp (Wisconsin Avenue)	3600	0	0.0	0	0	0	0	0	0	0.0	0.0	0	0	0	0	0	0	0.0	0.0
	TOTAL	**9**	**TOTAL**	**1**	**1**	**2**	**0**	**1**	**5**		**TOTAL**	**0**	**0**	**1**	**1**	**2**	**4**		

Notes:
1. Crash data pulled manually from WisDOT TOPS lab website for years 2005-2009
2. Service ramp crash data does not include crashes within the ramp terminal area of influence
3. Existing service ramp AADT (2010) pulled from WisDOT traffic counts website: **Link**

I-94 East-West Stadium Interchange Study
WIS 341/US 41 Freeway Mainline
Crash Rate Comparison to Statewide Crash Rates

Wisconsin State Highway 341/United States Highway 41

ROADWAY SEGMENT	Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/100M VMT)			PD Crash Rate (2005-2009) (Crashes/100M VMT)			Fatal/Inj Crash Rate (2005-2009) (Crashes/100M VMT)		
	I-94 East-West Study Area	Statewide "Large Urban Freeway" Average	% Difference	I-94 East-West Study Area	Statewide "Large Urban Freeway" Average	% Difference	I-94 East-West Study Area	Statewide "Large Urban Freeway" Average	% Difference
Northbound									
Between Frederick Miller Way/Canal Street Exit and Entrance Ramps	361.0	85.0	324.7%	191.1	59.8	219.6%	169.9	25.1	576.8%
Frederick Miller Way/Canal Street Entrance Ramp to Stadium Interchange System Ramps	199.9		135.2%	131.2		119.4%	68.7		173.8%
SEE STADIUM INTERCHANGE FOR SYSTEM RAMP CRASH RATE COMPARISON									
Stadium Interchange System Ramps to Wisconsin Avenue/Wells Street Exit Ramp	176.7	85.0	107.8%	135.9	59.8	127.3%	40.8	25.1	62.4%
Between Wisconsin Avenue/Wells Street Exit and Entrance Ramps	104.0		22.3%	65.7		9.8%	38.3		52.6%
Southbound									
Between Wisconsin Avenue/Wells Street Exit and Entrance Ramps	46.4	85.0	-45.4%	25.8	59.8	-56.9%	20.6	25.1	-17.8%
Wisconsin Avenue/Wells Street Entrance Ramp to Stadium Interchange System Ramps	194.4		128.7%	77.8		30.0%	116.6		364.7%
SEE STADIUM INTERCHANGE FOR SYSTEM RAMP CRASH RATE COMPARISON									
Stadium Interchange System Ramps to Frederick Miller Way/Canal Street Exit Ramp	117.4	85.0	38.1%	82.2	59.8	37.4%	35.2	25.1	40.3%
Between Frederick Miller Way/Canal Street Ramps	141.1		66.0%	80.6		34.8%	60.5		140.9%
Average for Wisconsin State Highway 341/United States Highway 41 Mainline (2005-2009)	**167.6**	**85.0**	**97.2%**	**98.8**	**59.8**	**65.2%**	**68.8**	**25.1**	**174.2%**

I-94 East-West Stadium Interchange Study
Stadium Interchange System Ramps
Crash Data and Calculations (2005-2009)

Stadium Interchange (WIS 341, US 41, and I-94) System Ramps

				Property Damage (PD) Crashes Only								Fatal and Injury Crashes Only							
SYSTEM INTERCHANGE RAMP	**Ramp Existing AADT**	**Total Crashes (PD + Fatal/Inj) (2005-2009)**	**Total Crash Rate (PD + Fatal/Inj) (2005-2009) (Crashes/1MEV)**	**2005**	**2006**	**2007**	**2008**	**2009**	**Total Number of PD Crashes (2005-2009)**	**Average Number of PD Crashes per Year (2005-2009)**	**PD Crash Rate (2005-2009) (Crashes/1MEV)**	**2005**	**2006**	**2007**	**2008**	**2009**	**Total Number of Fatal/Inj Crashes (2005-2009)**	**Average Number of Fatal/Inj Crashes per Year (2005-2009)**	**Fatal/Inj Crash Rate (2005-2009) (Crashes/1MEV)**
I-94 EB to US 41 NB (W-N)	8200	49	3.3	6	10	8	3	4	31	6.2	2.1	6	4	6	1	1	18	3.6	1.2
I-94 EB through the Stadium Interchange (W-E)	56000	29	0.3	1	7	6	6	4	24	4.8	0.2	2	0	1	1	1	5	1.0	0.0
I-94 EB to WIS 341 SB (W-S)	7900	9	0.6	2	1	3	0	0	6	1.2	0.4	1	0	1	1	0	3	0.6	0.2
I-94 WB to US 41 NB (E-N)	13400	4	0.2	0	1	1	1	0	3	0.6	0.1	0	1	0	0	0	1	0.2	0.0
I-94 WB through the Stadium Interchange (E-W)	55700	38	0.4	4	7	6	2	8	27	5.4	0.3	1	1	2	6	1	11	2.2	0.1
I-94 WB to WIS 341 SB (E-S)	7400	14	1.0	1	5	2	0	2	10	2.0	0.7	0	0	2	2	0	4	0.8	0.3
WIS 341 NB to I-94 WB (S-W)	7600	7	0.5	0	1	2	1	0	4	0.8	0.3	1	1	1	0	0	3	0.6	0.2
WIS 341 NB to US 41 NB (S-N)	13300	9	0.4	0	0	2	2	1	5	1.0	0.2	0	1	2	1	0	4	0.8	0.2
WIS 341 NB to I-94 EB (S-E)	7000	10	0.8	1	1	2	1	2	7	1.4	0.5	1	1	1	0	0	3	0.6	0.2
US 41 SB to I-94 WB (N-W)	13500	12	0.5	2	5	2	2	0	11	2.2	0.4	0	1	0	0	0	1	0.2	0.0
US 41 SB to WIS 341 SB (N-S)	14400	6	0.2	0	1	0	1	1	3	0.6	0.1	0	0	0	0	3	3	0.6	0.1
US 41 SB to I-94 EB (N-E)	8700	14	0.9	2	0	3	3	2	10	2.0	0.6	1	1	1	1	0	4	0.8	0.3
	TOTAL	**201**	**TOTAL**	**19**	**39**	**37**	**22**	**24**	**141**		**TOTAL**	**13**	**11**	**17**	**13**	**6**	**60**		

Notes:
1. Crash data pulled manually from WisDOT TOPS lab website for years 2005-2009
2. System ramp crash data does not include crashes already counted on mainline
3. Existing system ramp AADT (2010) pulled from WisDOT traffic counts website: **Link**

ARCHITECTURE/HISTORY SURVEY
COVER SHEET

DT1446 4/2008 Wisconsin Department of Transportation

Instructions: Please complete this cover sheet and Worksheets A and B for all Wisconsin Department of Transportation (WisDOT) architecture/history surveys. Directions for completing the worksheets are included in the *WisDOT Survey Manual*. If a letter report is appropriate, the cover sheet **must** be completed, but Worksheets A and B are not required.

1. PROJECT INFORMATION

WisDOT Project ID 1060-27-01	County Milwaukee
Highway/Street I-94 East/West & Stadium Interchange	City/Town/Village City of Milwaukee
Project Termini 70th Street (west) to 25th Street (east) on I-94 East/West Canal Street (south) to the north end of the State Street overpass (north) on the Stadium Freeway (USH 41/Miller Park Way[WIS 341])	
USGS Topographic Map/Survey Map USGS Milwaukee (7.5 Minute)	
Prepared By Heritage Research, Ltd. (McQuillen)	Survey Date May 2012

2. RECOMMENDATIONS - Based on the work described on Worksheets A and B, the following steps are recommended to complete the Section 106 Review:

☐ No listed, eligible, or potentially eligible buildings/structures are identified - No further work recommended.

☒ Listed, eligible, or potentially eligible buildings/structures are identified – Check all that apply:

☒ Listed or previously determined eligible properties – List each property below:

W. WASHINGTON/N. HI-MOUNT BOULEVARD HISTORIC DISTRICT* LISTED NRHP 5/18/94 Criteria A & C
4701 W. Washington Boulevard, Apartment Building, AHI #31863 (Non-contributing)
1701-03 N. 47th Street, House, AHI #223034 (Non-contributing)

NORTHWESTERN BRANCH, NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS HISTORIC DISTRICT** LISTED NRHP & NHL 6/3/2005 Criteria A & C
5000 W. National Avenue, Civil War Soldiers' & Sailors' Monument (Resource #120), AHI #119480 (Contributing)
5000 W. National Avenue, Cemetery Reception House (Resource #57), AHI #119854 (Contributing)

SOLDIERS' HOME REEF LISTED NRHP & NHL 11/04/1993 Criteria A & B

* Only properties in APE listed

** Note: The historic boundary for this district borders both I-94 and the Stadium Freeway (WIS 341/Miller Park Way).

☒ Potentially eligible properties - DOE recommended – List each property and applicable National Register criteria below:

607 N. Story Parkway (part of the Story Hill Residential Historic District), AHI #221926, Criterion C
900 & 944 N. 46th Street, American Hair & Felt Company, AHI #117998, Criteria A

☒ Potentially eligible properties – DOE **not** recommended – List each property and applicable National Register criteria and explain why a DOE is not recommended:

4715 W. Vliet Street, City of Milwaukee Third District Police Station, AHI #221927, Criterion C

W. Lloyd Street/W. Vliet Street, Washington Park, AHI #111088, 120123, 120124, 223032, Criterion C
4400 W. National Avenue, P&H Mining Equipment (Harnischfeger), AHI #221964, Criteria A & C

These three properties were included in the original survey area for the project. The survey area for the Stadium Interchange portion was later modified and the properties are no longer included within the Area of Potential Effects (APE). It was decided to keep the properties that were surveyed as part of the original project scope within the survey report for future planning proposes; however, since there is no potential for the proposed project activities to affect those characteristics that would qualify these three properties as potentially eligible for the National Register, there is no need to complete DOEs at this time. If project plans were to change, the need for DOEs should be reassessed.

3. ATTACHMENT CHECK LIST

☒ Architecture/History Survey Worksheet A

☒ Architecture/History Survey Worksheet B

☐ Letter report (if applicable) with supplemental information

☒ Map with surveyed properties clearly labeled

☒ Appropriate survey images, see below:

County is digitized	County is **not** digitized
☒ Images uploaded to WHPD	☐ Inventory cards with color prints attached
☒ 1 set of labeled color prints for SHPO	☐ 1 set of labeled color prints for BEES
☒ 1 set of labeled color prints for BEES	

ARCHITECTURE/HISTORY SURVEY
WORKSHEET A

1. Project Description and Area of Potential Effects (APE)

Briefly describe project activities and the APE for buildings/structures.

The Wisconsin Department of Transportation (WisDOT) is studying alternatives for improving the I-94 East-West Corridor and Stadium Interchange in the City of Milwaukee, Milwaukee County. The project length includes 2.85 miles of the Interstate 94 (I-94) freeway from N. 70th Street (west terminus) to N. 25th Street (east terminus), while the Stadium Freeway (USH 41/WIS 341) length is approximately one mile from Canal Street (south terminus) to the north end of the State Street overpass (north terminus) and is focused around the Stadium Interchange itself. The west terminus of the previously completed Marquette Interchange reconstruction was 25th Street. The I-94 east-west freeway is one of the busiest routes in southeast Wisconsin and serves a vital link to downtown Milwaukee and the western suburbs. It is part of a major east-west Interstate route serving national, regional, and local traffic for trips within and through the study area.

The I-94 East-West Corridor study area contains the following eight interchanges:

- *Service interchanges* along I-94:
  - N. 68th Street /N. 70th Street
  - Hawley Road
  - Mitchell Boulevard
  - N. 35th Street
  - N. 25th Street/N. 26th Street
- *Service interchanges* along the Stadium Freeway (USH 41 & WIS 341):
  - W. Wisconsin Avenue/W. Wells Street
  - Frederick Miller Way/Canal Street
- *System interchange*:
  - Stadium Interchange (I-94/USH 41/WIS 341)

The termini for this study match the termini for two previously completed studies of the southeast Wisconsin freeway system: the Zoo Interchange study located west of the I-94 East-West Corridor study area and the Marquette Interchange study located to the east. The east terminus of the Zoo Interchange study serves as the west terminus for the I-94 East-West Corridor study (70th Street), and the west terminus of the Marquette Interchange study serves as the east terminus (25th Street).

The project would accomplish the following:

- Maintain a key link in the local, state, and national transportation network.
- Address the obsolete design of the study-area freeway system to improve safety. This includes potentially replacing left-hand entrances and exits, and providing proper weaving distances between exit and entrance ramps.
- Replace deteriorating pavement. The original pavement from the 1960s construction is still in place. Although there have been three pavement overlays, each has a shorter life span than the previous overlay.
- Accommodate future traffic volumes at an acceptable level of service (LOS).

The existing I-94 mainline driving lanes consist of three, 12-foot lanes in each direction. Inside and outside shoulder width varies throughout the corridor. A number of alternatives are currently being investigated for the proposed roadway (for the Stadium Interchange, see exhibits 2-9 & 2-10 included with this report). In general terms, the configuration may feature six or eight lanes with the possibility of a series of collector-distributor roads at various points in the corridor that would be two or three lanes in each direction. The proposed mainline driving lanes would be 12 feet wide, although one alternative reduces these to 10-foot-lanes by the cemeteries found on either side of I-94 west of the Stadium Interchange. The proposed alignment would generally follow the existing alignment; however, one alternative shifts the alignment to the south on the east end of the project area between 27th and 35th streets. Additional right-of-way likely will be purchased in select areas along the project corridor. Given these considerations and their potential to impact the project area's setting, it was determined that the APE includes all structures fronting on and adjacent to the I-94 and Stadium Freeway corridors. (For Stadium Interchange Alternatives, see Exhibits 2-9 & 2-10 included in this report).

Note: The survey area for the Stadium Interchange portion of the project originally extended from National Avenue (south) to Lisbon Avenue (north) on the Stadium Freeway (USH 41 & WIS 341). This was later modified to the current Canal Street (south) to the north end of the State Street overpass (north) project termini points. It was decided to keep the properties that were surveyed as part of the original project scope within the survey report for future planning proposes.

2. Previously Identified/Surveyed Properties and Previous Surveys within the Area of Potential Effects (APE) - Indicate if any properties within the APE are included in the following categories (enter *None* if there are no properties in the category):

Locally designated historic sites/landmarks

NONE[1]

Properties included in the Wisconsin Inventory of Historic Places

Address	AHI	Name	Status
2455A/2455B W. Clybourn Street	120460	Peterson Tool & Machine Co.	NO LONGER EXTANT
2465 W. Clybourn Street	120459	Pabst Brewing Company bar	NO LONGER EXTANT
2504 W. Clybourn Street	120458	House	Resurveyed
305 N. 25th Street	99995	Milwaukee Spoke & Bending Co.	Not resurveyed; loss of integrity, first floor windows altered and infilled, update photo
321 N. 25th Street	99996	Smith Machine Co.	Not resurveyed; loss of integrity, window openings infilled and new fenestration, update photo
325 N. 27th Street	112261	Red Star Yeast	NO LONGER EXTANT[2]
2917 W. Mount Vernon Street	120457	House	Not resurveyed; loss of integrity, vinyl siding in gable peak; porch railings replaced, update photo
5916-18 W. Dixon Street	115360	Duplex	Not resurveyed; loss of integrity, roof pitch altered; new porch, update photo
4704 W. Lloyd Street	116500	J.K. Oberle Residence	Resurveyed
1821 N. 47th Street	114046	Theo. Grothe Residence	Resurveyed
1809-11 N. 47th Street	114047	Gustave Gottleib Residence	Resurveyed
1803-05 N. 47th Street	114048	Peter Auschwetz	Resurveyed
1743 N. 47th Street	114049	Louis Geisinger Residence	Resurveyed
944 N. 46th Street	117998	American Hair & Felt Company	Resurveyed
1128 N. 46th Street	117999	House	Not resurveyed; loss of integrity, vinyl siding installed; modern porch; window opening altered, update photo
1223-25 N. 46th Street	118162	House	Not resurveyed; loss of integrity, wide modern siding installed, update photo
1229-31 N. 46th Street	118164	House	Resurveyed
1233-35 N. 46th Street	118165	House	Not resurveyed; loss of integrity, wide modern siding installed; new upper porch railing, update photo
1239-41 N. 46th Street	118167	House	Not resurveyed; loss of integrity, new windows; new porch railing, update photo
1271-73 N. 46th Street	118171	House	Not resurveyed; loss of integrity, new porch railings, update photo

[1] Notification letters sent to the Milwaukee County Historical Society and City of Milwaukee Historic Preservation Commission by WisDOT/CH2M Hill, Inc. in June 2012. City of Milwaukee Historic Preservation Commission designated landmarks list reviewed at http://city.milwaukee.gov/hpc/LocalDesignations.

[2] The subject former Red Star Yeast/Meadow Springs Distilling Company complex is currently in the process of being razed and is approximately ninety percent demolished. Reference photographs of the remains of this facility are included with this report.

1303-05 N. 46th Street	118172	House	Not resurveyed; loss of integrity, wide modern siding installed; new upper porch railing, update photo
1307-09 N. 46th Street	118173	House	Not resurveyed; loss of integrity, vinyl siding installed; new porch railing; porch altered, update photo
1313-15 N. 46th Street	118234	House	Not resurveyed; loss of integrity, vinyl siding installed; porch altered; new upper porch railing, update photo
1317-19 N. 46th Street	118235	House	Not resurveyed; loss of integrity, vinyl siding installed; new porch railings, update photo
4550 W. Wisconsin Avenue	120403	Outdoor Displays, Inc.	Resurveyed
W. Lloyd/W. Vliet	111088	West Side Park/Washington Park	Resurveyed
W. Lloyd/W. Vliet	120123	Washington Park Bandshell	Resurveyed
W. Lloyd/W. Vliet	120124	Washington Park Statue	Resurveyed

NRHP Historic Districts: (Only buildings located in the APE are listed below. Update photos have been provided for all buildings listed below)

W. Washington/N. Hi-Mount Boulevard Historic District	**Listed NRHP 5/18/1994**	**Criteria A & C**
4701 W. Washington Boulevard	31863	Apartment Building (Non-contributing)
1701-03 N. 47th Street	223034	House (Non-contributing)

Northwestern Branch, National Home for Disabled Volunteer Soldiers HD	**Listed NRHP & NHL 6/3/2005**	**Criteria A & C**
5000 W. National Avenue	119480	Civil War Soldiers' & Sailors' Monument (Resource #120)
5000 W. National Avenue	119854	Cemetery Reception House (Resource #57)

Soldiers' Home Reef	**Listed NRHP & NHL 11/04/1993**	**Criteria A & B[3]**
NE of jct. of Wood Avenue & General Mitchell Boulevard	28217	Soldiers' Home Reef

Previous surveys within the project area

"Architecture/History Survey Report: Marquette Interchange (WisDOT #1060-05-02), City of Milwaukee." Prepared by Heritage Research, Ltd., September, 2000.

"Architecture/History Survey Report: Zoo Interchange (WisDOT #1060-33-00), Cities of Milwaukee, Wauwatosa, and West Allis." Prepared by Heritage Research, Ltd., February/March, 2007.

City of Milwaukee, Intensive Survey, 1979, 1983-84.

3. Historic Context for Project Area - Provide a brief historic context that explains development within the project area and relates to the existing built environment in the APE (use footnotes to cite sources).

The general history of the City of Milwaukee is discussed in a variety of publications, including Gregory's *History of Milwaukee* (1931), Landscape Research's *Built in Milwaukee: An Architectural View of the City* (1981) and Gurda's *The Making of Milwaukee* (1999). Briefly summarized, the present-day City of Milwaukee was settled by three land speculators, Byron Kilbourn, Solomon Juneau and George Walker; thus, three separate communities emerged around the convergence of the Menomonee, Milwaukee and Kinnickinnic Rivers. By 1846, the settlements of Kilbourntown, Juneautown and Walker's Point were incorporated as the City of Milwaukee, which within two years, had a population of 16,521. The ethnically diverse population increased nearly three-fold by 1860 and nearly quadrupled by 1890.[4]

[3] Although the Soldiers' Home Reef is not located within the Area of Potential Effects (APE), it is found within the boundary of the Northwestern Branch, National Home for Disabled Volunteer Soldiers Historic District, which is located within the APE. For this reason only, the Soldiers' Home Reef is listed above.

[4] Landscape Research, *Built in Milwaukee: An Architectural View of the City* (Milwaukee: City of Milwaukee, Department of City Development, 1981), 3, 9, 12-13.

As Milwaukee continued to grow during the twentieth century, the development and pervasive use of the automobile was problematic on city streets that had been created for nineteenth-century forms of transportation. By mid-century, traffic congestion had become a significant problem and a 1946 State Highway Commission report recommended the construction of two major expressway corridors intersecting in downtown Milwaukee. The report garnered substantial support and city residents voted to approve a $5,000,000 bond issue for the expressway project in 1948. Large amounts of state and federal funds also supported what would become the largest public works project in city history. Construction began in March 1952 with the first segment dedicated in January 1962, which included I-94 east/west between 13th and 68th streets and the Stadium Freeway between Wisconsin and National avenues. The I-94 east/west route instantly became the busiest highway in the state and construction plans expanded to include 80.3 miles of expressway by 1967.[5]

Originally planned to extend north into Ozaukee County, the Stadium Freeway, which terminated at Lisbon Avenue, and its interchange with I-94 were opened in 1962. As highway construction generally became more contentious in the late-1960s and early-1970s, plans to extend the Stadium Freeway were cancelled in 1974. From 1996 to 1998, that portion of the Stadium Freeway south of I-94 terminating at National Avenue was reconstructed to accommodate the construction of Miller Park. This reconstruction moved the roadway, currently referred to as "Miller Park Way," to the east around the footprint of the new ballpark.[6]

4. Physical Setting - Briefly describe the overall physical setting of surveyed properties. The description should include a discussion of the following issues as they relate to the findings of the survey: existing and historical land uses, density of development, settlement patterns and general types of properties identified in the APE.

The area surrounding the I-94 east/west corridor from 25th to 70th streets and the Stadium Freeway from Canal Street to the north end of the State Street overpass is urban and generally flat. Miller Park, home of the Milwaukee Brewers, is found in the southwest quadrant of the junction of these corridors, which is referred to as the Stadium Interchange. The vicinity around these corridors includes residential, commercial and industrial resources, many of which are a century old.

Along I-94 east of the Stadium Interchange the corridor is generally characterized with residential development north of the freeway and industry to the south. Residences are generally one-and-one-half to two-and-one-half-stories in height and date to the late nineteenth and early twentieth centuries. Many of them have been modified over the years with new siding, new porches and altered windows. A modern, multi-story apartment building is located by 33rd Street. To the south, a railroad line parallels I-94. The former Red Star Yeast complex located between 26th and 29th streets is currently in the process of being razed. Further west, the large Falk Corporation complex occupies the area between 27th and 33rd streets; however, it is found south of the rail line and is outside the Area of Potential Effects. Modern commercial and light industrial buildings are located west of 35th Street and are bordered on their west by Miller Park's asphalt surface lots found within the area of the Stadium Interchange.

A number of asphalt surface lots are located in each quadrant surrounding the Stadium Interchange providing parking for Miller Park. Residential development is found beyond the surface lots in the northwest and northeast quadrants. To the northwest is the Story Hill neighborhood consisting of three, contiguous, separate developments that were built spanning the decades of the 1910s to the 1950s. Generally, one-and-one-half to two-and-one-half-stories in height, houses within Story Hill exhibit a number of exterior sheathing materials including brick, stone-veneer, clapboard and modern sidings. The residential area beyond the surface lot in the northeast quadrant is much smaller and focused around Clybourn and N. 45th streets. Also featuring one-and-one-half to two-and-one-half-story homes, these houses lack the integrity of the Story Hill neighborhood residences as they exhibit modern siding materials and window alterations.

Directly west of the Stadium Interchange, Wood National Cemetery, part of the National Historic Landmark-listed Northwestern Branch, National Home for Disabled Volunteer Soldiers Historic District, borders I-94 on both the north and south. Continuing further west, Beth Hamedrosh Hagodel Cemetery and Spring Hill Cemetery also border I-94 on the north and south, respectively. Beyond these cemeteries, the project area features residential development predominantly characterized by early-to-mid-twentieth-century, one-to-two-and-one-half-story, frame houses. Many of these residences exhibit alterations including modern siding and fenestration. An electrical transformer station and modern Girl Scouts of Wisconsin building are found at the west end of the survey area.

During the course of survey field work, a potential historic district was identified consisting of the original Story Hill development bounded by W. Wisconsin Avenue on the north, W. Blue Mound Road on the south, N. 51st Street on the west, and N. Story Parkway on the east. A Determination of Eligibility was completed for this district. No other historic districts were identified in the survey area.

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[5] John Gurda, *The Making of Milwaukee* (Milwaukee: Milwaukee County Historical Society, 1999), 331-35.

[6] Christopher J. Bessert, *Wisconsin Highways website: www.wisconsinhighways.org*, Accessed 14 May 2012.

5. Methodology - Briefly describe the steps taken to identify and evaluate historic properties within the APE, including a brief summary of research efforts and an explanation for how you developed a threshold for survey based on the physical context of the survey area.

Research for this project included an examination of the Wisconsin Historic Preservation Database (WHPD) for previously surveyed properties. Previous surveys – including the Architecture/History Survey Report for the Marquette Interchange (WisDOT #1060-05-02) – were reviewed. As well, City of Milwaukee Historic Preservation Department staff were consulted for their familiarity with the survey area and, specifically, the proposed Story Hill Residential Historic District for which a Determination of Eligibility was completed. Fieldwork was conducted and both the Milwaukee Public Library Humanities Room and Milwaukee County Historical Society Research Library were consulted for information. Original building permits, available at the City of Milwaukee Department of City Development, and city directories were reviewed for building construction dates and ownership information.

6. Bibliography - List sources consulted.

Anderson, Harry H., and Frederick I. Olson. *Milwaukee, At the Gathering of the Waters*. Tulsa, OK: Continental Heritage Press, 1981.

Assessor's records, City of Milwaukee. Website: http://gis.milwaukee.gov/website/mm1/viewer.htm. Accessed 25 June 2012.

Baist, William G., ed. *Baist's Property Atlas of Milwaukee and Vicinity*. Philadelphia: Baist, 1898.

"Badger State Bank." Determination of Eligibility Form. Prepared by Traci E. Schnell for Edwards & Associates, Inc., Milwaukee (August 1999).

Bessert, Christopher J. *Wisconsin Highways website: www.wisconsinhighways.org*. Accessed 14 May 2012.

Bruce, William G. *History of Milwaukee City and County*. 2 vols. Chicago: S. J. Clarke Publishing Company, 1922.

Building permits. See individual footnotes for specific citations. On file at the Department of City Development, City of Milwaukee, 809 N. Broadway (First Floor), Milwaukee, WI.

Cohen, Leon. "New Mausoleum Nears Completion at Spring Hill." *The Wisconsin Jewish Chronicle*, 13 June 2003.

Flower, Frank A. *History of Milwaukee, Wisconsin*. Chicago: The Western Historical Society, 1881.

Gregory, John G. *History of Milwaukee, Wisconsin*. 4 vols. Chicago: S.J. Clarke Publishing Company, 1931.

Gurda, John. *The Making of Milwaukee*. Milwaukee: Milwaukee County Historical Society, 1999.

"Kilbourn State Bank Building." Final Historic Designation Study Report. Prepared by Carlen Hatala, City of Milwaukee Department of City Development, Historic Preservation Office, August 1999.

Landscape Research. *Built in Milwaukee: An Architectural View of the City*. Milwaukee: City of Milwaukee, Department of City Development, 1981.

Milwaukee Historic Ethnic Architecture Resources Study: Final Report. Prepared by Historic Preservation staff, Les Vollmert, Paul Jakubovich and Carlen Hatala. Milwaukee: City of Milwaukee, Department of City Development, August 1994.

Property records, City of Milwaukee. Wisconsin Historic Preservation Database (WHPD). Maintained by the Wisconsin Historical Society – Division of Historic Preservation, Madison, WI. See individual footnotes for specific citations.

"Prospect Avenue Apartment Buildings Historic District." National Register nomination. Prepared by Les Vollmert/Carlen Hatala for the Department of City Development, Milwaukee (23 February 1989).

Rascher's Fire Insurance Atlas of the City of Milwaukee, Wis. Chicago: Western Fire Map Pub. Co., 1876, 1888.

"Roosevelt Theater." Determination of Eligibility Form. Prepared by Traci E. Schnell for Graef, Anhalt, Schloemer and Associates, Inc., Milwaukee (November 2003).

Sanborn Map Company. *Sanborn Fire Insurance Map – Milwaukee, Wisconsin.* New York: Sanborn Map Company, various years cited.

Schmid, George C. *Of Sixty Years – and Sixty Centuries: A History of the Red Star Yeast and Products Company and A Story of Yeast.* Milwaukee: Red Star Yeast and Products Company, 1942.

Schuman, Michael. Executive Director of Spring Hill Cemetery. Conversation with Michael T. McQuillen, 7 January 2013. Notes on file at Heritage Research, Ltd., Menomonee Falls, WI.

"Third District Police Station." Preliminary Historic Designation Study Report. Prepared by City of Milwaukee Department of City Development, Historic Preservation Office, 2000.

Wright's City of Milwaukee Directory. Milwaukee: Wright Directory Company, various years referenced. See individual footnotes for specific citations.

Wyatt, Barbara, ed. *Cultural Resource Management in Wisconsin.* 3 vols. Madison: State Historical Society of Wisconsin, Historic Preservation Division, 1986.

Zimmermann, H. Russell. *The Heritage Guidebook: Landmarks and Historical Sites in Southeastern Wisconsin*. Milwaukee: Heritage Banks, 1978.

ARCHITECTURE/HISTORY SURVEY
WORKSHEET B

1. Survey Results – For each surveyed property in the APE, provide a brief description, relevant property-specific history, a statement of significance that addresses both the applicable National Register Criteria and integrity, and a National Register eligibility recommendation. Complete the formatted heading for each surveyed property. Copy and paste the formatted heading if you have additional properties.

STADIUM FREEWAY RESOURCES:

Address	AHI #	NRHP Evaluation
607 N. Story Parkway	221926	Potentially Eligible

Description

This one-and-one-half-story, brick, Tudor Revival style residence is composed of a diminutive round entrance tower located at the intersection of gabled blocks. Topped with a conical roof, the tower features a round-arched entrance with a rough-cut limestone surround. To the left of the entrance is a large window opening containing four, leaded-glass, casement windows resting on a brick sill. This fenestration pattern is repeated throughout the residence. A round-arched opening projecting from the side (east) elevation features rough-cut limestone above the springing line of the arch and leads to the rear portion of the property. A garage wing projects from the rear elevation.

Statement of Significance

Built in 1926 at an approximate cost of $9000 by contractor James N. Hausmann, this residence was originally owned by Charles A. Harris and his wife Margaret. Charles worked as a general superintendent with the J. N. Hausmann firm.[1]

No evidence was found to suggest eligibility under Criteria A and B. However, in terms of Criterion C, the subject residence was previously identified, in 1979, as part of a potential historic district within the Wisconsin Historic Preservation Database (WHPD). This district consisted of the original Story Hill Subdivision, which was platted in May 1911 and largely developed during the 1910s and 1920s. The district possesses a significant concentration of Craftsman, Arts and Crafts, and Colonial Revival-style residences, many of which were designed by Milwaukee architects. City of Milwaukee Historic Preservation Office staff were consulted and they reconfirmed their belief that a residential historic district existed. As well, representative photographs of the district, a sketch map with preliminary boundaries and a completed Historic District Section of the Architecture/History Survey Worksheet B was shared with WisDOT EES staff who confirmed the need for a DOE for the district (see correspondence with City of Milwaukee Historic Preservation Office staff and WisDOT EES staff attached at the end of this document). **A DOE for the historic district is needed.**

Address	AHI #	NRHP Evaluation
4715 W. Vliet Street	221927	Potentially Eligible

Description

This two-story, flat-roofed, brick building rests on a raised, limestone foundation. The building features modest Art Deco style characteristics including inset limestone panels located above second floor windows on the primary (north) and side elevations. As well, an additional panel is found at the apex of the projecting central entrance bay, which is framed by fluted limestone pilasters. The building features a symmetrical arrangement of window openings that contain one-over-one, modern fenestration on the first floor and six-over-six, double-hung, wooden sash windows on the second floor. An attached, one-story, brick garage is located on the rear (south) elevation.

Statement of Significance

Designed by Charles E. Malig, the Third District Police Station was built in 1937. Originally referred to as the West Side Station, the Third District was established as one of the city's early branch police stations (the other, the Second District, was located on Milwaukee's South Side). The subject building was the fourth Third District facility built by the city and, although it was recently

[1] Original building permit, 607 N. Story Parkway, 14 May 1926, On file at the Department of City Development, City of Milwaukee, 809 N. Broadway (First Floor), Milwaukee, WI; *Wright's City of Milwaukee Directory* (Milwaukee: Wright Directory Company, 1927).

replaced by a newer Third District Police Station located on N. 49th Street, it continues to house part of the Milwaukee Police Department (namely, the Neighborhood Task Force). The subject building is the oldest branch station still in use by the Milwaukee Police Department. Charles Malig served for 38 years as a staff architect for the City of Milwaukee's Department of Buildings and Bridges. During his career he also designed Milwaukee's South View Hospital (1924) and Johnston Emergency Hospital (1930) located at 2320 W. Mitchell Street and 1230 W. Grant Street, respectively. As well, many of the police and fire stations built or remodeled in the city from 1911 to 1949 can be credited to him. Malig utilized a restrained example of the Art Deco style in his design for the Third District Police Station. Popular in Wisconsin from 1925 to 1945, characteristics of the style found on the subject building are its low-relief, carved limestone panels featuring a floral design and the fluted limestone pilasters framing the central entrance bay.[2]

No evidence was found to suggest eligibility under Criterion B. In terms of Criteria A & C, a Historic Designation Study Report was prepared by City of Milwaukee Historic Preservation Office staff in 2000. Noting that "no major events in the history of the police department or city government occurred [at the subject building],"[3] the study report focused on the building's Art Deco style and the fact that it is the oldest branch station still used by the Milwaukee Police Department. The Milwaukee Historic Preservation Commission denied local designation. Included within the original survey area, this property is no longer within the Area of Potential Effects (APE) due to later modifications to the Stadium Interchange portion of the project. Although it may be potentially eligible, **a DOE is not recommended** since it is currently located outside the APE. If project plans were to change, the need for a DOE should be reassessed.

Address	**AHI #**	**NRHP Evaluation**
1421 N. 47th Street	221928	Not Eligible

Description

This one-and-one-half-story, stucco-sheathed bungalow is topped with a side-gabled roof. The primary (east) elevation features a central entrance with sidelights. First-floor, round-arch window openings contain spandrel panels within the arch. A shed-roof dormer spans the upper floor. Fenestration consists of original, multi-light, wooden sash windows.

Statement of Significance

Dating to 1920, the subject house was built by carpenter-contractor William F. Johnson for owner George Thomas and his wife Augusta. At the time, George was employed as a packer.[4]

No evidence was found to suggest eligibility under Criterion A or B. Regarding Criterion C, this relatively intact residence does not possess elements of any particular architectural style and is not a distinctive example of a bungalow. **A DOE is not needed.**

Address	**AHI #**	**NRHP Evaluation**
1451 N. 47th Street	221930	Not Eligible

Description

This one-and-one-half-story, Tudor Revival style, brick-veneered residence has a front-gabled roof with a side-gabled wing. Tudor Revival characteristics include the building's projecting, front-gabled, entrance wing that features a round-arched doorway containing a wooden door with decorative strap hinges. This entrance wing is trimmed with rough-cut, limestone blocks and has fixed sash, leaded-glass windows on each side of the doorway. Fenestration consists of original multi-light, leaded-glass, double-hung, wooden sash windows.

Statement of Significance

This residence was built for owners Joseph R. and Fannie Werner in 1930 at an approximate cost of $5800. Joseph worked as a toolmaker.[5]

[2] "Third District Police Station," Preliminary Historic Designation Study Report, Prepared by City of Milwaukee Department of City Development, Historic Preservation Office, 2000, 2-5.

[3] Ibid., 4.

[4] Original building permit, 1421 N. 47th Street, 23 July 1920; *Wright's City of Milwaukee Directory*, 1922.

[5] Original building permit, 1451 N. 47th Street, 6 September 1930; *Wright's City of Milwaukee Directory*, 1931.

No evidence was found to suggest eligibility under Criteria A and B. Although featuring a gabled entrance wing with a round-arched doorway typical of the Tudor Revival style, the subject residence is a modest example of the style and not a significant and distinguishable entity; especially given the broad context of comparable examples in Milwaukee. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1503 N. 47th Street	221931	Not Eligible

Description

Resting on a stuccoed raised basement, this two-story, Craftsman style residence is sheathed with board siding on the first floor and wooden shingles on the upper floor. A right-of-center, one-story, stuccoed porch is located on the primary (east) facade. Topped with a hipped roof, the porch features exposed rafter tails and Craftsman-style decorative brackets. A gabled wall dormer also projects from the primary elevation. Fenestration consists of original multi-light and one-over-one, double-hung, wooden sash windows.

Statement of Significance

Designed by architect Frank W. Andree, this residence was constructed in 1910 at an approximate cost of $6000. Although Mrs. Laura Kiefer is listed on the original building permit, she resided on Milwaukee Street where she operated a bird hospital. Frederick J. Kiefer, presumably a relative of Laura, originally occupied the subject house. Frederick worked as a claim agent and, later, a private detective. In 1922, detective Arthur J. Burns and his wife Elizabeth owned the home. The garage was built in 1923. After working in the architectural offices of Edward Townsend Mix & Company and partnering in the firm Van Ryn, Andree & Lesser, Milwaukee architect Frank Andree formed his own independent practice in 1893. Stylistically, he was most proficient in Colonial Revival and Queen Anne residential interpretations; however, his body of work included a variety of other examples that were designed for both large-scale developers and private individuals. Andree continued to practice architecture into the early 1940s.[6]

No evidence was found to suggest eligibility under Criterion A or B. Regarding Criterion C, the residence exhibits those features typically associated with the Craftsman style – notably, exposed rafter tails and decorative brackets. However, it is not a distinctive example of the style given the significant number of Craftsman style buildings within the city. As well, it is not eligible as an example of Frank Andree's work. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1509 N. 47th Street	221932	Not Eligible

Description

This one-story, brick-veneered bungalow is topped with a hipped roof. A hipped roof entrance wing projects from the primary (east) façade. This elevation features two groups of four, tall, leaded-glass, wooden sash windows, as well as an eyebrow window piercing the roof. A one-story bay and hipped-roof dormer on the side (south) elevation are sheathed with aluminum siding.

Statement of Significance

This residence was built in 1925 for owners Hugo and Tess Kreiter at an approximate cost of $7000. Hugo was employed as a salesman with Cudahy Bros. Company, beef and pork packers.[7]

No evidence was found to suggest eligibility under Criteria A and B. In terms of Criterion C, the subject bungalow does not exhibit notable stylistic elements and features aluminum siding on its bay and dormer. **A DOE is not needed.**

[6] Original building permit, 1503 N. 47th Street, 4 August 1910; *Wright's City of Milwaukee Directory*, 1911, 1912, 1922; "Kilbourn State Bank Building," Final Historic Designation Study Report, Prepared by Carlen Hatala, City of Milwaukee Department of City Development, Historic Preservation Office (August 1999), 5.

[7] Original building permit, 1509 N. 47th Street, 31 August 1925; *Wright's City of Milwaukee Directory*, 1927.

Address	AHI #	NRHP Evaluation
1545 N. 47th Street	221933	Not Eligible

Description

Resting on a brick foundation, this two-story, gabled residence features a two-story entrance tower. The tower has a pyramidal roof with decorative brackets under the eaves. The building exhibits aluminum siding on its first floor and asbestos shingle siding on the upper floor and within the gables. The primary (east) elevation features a mid-twentieth-century metal porch. Original fenestration consists of tall, wooden sash windows with leaded-glass upper sash.

Statement of Significance

Built by carpenter-contractor Frank Barnekow, the subject residence was constructed in 1916 for approximately $2200. The first known occupants of the home were Elliott J. and Hannah Weller in 1920. Elliott worked as a salesman with the A. Geo. Schultz Company, manufacturer of boxes, cartons and containers. In 1958, the front porch was replaced and the first story was sided with aluminum siding.[8]

No evidence was found to suggest eligibility under Criterion A or B. The modern siding materials and porch negatively affect the building's integrity and preclude eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1551-53 N. 47th Street	221937	Not Eligible

Description

This one-and-one-half-story bungalow has a clipped, side-gabled roof. The building features a brick-veneered first floor and wooden shingles sheathing its upper floor. A one-story, gabled entrance wing projects from the primary (east) façade. This elevation also features a large, clipped, front-gabled dormer sheathed with wooden shingles. Both the first floor and dormer contain banks of five, double-hung, wooden sash windows with leaded-glass upper sash.

Statement of Significance

This bungalow was built in 1925 at an approximate cost of $5000. Although Mrs. Amanda Heth is listed on the building permit, there is no evidence that she lived in the subject house. Theodore and Anna Winters were the original occupants and, in 1927, they received a permit to convert the home into a two-family flat. Theodore was employed as foreman with the L. J. Mueller Furnace Company. Charles M. Hazard, the other resident of the building following its conversion, worked as a salesman with the Sentinel Company.[9]

No evidence was found to suggest eligibility under Criterion A or B. In terms of Criterion C, the subject bungalow does not exhibit stylistic elements or any distinctive characteristics that would indicate potential eligibility for architecture. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1629-35 N. 47th Street	221940	Not Eligible

Description

This two-story, hipped-roof, brick-veneered building features a one-story, flat-roofed wing on its east elevation. Located on the south façade, the entrance is sheltered by a porch featuring a flared segmental hood supported by two Doric columns. The porch railings, steps and decking are modern. A two-story, vinyl-sided wing projects from the rear (west) elevation. Building fenestration appears to predominantly consist of original, double-hung, wooden sash windows with leaded-glass upper sash.

[8] Original building permit, 1545 N. 47th Street, 29 November 1916; *Wright's City of Milwaukee Directory*, 1918, 1920, 1922.

[9] Original building permit, 1551-53 N. 47th Street, 19 August 1925; *Wright's City of Milwaukee Directory*, 1927, 1928.

Statement of Significance

Owned by mechanical engineer Nels Sjobring and his wife Pearl, this residence was constructed as a two-family home in 1924. The other occupant of the building at that time was Theodore Squire who was employed by the A. O. Smith Corporation as a physician. In 1951, the building was converted to feature four residential units.[10]

No evidence was found to suggest eligibility under Criteria A and B. Although the building possesses modest classical features in terms of its porch with segmental hood and Doric columns, it is not a significant or distinguishable example of the Colonial Revival style. As well, its modern porch railings and vinyl-sided rear wing negatively affect the building's integrity. There is no potential eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1717 N. 47th Street	221941	Not Eligible

Description

Resting on a rusticated, concrete block foundation, this one-and-one-half-story, Craftsman style bungalow exhibits board siding on its first floor and wooden shingles on the upper floor. The residence is topped with a side-gabled roof featuring exposed rafter tails. The roof shelters an enclosed porch on the primary (east) façade. This porch is framed by two, tapered brick piers and contains leaded-glass windows, transoms and a leaded-glass door with sidelights. A gabled dormer is located above the porch.

Statement of Significance

Constructed in 1919 by carpenter-contractor William Hoffman, this bungalow was the home of Emil H. Hebenstreit. Emil served as president and owner of Hebenstreit & Bartelt Company, makers of parlor furniture. The Hebenstreit & Bartelt factory consisted of a single building located on Vliet Street in Milwaukee. The garage was also built in 1919.[11]

No evidence was found to support eligibility under Criterion A or B. The residence exhibits features typically associated with the Craftsman style – notably, exposed rafter tails and tapered porch piers. However, it is not a distinctive example of the style given the significant number of Craftsman style buildings within the City of Milwaukee. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1727-29 N. 47th Street	221942	Not Eligible

Description

This two-and-one-half-story, front-gabled, brick residence with Colonial Revival attributes has a one-story, flat-roofed porch on its primary (east) façade. The porch features square, brick posts with limestone capitals and an original iron railing. An additional railing is found on the porch roof. Wooden shingles sheath the gable, which contains a recessed window opening with a classically inspired surround. Fenestration appears to consist of original wooden sash windows with window openings featuring limestone sills and windows.

Statement of Significance

Designed by the Wolff & Evens firm, the subject two-family residence was built in 1908 for owner Max Buechner. Buechner was employed as a "commercial traveler" (salesman). In 1922, Erick and Eline Hagberg occupied the home. Erick was a mechanical engineer with the A. O. Smith Corporation, manufacturers of automobile frames. Architect August Wolff was born in Germany and immigrated to the United States as a boy. After working as a carpenter-contractor until 1920, he obtained his state architects license. Specializing in designing neighborhood movie theaters, as well as residences and small commercial buildings, Wolff disappears from the Milwaukee City Directory in 1932.[12]

[10] Original building permit, 1629-35 N. 47th Street, 9 April 1924; *Wright's City of Milwaukee Directory*, 1925.

[11] Original building permit, 1717 N. 47th Street, 31 March 1919; *Wright's City of Milwaukee Directory*, 1920, 1922.

[12] Original building permit, 1727-29 N. 47th Street, 23 May 1908; *Wright's City of Milwaukee Directory*, 1910, 1922; "Roosevelt Theater," Determination of Eligibility form, Prepared by Traci E. Schnell for Graef, Anhalt, Schloemer and Associates, Inc., Milwaukee (November 2003), 9.

No evidence was found to support eligibility under Criteria A and B. Although the residence features a good degree of integrity and exhibits some classical features, including its porch posts and gable window surround, it is not a significant and distinguishable entity as an example of the Colonial Revival style. As a result, it is not potentially eligible under Criterion C and **a DOE is not needed.**

Address	AHI #	NRHP Evaluation
1735-37 N. 47th Street	221943	Not Eligible

Description

This two-and-one-half-story, front-gabled, aluminum-sided house contains wooden shingles within the gable. A one-story, one-bay porch on the primary (east) elevation features decorative exposed roof beams under the eaves. A two-story bay is found to the left of the porch. Window openings within the gable have been infilled with vents and are topped with a bracketed hood. Fenestration appears to consist of original, wooden sash windows.

Statement of Significance

Built by carpenter-contractor William Hoffman, the subject residence was constructed in 1913-14 for approximately $4200. Although Frank Stanek is listed as owner on the building permit, directories indicate that he lived on 3rd Avenue and was employed as a carpenter. The first known occupants of the house were Edward & Frances Junek in 1916. Edward worked as foreman of the Mayhew Company, manufacturers of high-grade living room furniture.[13]

No evidence was found to support eligibility under Criterion A or B. The residence's modern siding and infilled gable window openings negatively affect its integrity and preclude eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1743 N. 47th Street	114049	Not Eligible

Description

Topped with a hip roof, this two-story, Craftsman style residence has stucco on its first floor and wooden shingles sheathing its upper floor. The roof features exposed rafter tails, as do the dormer roofs. A one-story, flat-roofed, stucco porch with square wooden posts spans the primary (east) façade. This façade also features a two-story bay, while a squared bay is located on the side (north) elevation. Fenestration predominantly consists of one-over-one, double-hung, wooden sash windows with six-over-one examples in the dormers. The chimney has been truncated since it was last surveyed in 1979.

Statement of Significance

This house was built by carpenter-contractor Louis H. Geisinger as his own residence in 1910. Lawyer Albert M. Kelly and his wife Frances owned the property in 1922. In 1943 a permit was granted to convert the building from a single-family dwelling to a two-family flat; however, it is currently a single-family residence.[14]

No evidence was found to suggest eligibility under Criteria A and B. The residence exhibits features typically associated with the Craftsman style – notably, exposed rafter tails and a combination of stucco and wood shingle sidings. However, it is not a distinctive example of the style given the significant number of Craftsman style buildings within the City of Milwaukee. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1803-05 N. 47th Street	114048	Not Eligible

Description

Resting on a brick foundation, this two-and-one-half-story, vinyl-sided, cross-gabled house features wooden shingles within the gables, which are supported by decorative knee braces. A one-story, flat-roofed porch featuring brick posts with modest limestone decoration is found on the primary (east) facade. The porch retains its original wooden railing with turned balusters. This elevation also features a two-story bay. Triple windows located within the gables exhibit classically inspired surrounds framed by fluted pilasters and topped with broken pediments with urns. Vinyl siding has been installed from the time when it was last surveyed in 1979.

[13] Original building permit, 1735-37 N. 47th Street, 20 November 1913; *Wright's City of Milwaukee Directory*, 1914, 1916, 1922.

[14] Original building permit, 1743 N. 47th Street, 5 August 1910; *Wright's City of Milwaukee Directory*, 1911, 1922.

Statement of Significance

Constructed in 1911, the subject duplex was designed by architect Theodore Schultz (Schutz) for salesman Peter Anschuetz and his wife Ida. The Anschuetzes continued to live in the home into at least the early 1920s, at which time the residence was also occupied by salesman Emil Held and his wife Eleanor. No solid biographical information could be found on Schultz, although he is known to have previously designed Milwaukee residences located on N. 44th Street and E. Kenwood Boulevard.[15]

No evidence was found to suggest eligibility under Criterion A or B. Although the building features both Craftsman and Colonial Revival style elements (e.g. knee braces and classically inspired surround in the gable, respectively), it is not a distinctive example of either architectural style. As well, the installation of vinyl siding since it was last surveyed negatively affects its integrity. As a result, the subject residence is not potentially eligible under Criterion C and **a DOE is not needed.**

Address	AHI #	NRHP Evaluation
1809-11 N. 47th Street	114047	Not Eligible

Description

This two-and-one-half-story, front-gabled duplex is sheathed with vinyl siding. The primary (east) façade features a one-story, flat-roofed porch. The porch has tapered wooden posts resting on squared, brick bases and modern metal railings. The gabled uppermost floor projects beyond the primary elevation and is supported by decorative knee braces. It features a recessed window opening with a classically inspired surround consisting of diminutive Ionic columns and fluted pilasters. Fenestration consists of one-over-one, double-hung windows. Vinyl siding has been installed since it was last surveyed in 1979.

Statement of Significance

This two-family residence was built in 1910 by carpenter-contractor John E. Dirk for carpenter Gottlieb Gust. Gust continued to live in the home into the 1920s, at which time the other unit was occupied by clerk Joseph Pokorny and his wife Rose.[16]

No evidence was found to suggest eligibility under Criteria A and B. Its modern porch railings, as well as the installation of vinyl siding since it was last surveyed in 1979, negatively affect the building's integrity and preclude eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1821 N. 47th Street	114046	Not Eligible

Description

This two-story, brick-veneered apartment building is topped with a hipped roof featuring a gabled dormer. A one-story, central entrance wing projects from the primary (east) elevation. A modern wooden railing is found atop the entrance wing. Building fenestration consists of original, four-, six- and eight-over-one, double-hung, wooden sash windows that rest on limestone sills. Since it was last surveyed in 1979, the entrance wing porch railings have been replaced.

Statement of Significance

Designed by architect John Roth Jr., this four-unit apartment building was built for owner Theodore F. Grothe and his wife Anna in 1914. Theodore was employed as an accountant and, later, as an office manager with Doelger & Kirsten, manufacturers of alligator shears. The Grothes continued to occupy a unit in the building into at least the early 1920s. The other apartment residents at that time were: accountant Freeman Guerin and his wife Doris; National Brake & Electric Company storekeeper Fred Gumz and his wife Adele; and Alfred and Celia Kaad. Alfred worked as office manager with Schuefer Bros. tires. The Wisconsin Historic Preservation Database (WHPD) reveals that John Roth, Jr. designed a number of other houses, as well as a church, theater and bank in the City of Milwaukee. In 1914, Roth operated his business out of his home on Locust Street.[17]

[15] Original building permit, 1803-05 N. 47th Street, 19 May 1911; *Wright's City of Milwaukee Directory*, 1911, 1922.

[16] Original building permit, 1809-11 N. 47th Street, 4 April 1910; *Wright's City of Milwaukee Directory*, 1911, 1922.

[17] Original building permit, 1821 N. 47th Street, 22 June 1914; *Wright's City of Milwaukee Directory*, 1914, 1916, 1922.

No evidence was found to suggest eligibility under Criterion A or B. Regarding Criterion C, the apartment building does not embody characteristics of any particular architectural style. As well, its entrance wing porch railings have been replaced since it was last surveyed in 1979. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1921 N. 47th Street	221946	Not Eligible

Description

This two-story, Craftsman style, side-gabled residence is sheathed with wooden shingles. An enclosed, one-story, brick porch spans the primary (east) façade. The porch features leaded-glass, wooden sash windows resting on a continuous limestone sill, as well as a wooden railing on its roof. A gabled wall dormer containing three windows is located above the porch.

Statement of Significance

Owner Levi S. Mattoon and his wife Nellie had the subject residence built in 1919-20 at an approximate cost of $7500. Levi served as vice-president of the American Royalty Petroleum Company. The garage was constructed in 1927.[18]

No evidence was found to suggest eligibility under Criteria A and B. In terms of Criterion C, the residence is a modest example of the Craftsman style lacking many of its typical decorative architectural features (e.g. decorative beams, exposed rafter tails, and knee braces). It does not possess potential eligibility for architectural significance and **a DOE is not needed.**

Address	AHI #	NRHP Evaluation
2001-03 N. 47th Street	221947	Not Eligible

Description

This one-and-one-half-story, Craftsman-style, brick-veneered, front-gabled house features large windows on its primary (east) façade trimmed with rough-cut limestone. A one-story, left-of-center entrance wing projects from this elevation. This wing features wooden sash windows with transoms, as well as a hipped roof with exposed rafter tails. A one-and-one-half-story, side-gabled wing slightly projects from the side (north) elevation.

Statement of Significance

The subject bungalow was built in 1919 by carpenter-contractor William Hoffman for owners Theodore and Margaret Richter. Theodore owned a real estate, loans and insurance firm. In 1934, the house received its brick veneer.[19]

No evidence was found to suggest eligibility under Criterion A or B. The residence exhibits modest features typically associated with the Craftsman style – notably, exposed rafter tails. However, it is not a distinctive example of the style given the significant number of Craftsman style buildings within the City of Milwaukee. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
2007 N. 47th Street	221948	Not Eligible

Description

Sheathed with asbestos shingles, this two-story, side-gabled residence has an asymmetrical primary (east) façade. An enclosed, one-story, left-of-center entrance wing projects from this elevation. This brick entrance wing is topped with a hipped roof. A one-story bay with a pent roof is located to the right of the wing, while a cross-gabled dormer is located on the second level of the primary façade. The side (north) elevation features a one-story, shed-roof bay and an exterior chimney. Fenestration predominantly consists of original, double-hung, wooden sash windows, some of which feature leaded glass.

[18] Original building permit, 1921 N. 47th Street, 8 December 1919; *Wright's City of Milwaukee Directory*, 1922.

[19] Original building permit, 2001-03 N. 47th Street, 29 July 1919; *Wright's City of Milwaukee Directory*, 1920, 1922.

Statement of Significance

Built in 1921 at an approximate cost of $8000 by contractor William C. Keller, this residence was originally owned by Frank W. Ehlert and his wife Amanda. Frank worked as a salesman with the Phoenix Manufacturing Company, makers of hosiery, underwear and other similar products. In 1952, the house was resided with asbestos shingles.[20]

No evidence was found to suggest eligibility under Criteria A and B. While possessing Craftsman style massing, the residence lacks architectural features of the style. As well, its asbestos shingle siding is not original and negatively affects the building's integrity precluding eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
2163-65 N. 47th Street	221949	Not Eligible

Description

Resting on a rusticated concrete block foundation, this two-and-one-half-story, front-gabled, vinyl-sided duplex has a one-story bay on the primary (east) façade. This bay features leaded-glass, wooden sash windows. A recessed window opening is found within the gable. Fenestration appears to predominantly consist of original, wooden sash windows.

Statement of Significance

Carpenter-contractor Wesley E. Drescher built the subject two-family house as his residence in 1911. By 1918, Salesman William A. Kuter and his wife Minnie owned and occupied the home and they remained there into at least the early 1920s. At that date, salesman Harry J. Bernstein and his wife Enid lived in the other unit. City permits indicate that the roof was damaged by fire in 1934. As well, the one-story bay was constructed on the primary façade in that year.[21]

No evidence was found to suggest eligibility under Criterion A or B. In terms of Criterion C, the residence is not representative of any particular architectural style. As well, its modern vinyl-siding negatively affects its integrity. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
2167-69 N. 47th Street	221950	Not Eligible

Description

This two-and-one-half-story, front-gabled, clapboard-sided duplex features wooden shingles in the gable. A one-story, flat-roofed porch spans the primary (east) façade. The porch is composed of wooden posts resting on rusticated concrete block bases, modern railings and exhibits decorative exposed beams under its eaves. The primary elevation also features a two-story, left-of-center bay. A recessed window opening is found within the gable.

Statement of Significance

This two-family residence was built in 1910 for Richard and Emma Schultrich. Richard was employed as an upholsterer and the couple remained in the house until at least the early 1920s. At that time, salesman Conrad O. Collipp and his wife Dorothy occupied the other unit. Otto J. Steuerwald was the carpenter and the house's cost of construction was approximately $4000.[22]

No evidence was found to suggest eligibility under Criterion A or B. Regarding Criterion C, the residence is not representative of any particular architectural style. **A DOE is not needed.**

[20] Original building permit, 2007 N. 47th Street, 15 September 1921; *Wright's City of Milwaukee Directory*, 1922.

[21] Original building permit, 2163-65 N. 47th Street, 5 May 1911; *Wright's City of Milwaukee Directory*, 1912, 1922.

[22] Original building permit, 2167-69 N. 47th Street, 23 March 1910; *Wright's City of Milwaukee Directory*, 1911, 1922.

Address	AHI #	NRHP Evaluation
2177-79 N. 47th Street	221951	Not Eligible

Description

This two-and-one-half-story, brick, front-gabled duplex features a one-story, flat-roofed porch spanning the primary (east) façade. The brick porch exhibits tapered, wooden posts. The primary elevation also features a two-story, left-of-center bay and stucco within the gable. Fenestration predominantly consists of one-over-one, double-hung windows, although a grouping of three, twenty-over-one, double-hung, wooden sash windows is found within the gable.

Statement of Significance

Designed by William R. Brockman, this house and the neighboring property (2183 N. 47th) were constructed for owner John Belohlav. Listed as a tailor in city directories, Belohlav presumably built them as investment properties as his residence was located on the same block of 47th Street. The subject house was constructed in 1909 and the earliest known occupants were John & Charlotte Rauwald and Jesse & Louise Bates in 1922. John worked as a draftsman with the A. F. Meckelburg Sash & Door Company, while Jesse was a designer with the A. O. Smith Corporation. City directories list William Brockman as a draftsman with the Pabst Brewing Company. The only building in the Wisconsin Historic Preservation Database (WHPD) he is credited with designing is the manufacturing/cold storage building #7 within the Pabst Brewing Company complex.[23]

No evidence was found to suggest eligibility under Criterion A or B. In terms of Criterion C, the residence is not representative of any particular architectural style. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
2183 N. 47th Street	221952	Not Eligible

Description

This two-story, American Foursquare residence features brick-veneer on its first floor and asbestos shingle siding on both its upper level and dormers. Characteristics of the American Foursquare style exhibited on the home include its hipped roof, dormers and one-story, flat-roofed, brick porch that spans the primary (east) elevation. Exposed rafter tails are found under the eaves of the roof. Fenestration predominantly consists of original, six-over-one, double-hung, wooden sash windows.

Statement of Significance

This house and the neighboring property (2177-79 N. 47th) were constructed for owner John Belohlav. Listed as a tailor in city directories, Belohlav presumably built them as investment properties as his residence was located on the same block of 47th Street. The subject house was constructed in 1910 and the earliest known occupants were Frank and Mary Doherty in 1920. Frank was president of F. Doherty Company general contractors. Siding was installed on the upper story in 1958.[24]

No evidence was found to suggest eligibility under Criteria A and B. Featuring American Foursquare massing with modest Craftsman style details in the form of exposed rafter tails, the subject residence is not a distinctive example of an American Foursquare. As well, the asbestos shingle siding on the upper floor diminishes the building's integrity. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
2187-89 N. 47th Street	221953	Not Eligible

Description

This two-and-one-half-story, front-gabled, clapboard-sided duplex has asbestos shingles in the gable. A one-story, flat-roofed porch spans the primary (east) façade. The porch is composed of wooden posts resting on rusticated concrete block bases and exhibits a limited number of decorative exposed beams under its eaves. The primary elevation also features a two-story, left-of-center bay. Fenestration predominantly consists of one-over-one, double-hung, wooden sash windows, although multi-light windows are found within the gable.

[23] Original building permit, 2177-79 N. 47th Street, 7 April 1909; *Wright's City of Milwaukee Directory*, 1911, 1922.

[24] Original building permit, 2183 N. 47th Street, 13 May 1910; *Wright's City of Milwaukee Directory*, 1911, 1920, 1922.

Statement of Significance

This two-family residence was built in 1914-15 by carpenter-contractor Fred J. Garvens for Bernard F. Cooke and his wife Lolita. Bernard worked as an accountant and, later, as a clerk with the Northwestern Mutual Life Insurance Company. The Cookes continued to live in the home into at least the early 1920s, at which time clerk William H. Krohn and his wife Sophia lived in the other unit.[25]

No evidence was found to suggest eligibility under Criterion A or B. In terms of Criterion C, the residence is not representative of any particular architectural style. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
2207 N. 47th Street	221954	Not Eligible

Description

Resting on a rusticated, concrete block foundation, this two-story residence has a clapboard-sided first floor and vinyl-sided upper level. Featuring a side gambrel roof, a one-story, flat-roofed, rusticated concrete block porch spans the primary (east) façade. The second floor is composed of two, large gambrel dormers. Each dormer contains a single window opening over which is found an oval window. A smaller, shed roof dormer is located between the gambrel dormers. Fenestration consists of both original, multi-light-over-one, wooden sash and modern windows.

Statement of Significance

The subject house was constructed in 1909 as the residence of Frank Knoll. Frank owned the Knoll Heating Company.[26]

No evidence was found to suggest eligibility under Criterion A or B. The residence is not representative of any particular architectural style and is not potentially eligible under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
4704 W. Lloyd Street	116500	Not Eligible

Description

This two-story, Arts and Crafts style residence has a brick-veneered first floor and wooden-shingle-sided upper floor. Composed of a side-gabled roof with gabled wings and dormers, the primary (south) façade features a one-story, brick porch that wraps around to the side (east) elevation. The porch supports include both fluted columns and squared posts. Paired decorative brackets support the primary façade, front-gabled dormer. Since it was last surveyed in 1979, the house's original, multi-light-over-one, wooden sash fenestration was replaced with modern windows. A one-bay garage similarly features a brick-veneered first floor and wooden-shingle-sided upper floor.

Statement of Significance

Designed by the noted Milwaukee architectural firm Leenhouts & Guthrie, the subject residence was built in 1910 at an approximate cost of $7500. Jacob K. Oberle was the original owner of the home. Professionally, Oberle operated a wholesale fruit business. By 1943, the residence was owned by Lillian Suhr and its second floor was utilized as a rooming house. In order to address an emergency housing shortage following World War II, the City of Milwaukee allowed its temporary conversion into a two-family flat in 1945 as long as the additional housing unit was rented to a veteran and the house was returned to a single-family home when the emergency order was revoked, which occurred in 1952. That same year, a permit was issued to remove 'china closets' on the first floor for the installation of a sink.[27]

Established by Cornelius Leenhouts and Hugh Wilson Guthrie in 1900, the Leenhouts & Guthrie partnership lasted until the death of Leenhouts in 1935. The firm designed many types of buildings, including numerous residences, in various architectural styles. Their commissions include the Blackstone Apartments (709 E. Juneau Avenue, Milwaukee, determined eligible in 2001) and Georgian

[25] Original building permit, 2187-89 N. 47th Street, 26 September 1914; *Wright's City of Milwaukee Directory*, 1916, 1922.

[26] Original building permit, 2207 N. 47th Street, January 1909; *Wright's City of Milwaukee Directory*, 1910.

[27] Original building permit, 4704 W. Lloyd Street, 14 June 1910; *Wright's City of Milwaukee Directory*, 1922.

Court Apartments (2007-2011 N. Prospect Avenue, Milwaukee, NR-listed 4/19/90 Prospect Avenue Apartment Buildings Historic District).[28]

No evidence was found to suggest eligibility under Criterion A or B. Although a good example of the Arts and Crafts style, the removal of original fenestration – a character defining feature of the style – since it was last surveyed in 1979 has negatively affected the building's integrity and precludes eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
4831 W. State Street	221955	Not Eligible

Description

This large, one-story, brick-veneered warehouse building features a flat roof. Three, long, gabled clerestory windows that retain their original multi-light fenestration are found on the roof. Window openings on the primary (north) façade have been infilled and contain modern, fixed sash windows. One-story, brick and concrete block additions have been built on the side (east) elevation.

Statement of Significance

The western portion of this building was constructed circa 1940, while the eastern brick and concrete block additions were built in the 1956-59 time period. An early building tenant was the American Brass Company, which utilized it as a plumbing supply warehouse. Later fire insurance maps simply identify the building as a "glass, paper and woodenware warehouse" without specifically associating it with a particular company. It is currently occupied by Kennicott Wholesale Florist.[29]

Used for warehouse purposes, the building is not potential eligible under Criterion A. No evidence was found to suggest eligibility under Criterion B. Finally, the building is an astylistic utilitarian structure. As well, the infilled window openings on the primary façade diminish its integrity and, as a result, it is not potentially eligible under Criterion C as an example of industrial architecture. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
4701 W. Lisbon Avenue	221956	Not Eligible

Description

This two-story, brick-veneered commercial block has a flat roof. The building features very modest limestone block decorative accents. First-floor storefronts have been universally boarded-over, although their original multi-light transoms are evident. Upper-level window openings feature brick lintels and modern, double-hung windows resting on brick sills. Entrances on the primary (north) and side (east) elevations have modest metal hoods.

Statement of Significance

Built by contractor F. N. Rapp for owner Louis F. Byer in 1924-25, the subject building originally featured eight stores, three offices and one apartment. Early businesses in the building included a book shop; candy store; jewelry store; upholsterer; and florist supply store. City directories list Louis Byer's occupation as manager of the Byer Building, which also served as his residence. In 1929, the building was owned by Edward Millot, Jr. who received a permit to "alter storefronts."[30]

No evidence was found to suggest eligibility under Criterion A or B. In terms of Criterion C, the building is a vernacular commercial structure that is neither a significant or distinguishable entity. **A DOE is not needed.**

[28] "Prospect Avenue Apartment Buildings Historic District," National Register nomination, Prepared by Les Vollmert/Carlen Hatala for the Department of City Development, Milwaukee (23 February 1989).

[29] Sanborn Map Company, *Sanborn Fire Insurance Map – Milwaukee, Wisconsin* (New York: Sanborn Map Company, 1910 w/ revisions to 1961); Building permits, 4831 W. State Street, 1945-1970 (original permit not found).

[30] Original building permit, 4701-17 W. Lisbon Avenue, 8 December 1924; *Wright's City of Milwaukee Directory*, 1926.

Address	AHI #	NRHP Evaluation
900 & 944 N. 46th Street	117998	Potentially Eligible

Description

This two-story, brick manufacturing facility features a flat roof and brick corbeled parapet. Tall window openings predominantly contain multi-light, metal sash fenestration resting on limestone sills, although modern windows are also evident. Two, one-story, brick additions have been built on the west elevation, while concrete block and brick additions constructed from 1955-56 are found on the east elevation. Appearance is unchanged since it was last surveyed in 1980.

Statement of Significance

This building was constructed circa 1910. Although it was likely built by the H. W. Johns-Manville Company, which owned and operated their plant immediately to the east, the American Hair & Felt Company appears to be the earliest occupant. The American Hair & Felt Company was founded in 1864 by a group of Chicago and Milwaukee tanners in an effort to find a practical use for cattle hair, a tanning industry by-product. Previously, once the hair had been removed from the hide the result was a pungent odor. Treating the hair with ozone gas eliminated the odor and a number of applications were found for the hair including as a lining for military uniforms, gun wadding for bullets, insulation in rail car (prior to refrigeration), and as an underlayment for carpets. Indeed, the company possessed a number of patents issued under "felt manufacture," "ammunition," and "carpet cushion." Later changing its name to the Ozite Corporation, the company later pioneered the use of synthetic fibers. Although headquartered in Chicago, the American Hair & Felt Company utilized the subject building for the manufacture of their products into the 1970s.[31]

In terms of Criterion A, the American Hair & Felt Company was a unique manufacturer associated with Wisconsin's historic tanning industry. Established at a time when Milwaukee was a national leather manufacturing center, the number of patents acquired by the firm indicates a high level of innovation within its field. As a result, the subject facility is potentially eligible in the area of industry as a company and manufacturing process associated with the tanning industry. No evidence was found to substantiate eligibility under Criterion B. Regarding Criterion C, this factory is not a distinct example of industrial architecture, especially given the context of this building type within the City of Milwaukee. **A DOE is recommended.**

Address	AHI #	NRHP Evaluation
1120 N. 46th Street	223996	Not Eligible

Description

Resting on a rusticated concrete block foundation, this two-story, hipped-roof residence features a vinyl-sided first floor and wooden-shingle-sided upper level. A one-story, entrance wing projecting from the north elevation contains a round-arched door. Fenestration predominantly consists of six-over-one, double-hung, wooden sash windows, although some modern, six-over-six examples are also evident. An eyebrow window pierces the roof.

Statement of Significance

Constructed circa 1929, salesman George W. Knox and his wife Helen were the earliest occupants of this residence. In 1931, William and Charlotte Beckman lived in the house. William was employed as assistant manager of Hills Dry Goods Company.[32]

No evidence was found to suggest eligibility under Criterion A or B. Regarding Criterion C, the residence is a vernacular building that does not possess architectural significance. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1137-39 N. 46th Street	223997	Not Eligible

Description

This two-story duplex has a hipped roof and rests on a rusticated, concrete block foundation. The first floor is sheathed with composition siding, while the upper level features staggered, wooden-shingle siding. An entrance featuring a round-arched door projects from the north elevation. Fenestration consists of six-over-one, double-hung, wooden sash windows.

[31] *Sanborn Fire Insurance Map – Milwaukee, Wisconsin*, 1910 & 1910 w/ revisions to 1961; United States patents obtained from Google Patents website, http://www.google.com/?tbm=pts&hl=en, Accessed 28 June 2012.

[32] *Wright's City of Milwaukee Directory*, 1929-1931.

Statement of Significance

Built in 1929, the earliest known occupants of this residence were George O. & Miriam Smith. George was employed as a salesman with the Western Motor Sup. Company. By 1932, Harry R. Brown, a member of the United States Army, and his wife Elvira lived in the building.[33]

No evidence was found to suggest eligibility under Criteria A and B. Although the duplex possesses Prairie-style horizontality, it is not a distinctive example of this architectural style. As well, its first floor is sheathed with modern siding, which negatively affects its integrity. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1209 N. 46th Street	221957	Not Eligible

Description

This one-and-one-half-story, clapboard-sided bungalow has a front gable roof. The primary (east) façade features a one-story, front-gabled, right-of-center porch with modern, metal railings. A squared bay and hipped roof dormer are located on the side (south) elevation. Fenestration consists of six-over-one, double-hung, wooden sash windows.

Statement of Significance

This residence was built by carpenter-contractor John G. Jansen in 1923 and owned by Edward O. Clark and his wife Mabel. Edward worked as a marine engineer. Originally sheathed with stucco, the Clarks removed this material and resided the house with clapboard in 1939.[34]

No evidence was found to suggest eligibility under Criterion A or B. In terms of Criterion C, the residence is neither a significant or distinguishable example of a bungalow. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1217-19 N. 46th Street	221958	Not Eligible

Description

Resting on a rusticated concrete block foundation, this two-and-one-half-story, clapboard-sided, front-gabled duplex contains wooden shingles within the gable. A one-story, flat-roof porch spans the primary (east) facade. The porch features square, brick posts and a simple wooden railing. A two-story, square bay is found on the south elevation. Fenestration predominantly consists of six-over-one, double-hung, wooden sash windows, although modern examples are also evident. Windows in the primary façade gable feature a molded, modestly decorative hood.

Statement of Significance

The subject two-family house was constructed in 1923 by carpenter-contractor Henry Ramthun for approximately $9000. The original occupants were Fred & Arganie Maegli and salesman August Kerber and his wife Adele. Fred Maegli was secretary-treasurer with the Robert Felber Company, Inc., a coal and fuel firm.[35]

No evidence was found to suggest eligibility under Criteria A and B. The duplex is not representative of any particular architectural style and is not potentially eligible under Criterion C. **A DOE is not needed.**

[33] *Wright's City of Milwaukee Directory*, 1929-1932.

[34] Original building permit, 1209 N. 46th Street, 1923; *Wright's City of Milwaukee Directory*, 1923, 1924.

[35] Original building permit, 1217-19 N. 46th Street, 1923; *Wright's City of Milwaukee Directory*, 1924.

Address	AHI #	NRHP Evaluation
1229-31 N. 46th Street	118164	Not Eligible

Description

Resting on a rusticated concrete block foundation, this two-and-one-half-story duplex has a clipped front-gabled roof. The building is sheathed with clapboard-siding on the first floor and wooden-shingles on the upper level and within the gable. A one-story, front-gabled porch spans the primary (east) façade. The porch features square, brick posts and modern railings. A two-story, square bay and clipped front-gabled dormer are found on the south elevation. Fenestration consists of both six-over-one, double-hung, wooden sash and modern windows. Since it was last surveyed in 1980, the railing on the porch roof was replaced. As well, the first and second floor windows on the primary elevation formerly featured a picture window flanked by the existing double-hung windows. The picture windows have been converted to double-hung windows resembling the outer examples.

Statement of Significance

Carpenter-contractor Henry Ramthun built this two-family residence in 1923 at an approximate cost of $7200. The Mettlemann family was the original owner and continued to occupy the house into at least the early 1950s. Fred & Sophie Mettlemann resided in one unit, while Fred L. & Anna Mettlemann lived in the other. Fred was employed as a mason, while Fred L. was a machinist.[36]

No evidence was found to suggest eligibility under Criterion A or B. The duplex is not representative of any particular architectural style. As well, the alteration to the primary façade picture windows since it was last surveyed in 1980 negatively affects the building's integrity. There is no potential eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1330 N. 46th Street	221959	Not Eligible

Description

This one-and-one-half-story, aluminum-sided bungalow has a clipped, side-gabled roof with exposed rafter tails. A primary (west) façade porch is located under the roof slope. It features square, brick posts and a wooden railing with turned balusters. A clipped, front-gabled dormer on the primary elevation is sheathed with wooden shingles. Fenestration consists of six-over-one, double-hung, wooden sash windows.

Statement of Significance

Built in 1921, this bungalow was originally owned by Rodney E. and Jessie Derby. Rodney worked as an office manager with The Journal Company, the entity that owned *The Milwaukee Journal* newspaper and, later, WTMJ radio station. Carpenter-contractor John Hupfer was the builder. Aluminum siding was installed on the house in 1972 and, four years later in 1976, the kitchen and bathroom were remodeled.[37]

No evidence was found to suggest eligibility under Criterion A or B. Although possessing rafter tails, the residence is not a distinctive example of a bungalow. As well, the installation of aluminum siding negatively affects the building's integrity precluding eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
1344 N. 46th Street	221960	Not Eligible

Description

This one-and-one-half-story, stuccoed bungalow has a clipped, front-gabled roof featuring decorative false beams. A one-story, right-of-center porch with square wooden posts is located on the primary (west) façade. A square bay projects from the south elevation. Fenestration appears to consist of wooden sash, double-hung windows.

[36] Original building permit, 1229-31 N. 46th Street, 1923; *Wright's City of Milwaukee Directory*, 1924.

[37] Original building permit, 1330 N. 46th Street, 1921; *Wright's City of Milwaukee Directory*, 1922.

Statement of Significance

This residence was constructed in 1924 for owners Edward W. and Maggie Anacker. Edward was employed as a watchman. The garage was built in 1949.[38]

No evidence was found to suggest eligibility under Criteria A and B. Although featuring decorative false beams, this residence is not a significant or distinguishable example of a bungalow. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
W. Lloyd Street/W. Vliet Street	111088, 120123, 120124, 223032	Potentially Eligible

Description

This 139-acre city park (AHI #111088) features a bandshell (the Emil Blatz Temple of Music, AHI #120123), statue (AHI #120124) and a senior center (AHI #223032). The concrete Emil Blatz Temple of Music exhibits bas-relief, Art-Deco-style decoration and is framed by two pillars. The bronze Goethe and Schiller statue rests on a granite base featuring a rounded seating area, which is approached by three steps. The one-story, limestone-veneered senior center has a flat-roofed front section and taller rear section with a rounded roof. The primary (south) façade features two, aluminum, double-door openings and large banks of windows. A covered walkway in front of the building has a "wavy" roof design. The appearance of the Emil Blatz Temple of Music and Goethe & Schiller monument are unchanged since they were last surveyed in 1980. The senior center was not previously surveyed.

Statement of Significance

Washington Park (originally, West Side Park) was one of the original six park sites recommended by the newly formed Board of Park Commissioners of Milwaukee in 1890. West Side Park, along with Lake Park, was designed by the noted landscape architectural firm led by Frederick Law Olmstead. The park also was the original location of the Milwaukee Zoo in 1910. Later additions to the park include the Emil Blatz Temple of Music (AHI #120123) built in 1938 and the combined Johann Wolfgang Von Goethe and Friedrich Schiller monument (AHI #120124) dedicated in 1908 and moved to its present location in 1960 due to construction of the Stadium Freeway. The Stadium Freeway construction was the catalyst for the relocation of the zoo and the subject senior center (AHI #223032) was built on the former zoo grounds. Dedicated in 1968, it was one of six senior centers constructed by Milwaukee County during the 1960s. Washington Park reached its current size of 139 acres in 1967.[39]

In terms of Criterion A, Washington Park was one of the earliest parks established in Milwaukee and is potentially eligible in the areas of recreation, as well as community planning and development. No evidence was found to suggest eligibility under Criterion B. Finally, designed by the noted landscape architectural firm led by Frederick Law Olmstead, Washington Park may be potentially eligible for landscape design under Criterion C. Included within the original survey area, this property is no longer within the Area of Potential Effects (APE) due to later modifications to the Stadium Interchange portion of the project. Although it may be potentially eligible, **a DOE is not recommended** since it is currently located outside the APE. If project plans were to change, the need for a DOE should be reassessed.

Address	AHI #	NRHP Evaluation
4530 W. Lloyd Street	221961	Not Eligible

Description

Resting on a raised basement that is demarcated with a limestone sill course, this three-story, brick-veneered apartment building has a flat roof. The symmetrical primary (south) façade features a centered entrance sheltered by a hood supported by fluted columns. Almost devoid of ornamentation, this elevation contains five inset limestone blocks on the third floor directly above the entrance. A squared, stuccoed bay projects from the second and third floors in the center of the west elevation. Window openings contain nine-over-one, double-hung, wooden sash windows resting on limestone sills.

[38] Original building permit, 1344 N. 46th Street, 1924; *Wright's City of Milwaukee Directory*, 1925.

[39] Landscape Research, 121, 124.

Statement of Significance

Referred to as the "Park Apartments," this six-unit apartment building was constructed in 1916 at an approximate cost of $12,000. It was owned at that time by Mathias G. Peters who worked in real estate and resided on 26th Street. In 1937, the property was owned by Victor Busse of West Bend.[40]

No evidence was found to suggest eligibility under Criterion A or B. In terms of Criterion C, this apartment building is a vernacular structure and not representative of any particular architectural style. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
4550 W. Wisconsin Avenue	120403	Not Eligible

Description

This one-story, brick, former manufacturing facility has a flat roof. The primary (south) façade is divided into nine bays by plain brick pilasters topped with eclectic molded capitals. Each bay contains a large window opening with modern fenestration. A similarly eclectic molded beltcourse is located above the window openings. Molded coping features a repeating pattern of small, round arches. A modern entrance is located toward the eastern end of the primary facade. Since it was last surveyed in 1980, the fenestration has been replaced.

Statement of Significance

Constructed circa 1935, the subject building was utilized as a sign production facility by a succession of sign manufacturers. The first was the Outdoor Advertising Company, which received a permit to remodel the building in 1937. By the mid-1940s, Cream City Outdoor Advertising was the occupant followed by the Naegele Outdoor Advertising Company, which utilized the building during the 1950s and 1960s. Originally based in Richfield, Minnesota, Naegele Outdoor Advertising was established in 1934 as an electric sign business, but was converted to a billboard producer following World War II. The company grew quickly and acquired other outdoor advertising companies throughout the 1950s and 1960s, ultimately operating divisions throughout the United States with headquarters in Minnesota and Florida. A permit dating to 1980 indicates that existing windows were replaced and window openings received smaller fenestration and brick infill.[41]

In terms of the sign manufacturers that utilized this building, no evidence was found to suggest significance and eligibility under Criterion A. As well, no evidence pointed toward eligibility under Criterion B. Finally, in terms of Criterion C, the building is not representative of any particular architectural style. Furthermore, the installation of modern windows since it was last surveyed negatively affects its integrity. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
4552 W. Wells Street	221963	Not Eligible

Description

This three-story, brick-veneered apartment building takes the form of a "C" composed of a recessed central, entrance block framed by projecting hipped-roof wings. The primary (south) façade features eclectic architectural elements including a Palladian-inspired window over the central entrance and rough-cut limestone quoining on the first floor of the wings. In addition to single examples, groupings of three and four windows resting on limestone sills are found throughout the building. Triple windows on the first level of the wings are found within segmental-arched openings featuring limestone keystones. Fenestration predominantly consists of three-over-one and six-over-one, double-hung, wooden sash windows.

[40] Original building permit, 4530 W. Lloyd Street, 1916; *Wright's City of Milwaukee Directory*, 1921.

[41] Building permits, 4550 W. Wisconsin Avenue, 1937-1980 (original permit not found); *Sanborn Fire Insurance Map – Milwaukee, Wisconsin*, 1910 w/ revisions to 1961; *Inventory of the Naegele Outdoor Records, 1985-1990*, http://library.duke.edu/rubenstein/findingaids/naegeleoutdoor/, Accessed 5 July 2012.

Statement of Significance

Built circa 1928, the subject apartment building featured six units.[42]

No evidence was found to suggest eligibility under Criteria A and B. Although possessing a high degree of integrity, the subject apartment building is not representative of any particular architectural style or method of construction. As a result, it is not potentially eligible under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
4400 W. National Avenue	221964	Potentially Eligible

Description

This two-story, brick-veneered office building of the Harnischfeger Corporation features a Neoclassical-style cornice with block modillions. The primary (south) façade largely consists of a two-story wing projecting from the main block. Indented a single-bay from both of the side elevations, the wings spans the rest of primary façade and features a modern entrance within a round-arched opening trimmed with stone. Window openings feature segmental arches with keystones and stone sills. Fenestration is modern. A two-story addition projects from the rear (north) elevation.

Statement of Significance

Henry Harnischfeger and Alonzo Pawling founded the Pawling & Harnischfeger Machine and Pattern Shop in 1884. In its early days, P&H built carving machines, brick-making machines and a special device called the poppet valve governor, designed for use on slide valve steam engines by Bruno Nordberg (who later founded the Nordberg Manufacturing Company). Another future industrial giant, the E.P. Allis Company – later Allis-Chalmers – asked Pawling and Harnischfeger to build the first electric traveling crane in 1887. The result was so successful that P&H became permanently associated with the crane industry. In 1903, the company established itself at the subject location with its plant designed for the manufacture of electric traveling cranes and other heavy machinery. In 1911, ill-health forced Pawling to dissolve the partnership and the name of the firm was changed to Harnischfeger Corporation, although the P&H trademark was retained. In 1915, P&H built a mechanized trencher using conveyor buckets and boom & wheel type excavators soon followed. Harnischfeger's product line ultimately developed to include three categories: construction equipment, mining & electrical equipment, and material handling equipment and systems.[43]

In terms of Criterion A, Harnischfeger Corporation was an innovative and notable corporation established at a time when Milwaukee was developing into an important manufacturing center and may be potential eligible in the area of industry. Considering that the Henry Harnischfeger Residence is still extant (3424 W. Wisconsin Avenue, AHI #30276), eligibility under Criterion B could not be substantiated. Finally, in regards to Criterion C, although possessing a Neoclassical-style cornice, the building is not a distinctive example of the style. As well, it features modern fenestration, which diminishes its integrity. Included within the original survey area, this property is no longer within the Area of Potential Effects (APE) due to later modifications to the Stadium Interchange portion of the project. Although it may be potentially eligible, **a DOE is not recommended** since it is currently located outside the APE. If project plans were to change, the need for a DOE should be reassessed.

I-94 EAST-WEST RESOURCES:

Address	AHI #	NRHP Evaluation
2504 W. Clybourn Street	120458	Not Eligible

Description

This two-story, clapboard-sided house rests on a rusticated, concrete block foundation. Although lacking the decorative details associated with the style, the residence possesses Queen Anne-style massing featuring a hipped roof with lower cross gables and cutaway bays. Composition shingles are found within the gables. The one-story, primary (south) façade porch features square posts and balusters, as does a side (east) elevation porch. Fenestration predominantly consists of one-over-one, double-hung, wooden sash windows. Appearance is unchanged since it was last surveyed in 2000.

[42] Assessor's records, City of Milwaukee, Website: http://gis.milwaukee.gov/website/mm1/viewer.htm, Accessed 25 June 2012; *Wright's City of Milwaukee Directory*, 1928-1932.

[43] Harry H. Anderson and Frederick I. Olson, *Milwaukee, At the Gathering of the Waters* (Tulsa, OK: Continental Heritage Press, 1981), 193.

Statement of Significance

Designed by local architect Charles Tharinger, the subject residence was constructed in 1909 for Gaun Robertson. Robertson was employed as a commercial traveler. From 1916 through 1929, the house was occupied by brakeman Carey Brown.[44]

Born in Racine, Wisconsin, in 1874, Charles H. Tharinger began his professional life as a grocer in Milwaukee in 1896. Nothing is known about his formal schooling; however, in 1904 he began working for John Menge, Jr. as a draftsman. Two years later, he began his own practice. For most of his career he worked out of his home. By 1920, his work as an architect was less frequent as he had become increasingly involved with the family-owned, Tharinger Macaroni Company. Although he designed a number of commercial buildings, Tharinger concentrated on designing residential structures predominantly in the Craftsman, Colonial Revival and Elizabethan Revival styles.[45]

No evidence was found to suggest eligibility under Criterion A or B. In terms of Criterion C, although the residence possesses Queen Anne massing, it lacks the decorative elements – gable ornamentation, roof cresting, spindlework frieze, decorative brackets, turned porch columns and balusters – associated with the style. As a result, it is not a good example of the Queen Anne style, nor is it eligible as an example of Charles Tharinger's work. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
117 N. 60th Street /6001 W. Stevenson Street	221965	Not Eligible

Description

This two-story, brick apartment building has a flat roof. The primary entrance is located on its canted (northeast) corner, which features decorative concrete block quoining. Identical quoining is found on the building corners. First-floor, segmental-arched window openings exhibit keystones and blind arches consisting of textured stucco. These window openings have been infilled and contain modern fenestration. Upper-level window openings predominantly feature paired, one-over-one, double-hung, wooden sash fenestration resting on concrete sills. A datestone features "J. A. Bayliss 1924" in raised lettering on its east elevation.

Statement of Significance

Built in 1924, the subject five-unit apartment building features commercial space on its first floor. Early commercial tenants included a shoe repair shop; gift shop; dry goods store; and retail bakery. The datestone includes the name J. A. Bayliss. John A. Bayliss was president of Tri-City Investment & Construction Company.[46]

No evidence was found to suggest eligibility under Criteria A and B. The infilling of virtually all first-floor window openings diminishes the building's integrity and precludes eligibility under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
169-71 S. 60th Street	221966	Not Eligible

Description

This two-story, red brick duplex has a Mansard-like roof. The residence features simple decorative concrete panels and tan brick quoining. A one-story, gabled porch spans the primary (east) façade. The porch shelters a right-of-center entrance and features square brick posts and modern metal railings. Window openings contain modern fenestration resting on either brick or concrete sills.

[44] Original building permit, 2504 W. Clybourn Street, 1909; *Wright's City of Milwaukee Directory*, 1910, 1916, 1929.

[45] "Badger State Bank," Determination of Eligibility form, Prepared by Traci E. Schnell for Edwards & Associates, Inc., Milwaukee (August 1999), 12.

[46] Datestone; building permits, 117-125 N. 60th Street, 1932-1938 (original permit not found); *Wright's City of Milwaukee Directory*, 1927, 1928.

Statement of Significance

This residence was built in 1927 by contractor John A. Bayliss, president of Tri-City Investment & Construction Company. Early occupants included machinist Stephen P. Hankewich and his wife Olga in 1927. In 1929, Clark M. Warren resided in the duplex. Warren worked as an inspector with the Department of Public Works.[47]

No evidence was found to suggest eligibility under Criteria A and B. In terms of Criterion C, the duplex is not representative of any particular architectural style. As well, the modern porch railing and fenestration diminishes its integrity. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
155 N. Story Parkway	221967	Not Eligible

Description

This two-story, limestone-veneered, Colonial Revival style residence has a side-gabled roof. The primary (south) façade features a central entrance with a wooden surround composed of fluted pilasters. Large picture windows are found on either side of the entrance. Window openings predominantly contain one-over-one, double-hung windows resting on rusticated, limestone sills. An exterior, limestone-veneered chimney is found on the side (east) elevation.

Statement of Significance

This house was built by contractor Henry Trilling in 1949 for Arthur G. Mantei, Jr. and his wife Rose. Arthur was employed as a sheet metal worker.[48]

No evidence was found to suggest eligibility under Criteria A and B. Although possessing a Colonial Revival-style entrance surround, the residence is not a distinctive or notable example of the style. As a result, potential eligibility could not be substantiated under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
205 N. Story Parkway	221968	Not Eligible

Description

Topped with a hipped roof, this two-story, limestone-veneered, Colonial Revival style residence has a left-of-center entrance on the primary (south) façade. This entrance has a wooden surround featuring pilasters. Two picture windows are found to the right of the entrance; otherwise, fenestration consists of six-over-six, double-hung, wooden sash windows resting on rusticated, limestone sills. An exterior, limestone-veneered chimney is found on the side (east) elevation.

Statement of Significance

Constructed in 1939 by builder Walter Uber, the subject residence was originally owned by Henry G. Petersen. Henry served as president-treasurer of the Petersen Tool & Machine Company, which was located in a single building at 2610 W. North Avenue.[49]

No evidence was found to suggest eligibility under Criteria A and B. Although possessing a Colonial Revival-style entrance surround, the residence is not a distinctive or notable example of the style. As a result, potential eligibility could not be substantiated under Criterion C. **A DOE is not needed.**

[47] Original building permit, 169-171 S. 60th Street, 1927; *Wright's City of Milwaukee Directory*, 1927, 1929.

[48] Original building permit, 155 N. Story Parkway, 1949; *Wright's City of Milwaukee Directory*, 1950.

[49] Original building permit, 205 N. Story Parkway, 1939; *Wright's City of Milwaukee Directory*, 1940.

Address	AHI #	NRHP Evaluation
166 S. Hawley Court	221969, 221970, 221971	Not Eligible

Description

This cemetery property (AHI #221969) contains chapel (AHI #221970), mausoleum (AHI #221971) and maintenance buildings. The one-story, brick chapel has a hipped roof. Its primary (south) façade features an extended hood sheltering the recessed central entrance. A limestone beltcourse wraps around the entire building. Gabled dormers are found on the side elevations. The building features round-arched and rectangular window openings that likely have been modified on the rear (north) and west elevations based on the presence of lighter-colored, infill brick. The mausoleum features a polished granite veneer. Four separate, modern glass entrances are found on its primary (south) façade. The vernacular brick maintenance building has fieldstone veneer sheathing its westernmost bay on the primary (south) elevation.

Statement of Significance

Chartered in 1867, Spring Hill Cemetery features chapel (AHI #221970), mausoleum (AHI #221971) and maintenance (not surveyable) buildings. Created and operated by Gilead Lodge 41 of B'nai Brith, Spring Hill is a Jewish cemetery that consists of approximately 11.5 acres and contains 8,000-10,000 interred. Constructed circa 1920, the chapel was later converted into a residence; initially for the cemetery custodian and currently for cemetery security staff. The mausoleum was built in 1976 and, subsequently, three identical sections were added onto the original structure. The last of these additions was built in 2003 and each contains eighty individual entombment spaces.[50]

In terms of Criterion A, the property is not eligible for its ethnic association considering that Milwaukee features a number of resources that better convey the Jewish history of the city. A search of the Wisconsin Historic Preservation Database (WHPD), reveals eleven previously surveyed synagogues/temples, which is only one resource type associated with Milwaukee's Jewish population. No evidence was found to suggest eligibility under Criterion B. In terms of Criterion C, neither the chapel building nor mausoleum possesses architectural significance. The integrity of the chapel has been diminished with multiple areas exhibiting infill brick and the mausoleum has not yet reached the National Register's fifty-year threshold. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
3630 W. Park Hill Avenue	221972	Not Eligible

Description

Resting on a brick foundation, this two-and-one-half-story, Colonial Revival style, side-gambrel residence is sheathed with brick-pattern asphalt siding. The roof exhibits cornice returns with simple brackets under the eaves. The primary (south) façade features a central entrance with sidelights sheltered by a brick porch with square posts and limestone coping. Two bay windows are found on the second floor, while three pedimented dormers complete the primary elevation. A small, one-story wing projects from the side (east) elevation. Fenestration consists of one-over-one, double-hung, wooden sash windows.

Statement of Significance

Built in 1900, the earliest known occupants of this house were Frank E. and Maude Ludington in 1904. At that time, Frank was employed as a telephone operator. Maude Ludington remained in the residence until at least 1921. The building was sheathed with brick-pattern asphalt siding in 1939.[51]

No evidence was found to suggest eligibility under Criteria A and B. Although possessing Colonial Revival features, the subject residence is not a distinct example of the style. As well, its existing siding is not original and diminishes the building's integrity. **A DOE is not needed.**

[50] Leon Cohen, "New Mausoleum Nears Completion at Spring Hill," *The Wisconsin Jewish Chronicle*, 13 June 2003; Michael Schuman, Executive Director of Spring Hill Cemetery, Conversation with Michael T. McQuillen, 7 January 2013, Notes on file at Heritage Research, Ltd., Menomonee Falls, WI.

[51] Assessor's records, City of Milwaukee, Accessed 25 June 2012; Building permits, 3630 W. Park Hill Avenue, 1919-1939 (original permit not found); *Wright's City of Milwaukee Directory*, 1904, 1921.

Address	AHI #	NRHP Evaluation
6033-35 W. Fairview Avenue	221973, 221974	Not Eligible

Description

This property consists of two buildings: a one-and-one-half-story, front-gabled bungalow residence (AHI #221973) and a one-story, front-gabled commercial structure (AHI #221974), both of which are sheathed with brick-pattern asphalt siding. An enclosed, one-story, hipped-roof porch spans the primary (north) façade of the bungalow. Fenestration consists of three-over-one, double-hung, wooden sash windows. The primary façade of the commercial building features a central entrance. Single, one-over-one, double-hung, wooden sash windows are found on either side of this entrance. An additional entrance is located on the side (west) elevation.

Statement of Significance

The subject house and one-story former commercial building were constructed circa 1918. The earliest known property owners were Frazier and Lucy Lobdell in 1927. Frazier was employed as a foreman and, later, a carpenter, while Lucy worked as a clerk at the Boston Store. A permit dating to 1931 indicates the commercial building was "lowered about 3 feet to street grade." Early tenants of this building include a barber shop and, subsequently, a secondhand bookstore and a fish store. The buildings were sheathed with brick-pattern asphalt siding in 1935.[52]

No evidence was found to suggest eligibility under Criterion A and B. The residence is not a distinctive example of the bungalow form and has replacement siding, which diminishes its integrity. The commercial building is vernacular. Therefore, there is no potential eligibility under Criterion C and **a DOE is not needed.**

Address	AHI #	NRHP Evaluation
6203-07 W. Fairview Avenue	221975	Not Eligible

Description

This two-story, brick building has a flat roof. The primary (north) façade features large storefront windows with a recessed entrance on the first floor. An additional entrance is located to the right of the storefront windows. Window openings featuring paired or triple windows are found on the upper level. These openings contain stone sills and a continuous soldier brick lintel. Fenestration consists of six-over-one, double-hung, wooden sash windows. A portion of the upper level of the side (east) elevation is recessed akin to a light well.

Statement of Significance

Constructed in 1927 for approximately $15000, the subject building originally featured two stores, two offices and an apartment. Albert Pfeifer is listed as owner and contractor on the building permit. The city directory indicates he operated a hardware store in the subject building, which also served as his and his wife Bertha's residence. Additional early commercial tenants included a drug store, beauty parlor, retail bakery, lunch room and dental office.[53]

No evidence was found to suggest eligibility under Criteria A and B. In terms of Criterion C, the building is a vernacular commercial structure. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
6519-6519A W. Fairview Avenue	221976	Not Eligible

Description

This one-and-one-half-story bungalow has a clipped, front-gabled roof. The first floor is brick-veneered, while the upper level is sheathed with wooden shingles. The primary (north) façade features a projecting, right-of-center, hipped-roof entrance wing. A large segmental-arched window opening on the wing has a soldier brick lintel with keystone and a limestone sill. A similar window opening is found on the primary elevation to the left of the wing. An additional entrance with a shed-roof hood is located on the side (east)

[52] Assessor's records, City of Milwaukee, Accessed 25 June 2012; Building permits, 6033-35 W. Fairview Avenue, 1928-1936 (original permit not found); *Wright's City of Milwaukee Directory*, 1927, 1928.

[53] Original building permit, 6203-07 W. Fairview Avenue, 1927; *Wright's City of Milwaukee Directory*, 1928.

elevation, as is a clipped gabled dormer. On the first floor, fenestration appears to predominantly consist of wooden, double-hung windows with leaded-glass upper sash, while upper-level windows appear to be modern.

Statement of Significance

This bungalow was built by carpenter-contractor Frank Krenn for mason John Warga and his wife Theresa in 1927. The cost of construction was approximately $6500. It was converted to a duplex in 1938.[54]

No evidence was found to suggest eligibility under Criteria A and B. Although possessing a high degree of integrity, the residence does not represent a significant or distinguishable example of a bungalow and is not eligible under Criterion C. **A DOE is not needed.**

Address	AHI #	NRHP Evaluation
6701 W. Fairview Avenue	221977	Not Eligible

Description

This small, one-story commercial building has a flat roof and is sheathed with asbestos shingle siding. The primary (north) façade features a metal pent evoking the appearance of clay tiles that wraps around to the side elevations. The central entrance is flanked on each side by large wooden picture windows featuring seven-light transoms. An additional entrance is located on the side (east) elevation, which also exhibits two smaller window openings.

Statement of Significance

Built in 1925, early tenants of this commercial building included a barber shop, a coal & ice office and a shoe repair shop. In 1944, the building was sheathed with asbestos siding. It was used as a real estate office in the mid-1980s, at which time fire damaged the southwest corner of the building. It was convert to a one-family residence in 1990.[55]

No evidence was found to suggest eligibility under Criteria A and B. In terms of Criterion C, the building is not reflective of any particular architectural style. **A DOE is not needed.**

2. ☐ No Listed, Eligible, or Potentially Eligible Historic District(s) Identified – Check the box at left if there is no historic district present. Do not check this box if a historic district was identified during survey activities.

3. X Listed, Eligible, or Potentially Eligible Historic District(s) Identified – After reviewing the *WisDOT Survey Manual* and *WisDOT Historic District Survey Methodology*, complete the following for each historic district.

A. Historic District Status

☐ 1. Listed or previously determined eligible historic district – Complete Section 2 on WisDOT Form DT1446 (Cover Sheet). **Do not** complete B-F below.
X 2. Previously identified historic district(s) present – For each district, complete B-F below.
☐ 3. Potential historic district(s) identified during fieldwork – For each district, complete B-F below.

B. Location

Historic District Name Wisconsin Avenue-Woodlawn Court Historic District (Story Hill Residential Historic District)	
City or Town Milwaukee	County Milwaukee
Location – General Street Boundaries Wisconsin Avenue (north); Bluemound Road (south); Story Parkway (East); 51st Street (West)	

[54] Original building permit, 6519-6519a W. Fairview Avenue, 1927; *Wright's City of Milwaukee Directory*, 1928, 1932.

[55] Assessor's records, City of Milwaukee, Accessed 25 June 2012; Building permits, 6701 W. Fairview Avenue, 1932-1990 (original permit not found).

C. Identification Process

☐ 1. Newly identified historic district

☐ Coordinated findings with WisDOT Bureau of Equity and Environmental Services – Correspondence attached.

X 2. Previously identified historic district – Check all that apply

☐ a. Intensive survey – Include report author, title, and date: _____

☐ b. WisDOT survey – Include project ID, name, and date: _____

☐ c. Other – Explain: City of Milwaukee identified district (see attached email from city staff)

D. Recommendation – Determination of Eligibility (DOE)

X 1. DOE recommended – Attach documentation explaining recommendation

☐ 2. DOE not recommended; Project will have no effect on potential district – Attach documentation

☐ 3. DOE not recommended; Historic district is not eligible – Attach documentation

E. Attachments

☐ Historic district sketch map labeled with proposed historic boundary and contributing/noncontributing resources within the APE.

☐ Photos sufficient to evaluate integrity

☐ Correspondence with WisDOT – Memos, E-mail, and/or letters

☐ Architecture and History Inventory (AHI) cards for contributing resources within APE

F. Summary

1. **Architectural Description** – 1-2 paragraphs describing the general setting, architectural styles, and range of property dates within the historic district.
2. **Significance** – 1-2 paragraphs describing significance of district and application of National Register criteria.
3. **Project APE and Historic District Boundary** – 1-2 paragraphs describing the relationship of the project to the district.

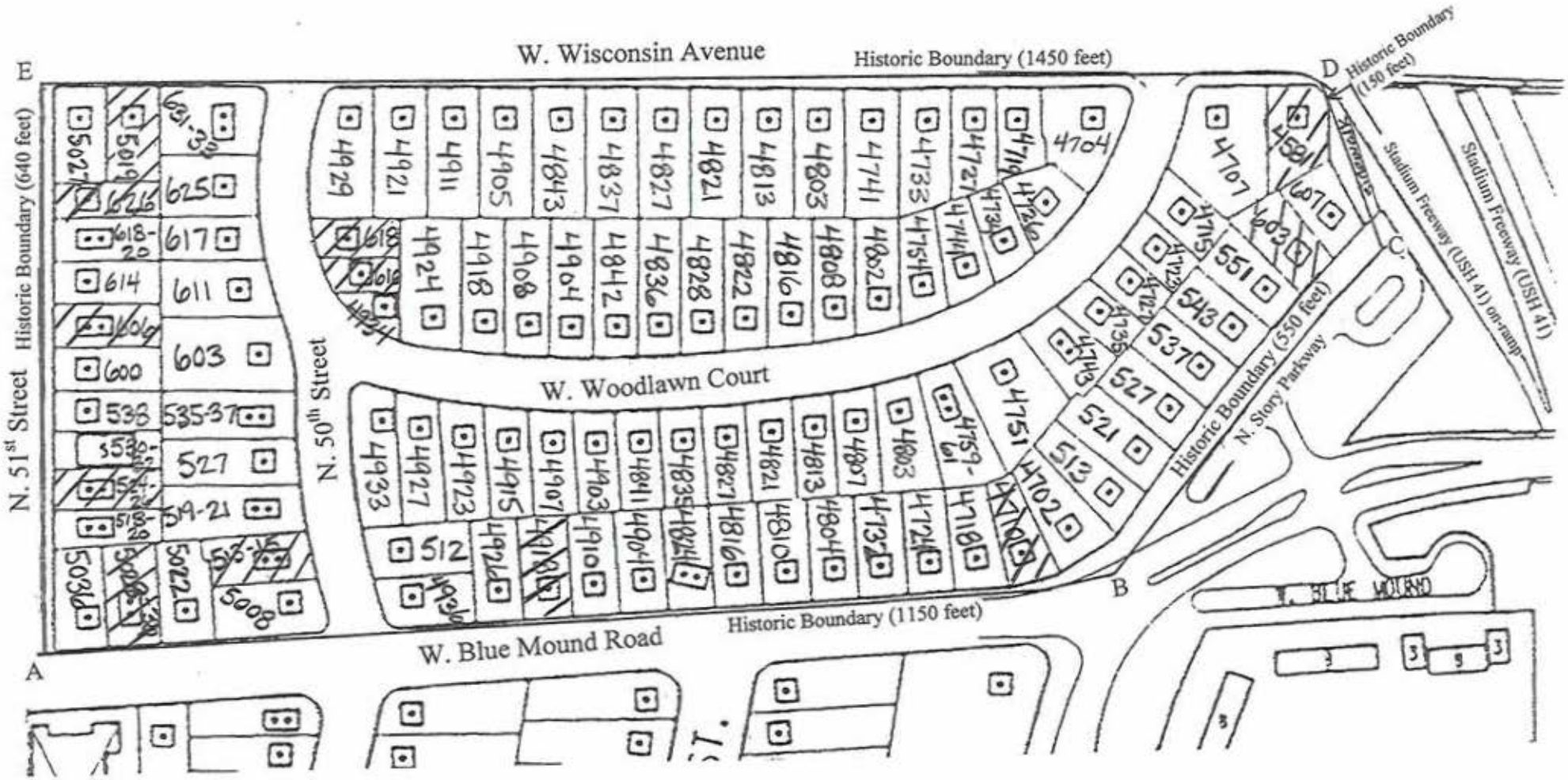
WisDOT Project #1060-27-01: I-94 East/West & Stadium Interchange, Milwaukee County
Wisconsin Avenue-Woodlawn Court Historic District (Story Hill 1 Historic District)

F. Summary –

1. *Architectural Description*: Platted in 1911, the Story Hill Subdivision was largely built up by 1920. Realtor, builder, and architect George Schley and his sons designed and constructed a significant number of the houses within the district. Many of these one-and-one-half- to two-story residences were designed in the Craftsman or Colonial Revival styles and are distinguished by their stucco cladding.

2. *Significance*: The Wisconsin Avenue-Woodlawn Court/Story Hill 1 Historic District is an example of Milwaukee's westward movement and developed, in part, due to the increasing ownership of automobiles and the opening of the Grand (Wisconsin) Avenue viaduct in 1911. The Story Hill neighborhood was developed when Albert & Alice Story registered a plat on May 9, 1911, just two months prior to the opening of the viaduct. Covenants incorporated within the Story Hill subdivision give the historic district its unique sense of time and place. Houses along Wisconsin Avenue and Story Parkway were specified to cost a minimum of $4,000, while those on 50th Street, Woodlawn Court, and Bluemound Road cost $3,000 and those on 51st Street cost $2,000. The setbacks from the streets appear to be consistent. As well, flats were not allowed to be built on Wisconsin Avenue and Story Parkway, and saloons, livery stables and businesses like hotels or restaurants that would disperse alcoholic beverages were also forbidden. The Wisconsin Avenue-Woodlawn Court/Story Hill 1 Historic District also features a high degree of integrity.

3. *Project APE and Historic District Boundary*: The Stadium Freeway (USH 41/Miller Park Way) borders the district on the east. The enclosed aerial image provides a good view of the proximity of the freeway to the eastern portion of the district; as well, photo #33 shows the proximity of the southbound freeway entrance ramp to the district. The project APE includes all buildings adjacent to the existing roadway. Within the proposed district, 607 N. Story Parkway (photo #3) and 4581 W. Wisconsin Avenue (photo #33) are both within the APE and 607 N. Story Parkway is a surveyable property.



Story Hill Residential Historic District
City of Milwaukee, Milwaukee County

Contributing

Non-Contributing

Michael McQuillen

From: Emily Pettis <emily.pettis@meadhunt.com>
Sent: Thursday, November 01, 2012 10:35 AM
To: 'Michael McQuillen'
Cc: Kennedy, Jason - DOT (Jason1.Kennedy@dot.wi.gov); Greg Rainka
Subject: RE: Potentially eligible historic district question

Mike,
We met with Jim Draeger this morning and agree that this is a potentially eligible district and that a DOE is needed. Please go ahead and prepare the document. Would you like me to return the photo prints that you submitted so you can reuse with the DOE?

Please let Jason or me know if you have questions,
Emily

Emily Pettis | WisDOT Cultural Resources Team, Assistant
Mead & Hunt, Inc | M & H Architecture, Inc | 6501 Watts Road | Madison, WI 53719
Main: 608-273-6380 | Mobile: 608-279-0358
emily.pettis@meadhunt.com | www.meadhunt.com

From: Emily Pettis
Sent: Thursday, October 18, 2012 1:47 PM
To: Michael McQuillen
Cc: Kennedy, Jason - DOT (Jason1.Kennedy@dot.wi.gov); Greg Rainka
Subject: RE: Potentially eligible historic district question

Mike,
Before CRT can confirm the need for a district DOE, we'll need additional information from you. We then review the information with Jim Draeger and determine if a DOE is necessary. Please provide the following:

- Representative photos of the district, including streetscapes and individual buildings
- Sketch map that identifies the preliminary boundaries
- Completed Historic District section of the AHSR, Worksheet B. This does not have to be thorough at this time, but will help us understand the overall number of resources; overall styles, forms, and construction dates; and area of significance.

Also, in case you have not already done so, please keep the Project Manager and Regional Environmental Coordinator informed about the potential for the district. Please let Jason or me know if you have any questions about the process,
Emily

Emily Pettis | WisDOT Cultural Resources Team, Assistant
Mead & Hunt, Inc | M & H Architecture, Inc | 6501 Watts Road | Madison, WI 53719
Main: 608-273-6380 | Mobile: 608-279-0358
emily.pettis@meadhunt.com | www.meadhunt.com

From: Michael McQuillen [mailto:mmcquill@hrltd.org]
Sent: Wednesday, October 17, 2012 5:59 PM
To: Emily Pettis
Subject: Potentially eligible historic district question

Hi Emily –

Michael McQuillen

From: Hatala, Carlen <chatal@milwaukee.gov>
Sent: Monday, July 09, 2012 12:04 PM
To: Michael McQuillen
Subject: RE: I-94 east/west and Stadium Freeway

I had lots of problems the last 2 weeks and just got enough cleared out of my system to be able to start sending e-mails last week. I am so swamped!

I think the boundary should follow the original subdivision boundary of Story Hill 1 --Wisconsin to Blue Mound, Story Parkway to the east side of 51st Street. There were deed restrictions that specified what could be built, what the setbacks were, the cost of the houses, etc. For some reason, the east side of 51st street does not really conform to the rest of Story Hill 1. You may want to lop that off. One of the earliest houses there did match the rest but was brick veneered later. About 80% of the houses in SH1 were designed by George Schley & Sons. One of the Schleys married into the Story family. George and the 2 sons as well as their wives all lived here for a period of time. They all had stucco-clad houses. There is a consistency in the scale and materials (mostly stucco, lots of Arts & Crafts/Craftsman, although a few got vinylized in recent years). The houses designed by other architects tended to be masonry and are scattered here and there.

Story Hill 2 ran from Blue Mound south to Sunnyside. Story Hill 3 ran from Sunnyside south to story Parkway (originally called the West Allis Parkway). Their development pattern was different and they were slightly later.

Carlen

From: Michael McQuillen [mailto:mmcquill@hrltd.org]
Sent: Monday, July 09, 2012 11:37 AM
To: Hatala, Carlen
Subject: FW: I-94 east/west and Stadium Freeway

I just wanted to follow up on this email especially in regard to your thoughts on the potential boundary of a Wisconsin Avenue-Woodlawn Court historic district. Thanks.

Mike

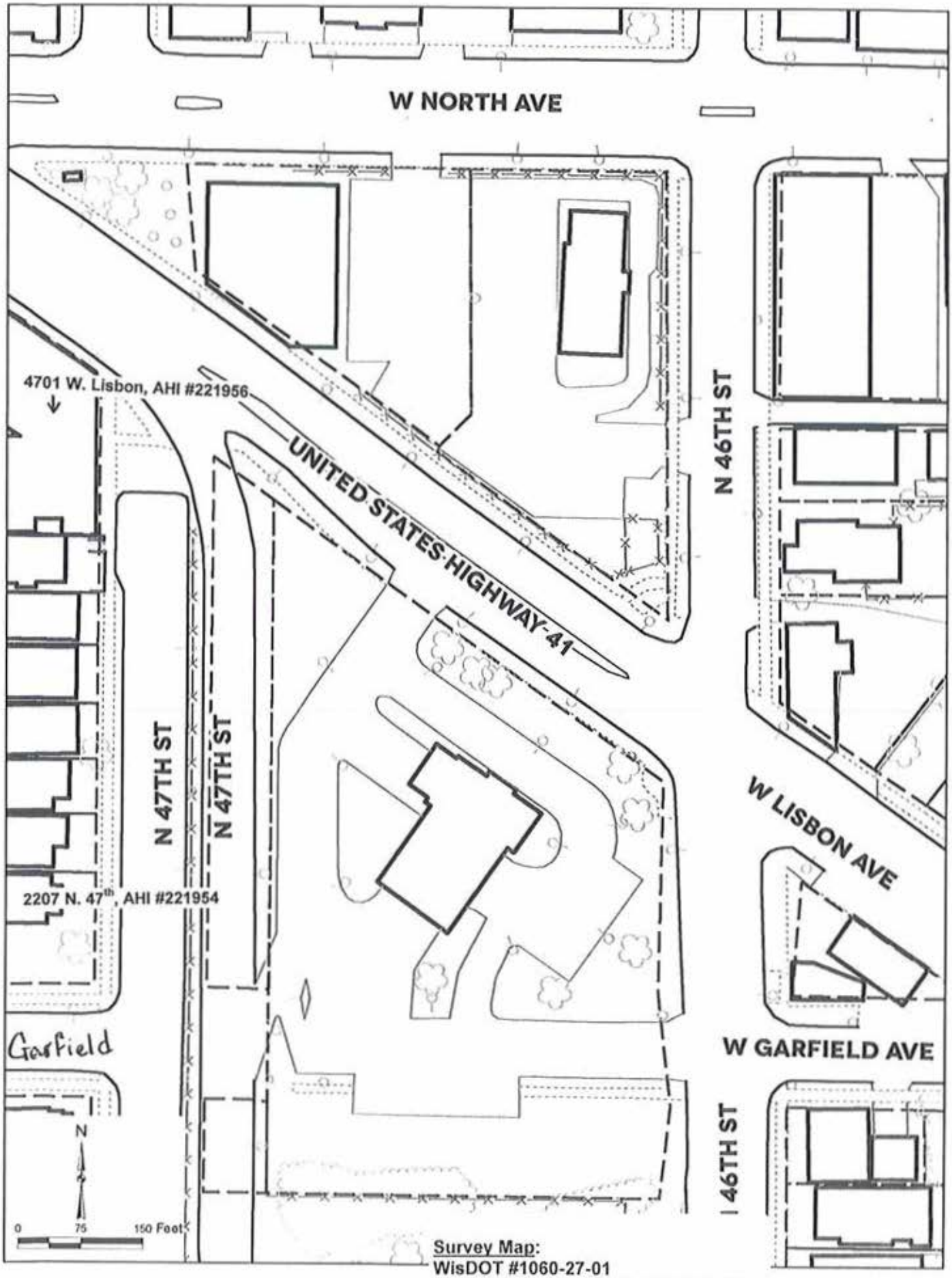
From: Michael McQuillen [mailto:mmcquill@hrltd.org]
Sent: Wednesday, June 27, 2012 5:11 PM
To: chatal@milwaukee.gov
Subject: I-94 east/west and Stadium Freeway

Carlen –

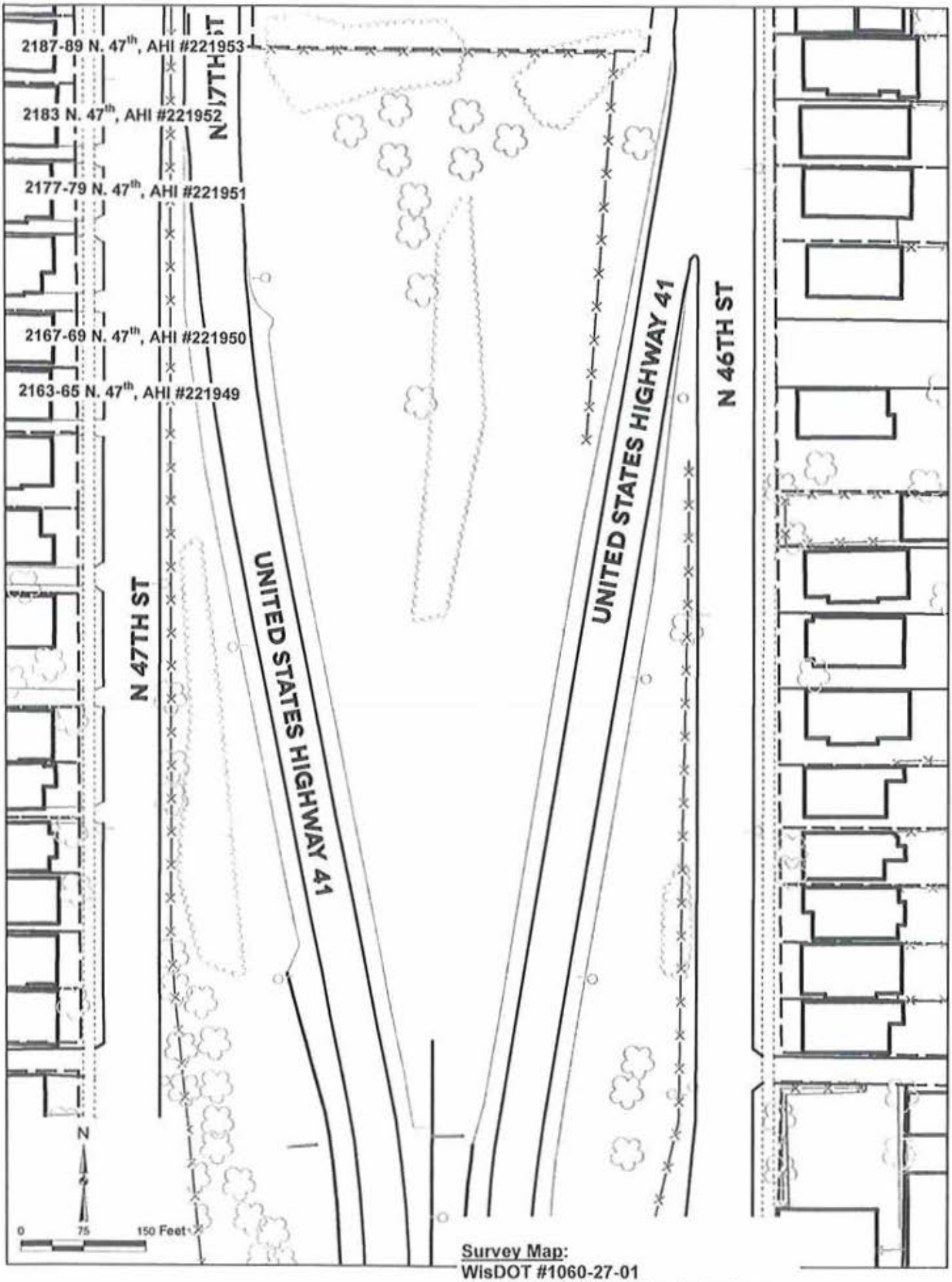
Traci and I drove areas of my I-94/Stadium Freeway project where a "proposed historic district" had been identified in the Wisconsin Historic Preservation Database (WHPD) in the past to see if, indeed, there might be districts. I simply wanted to let you know our findings and ask your input:

"Washington Park West" district –

5 properties in my project area (i.e. along 47th Street, which runs parallel to the Stadium Freeway on the west) were included in this proposed district: 1743 N. 47th; 1803-05 N. 47th; 1809-11 N. 47th; 1821 N. 47th Street; and 4704 W. Lloyd Street. We looked at the area north and east of the listed W. Washington/N. Hi-Mount Blvd. Historic District primarily



Survey Map:
WisDOT #1060-27-01
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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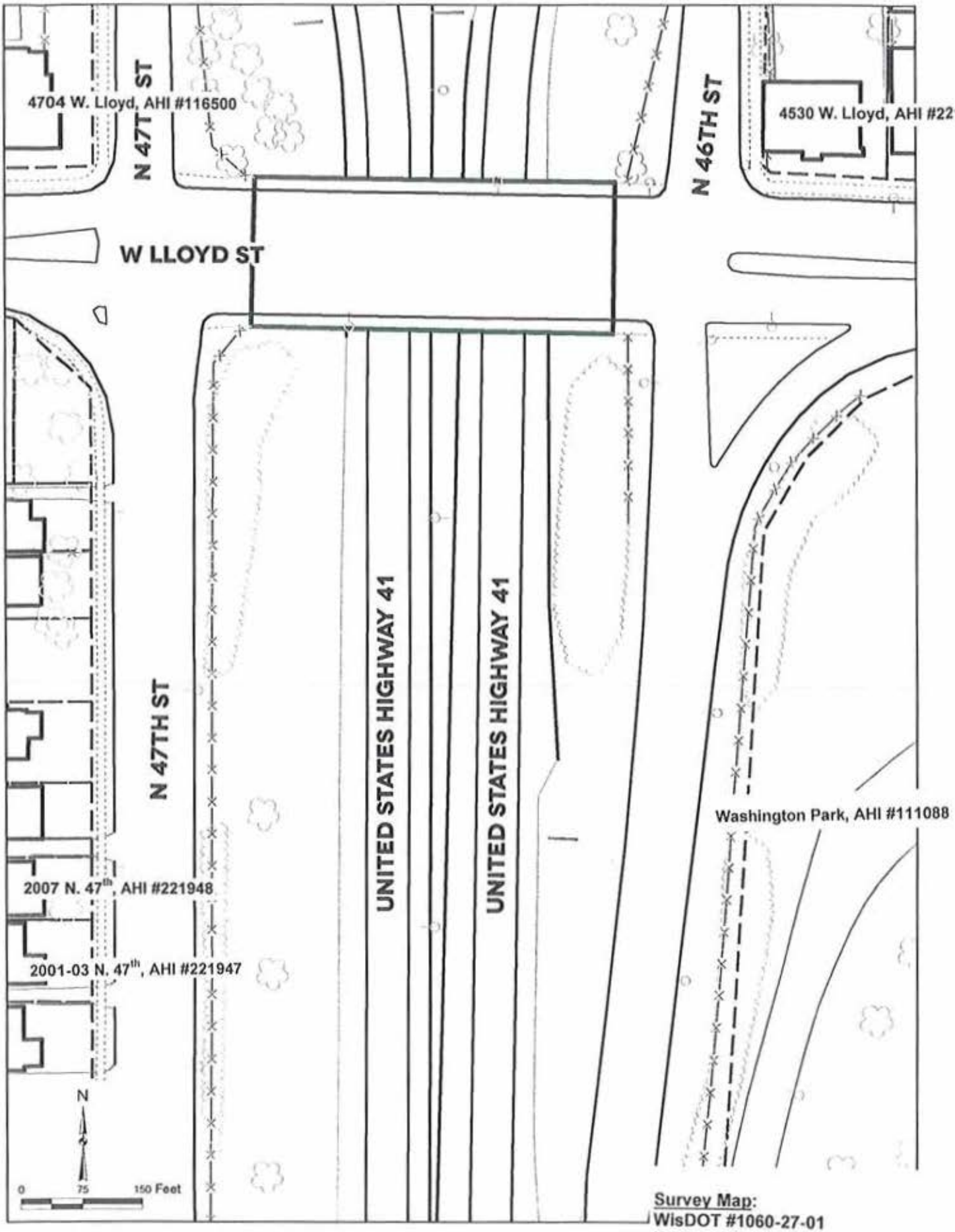

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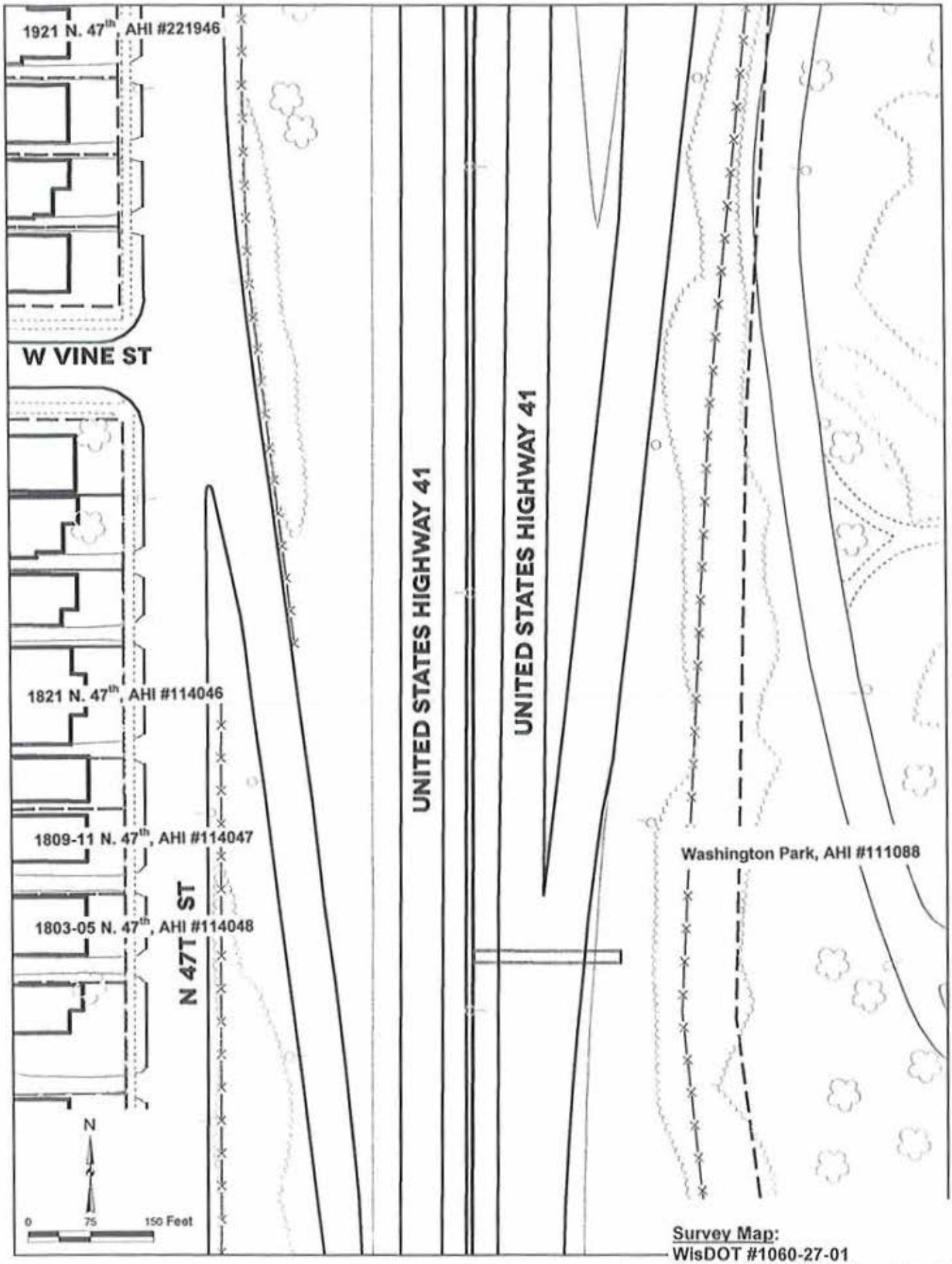

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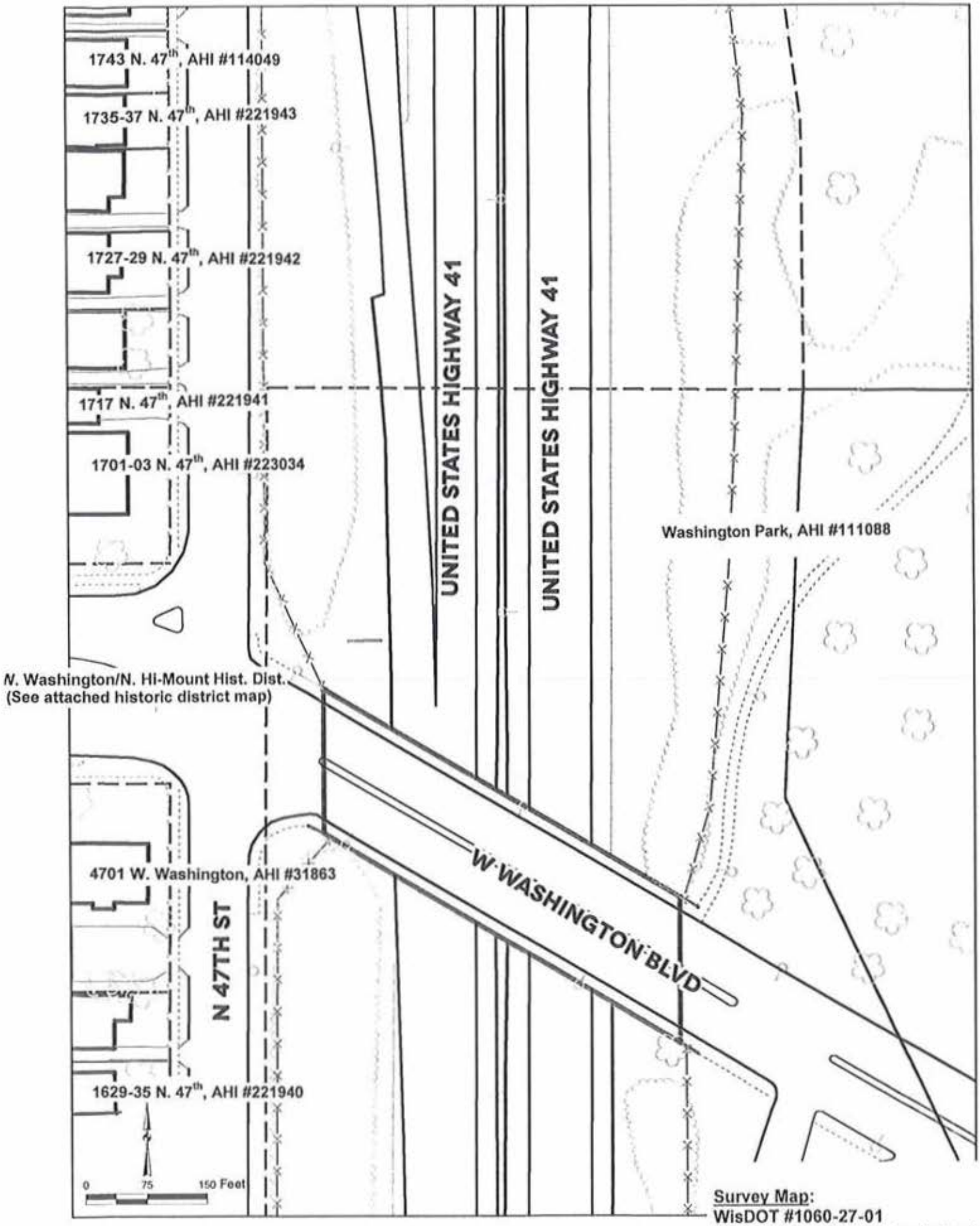

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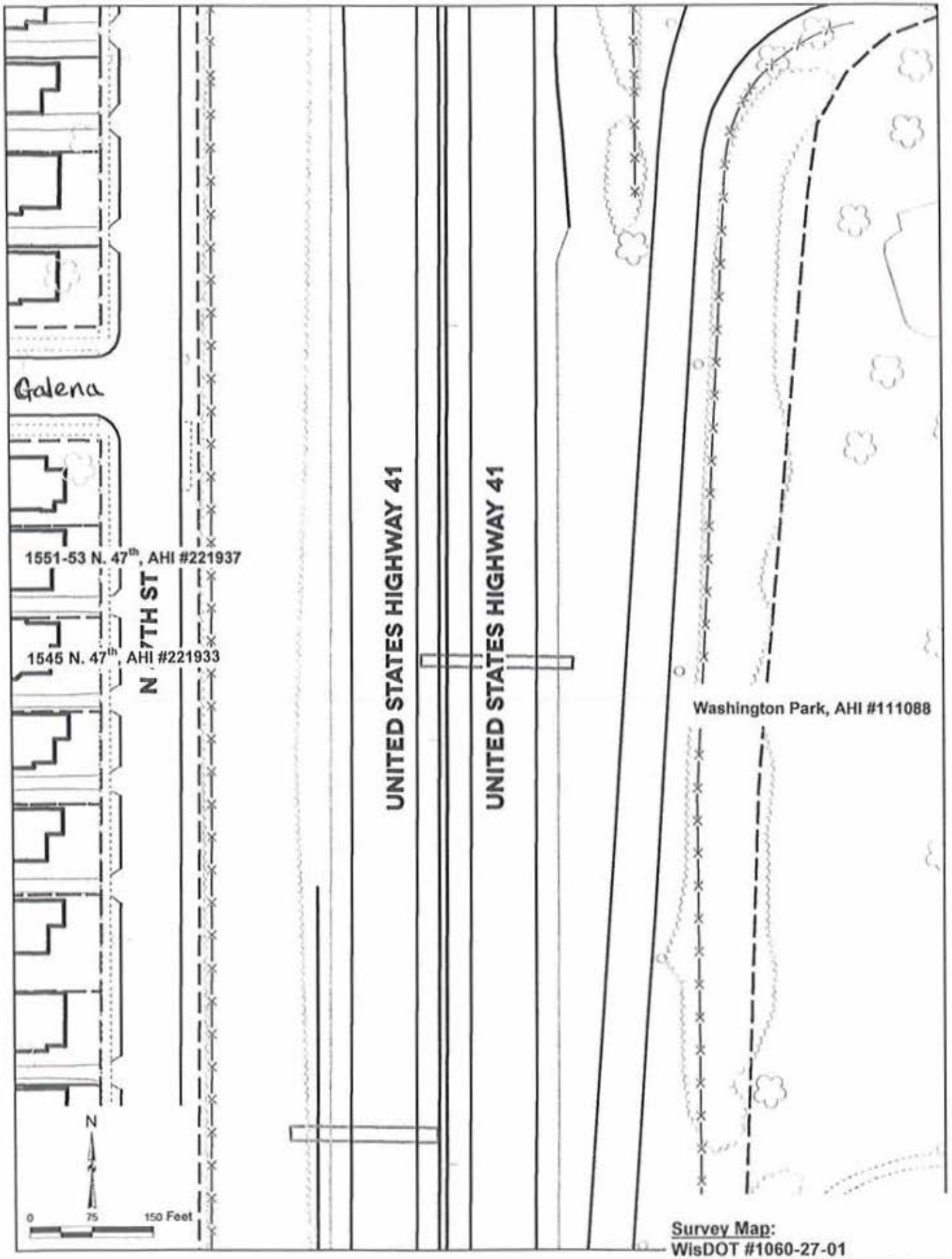

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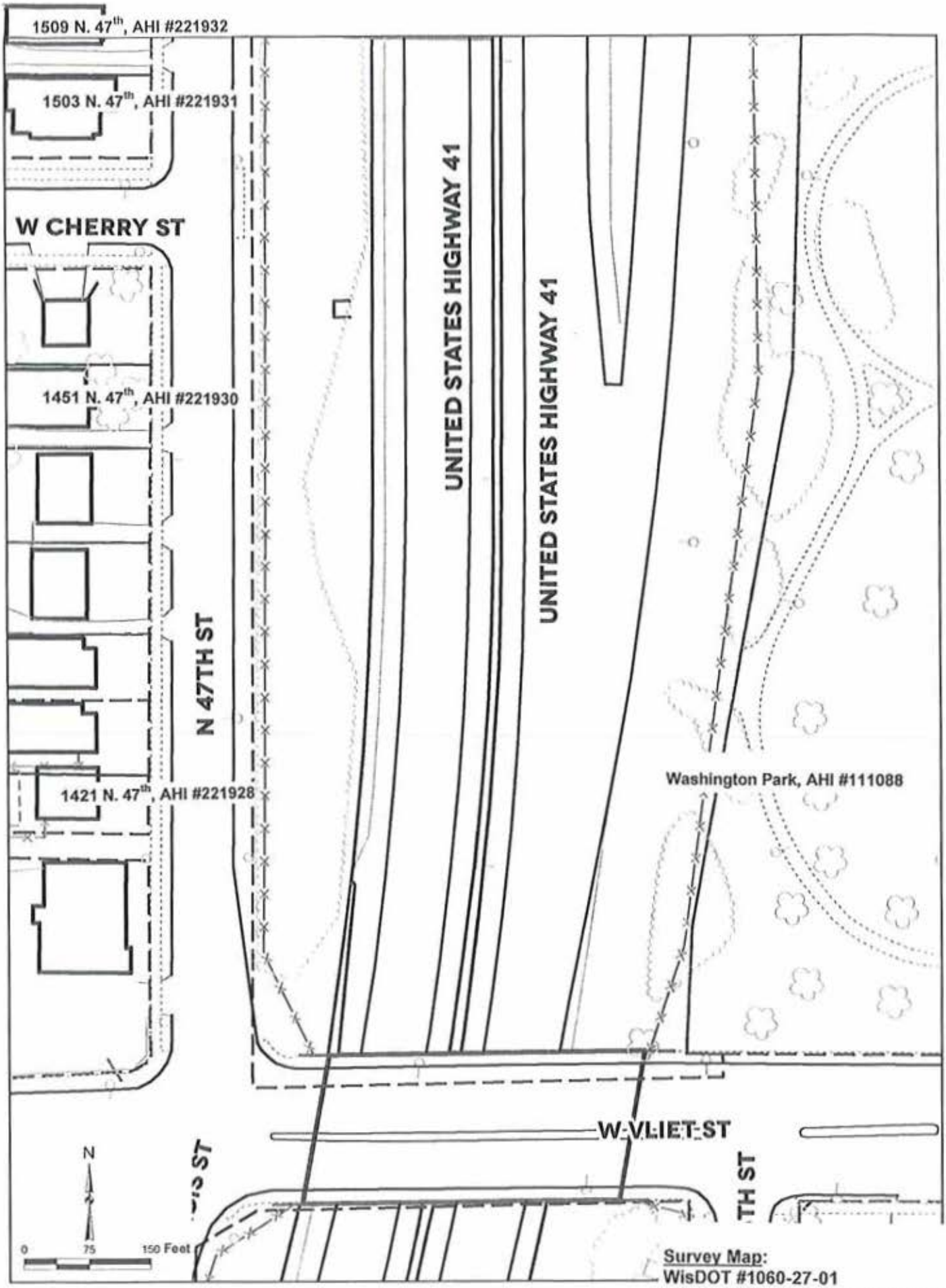

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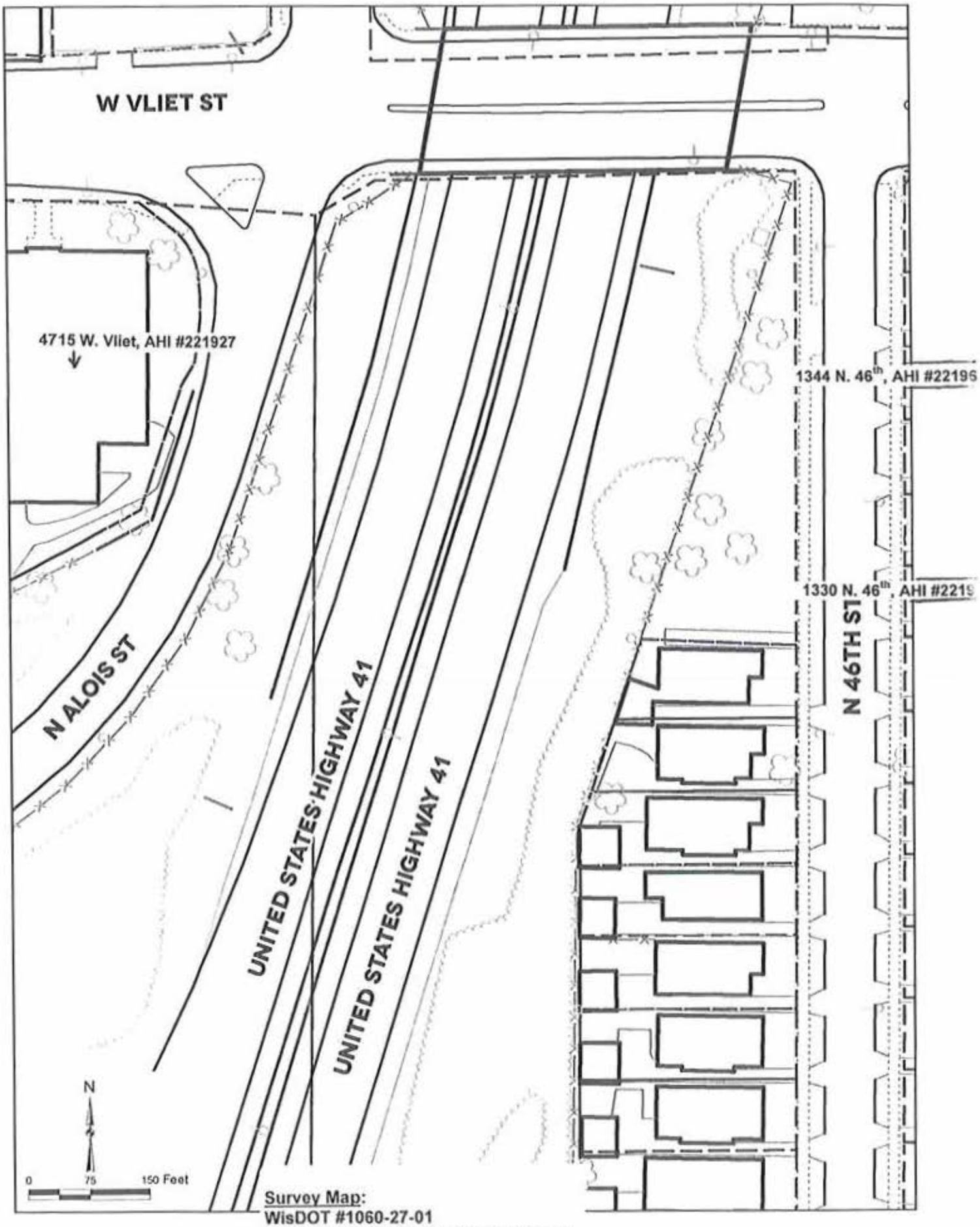

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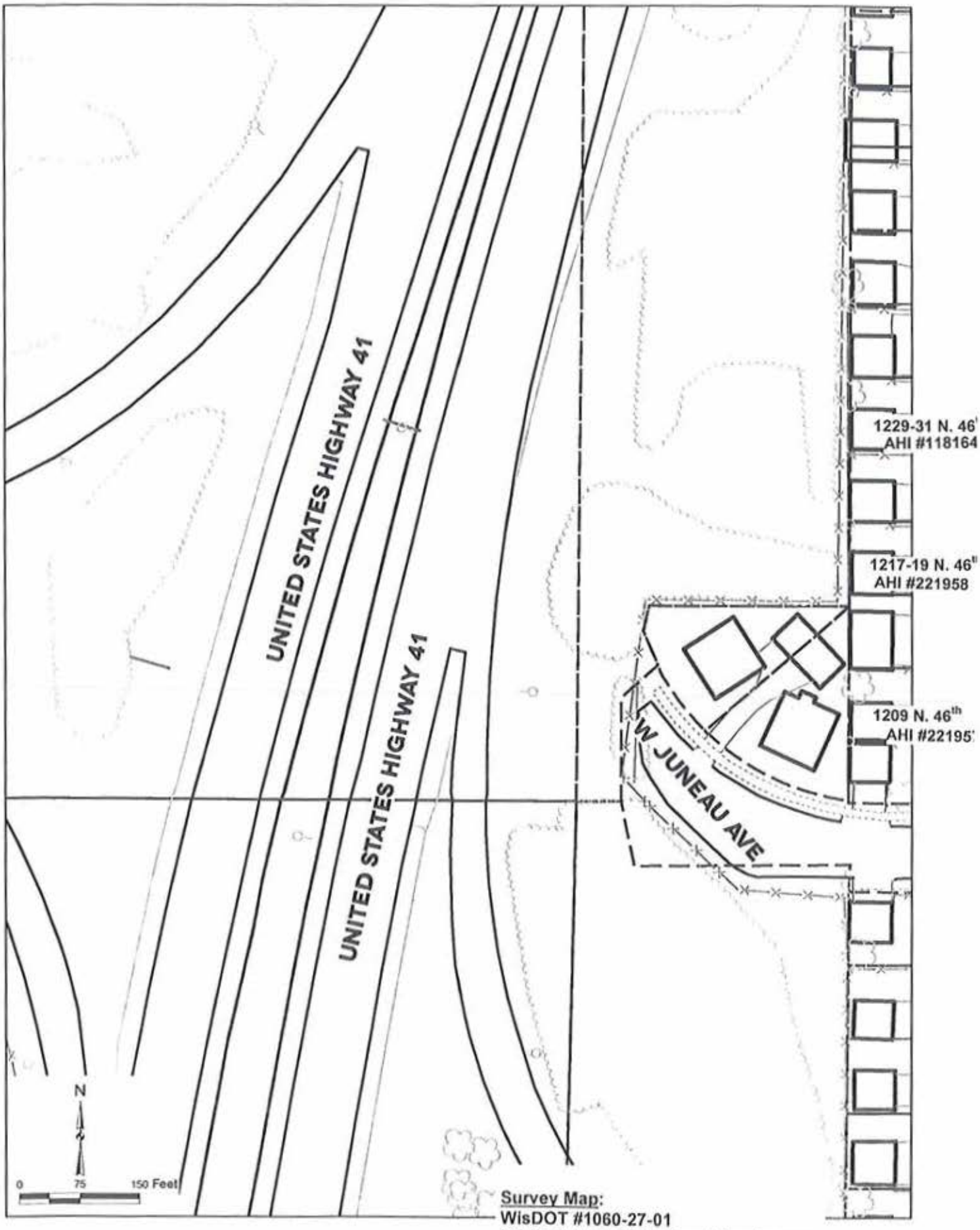

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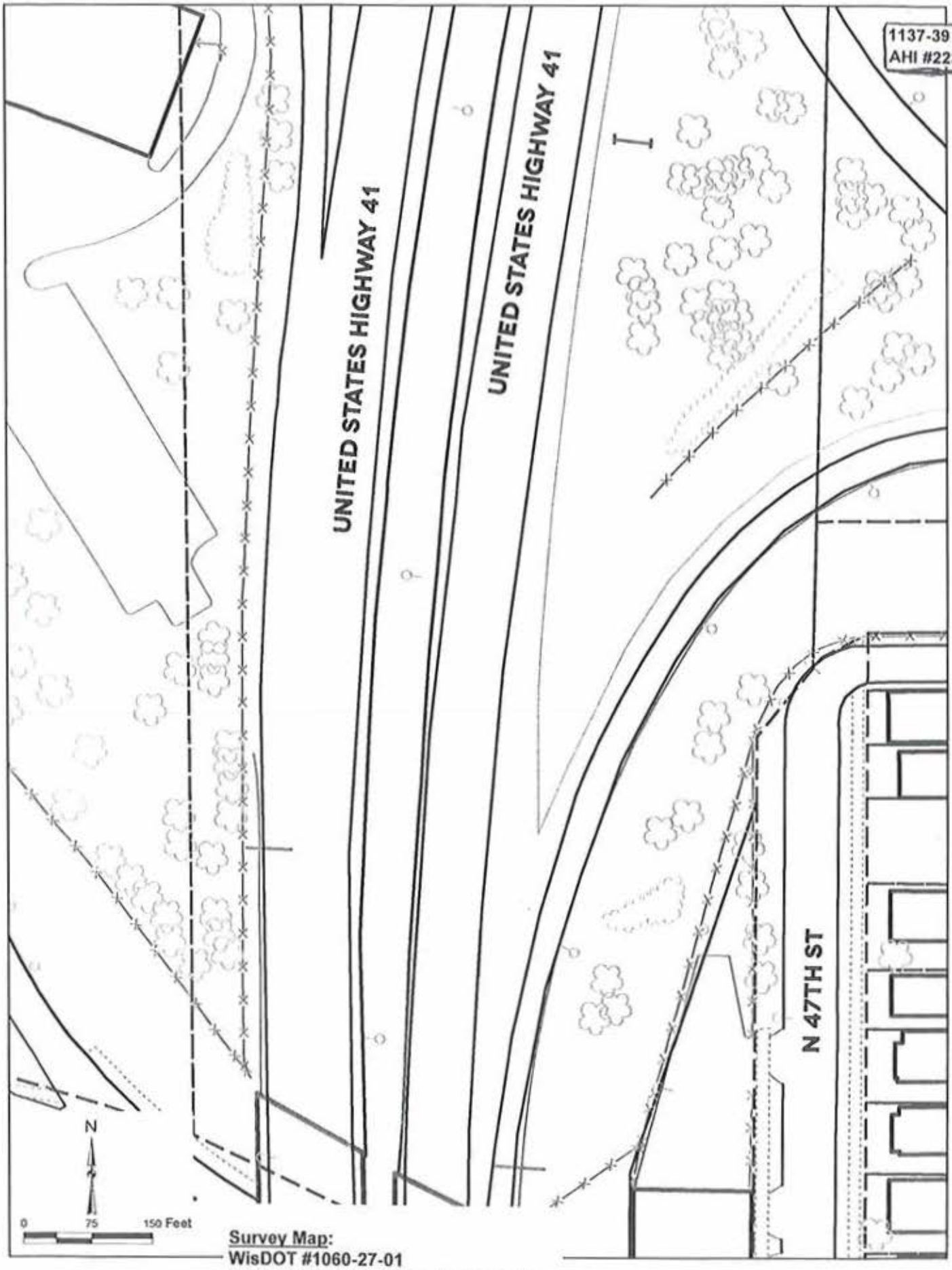

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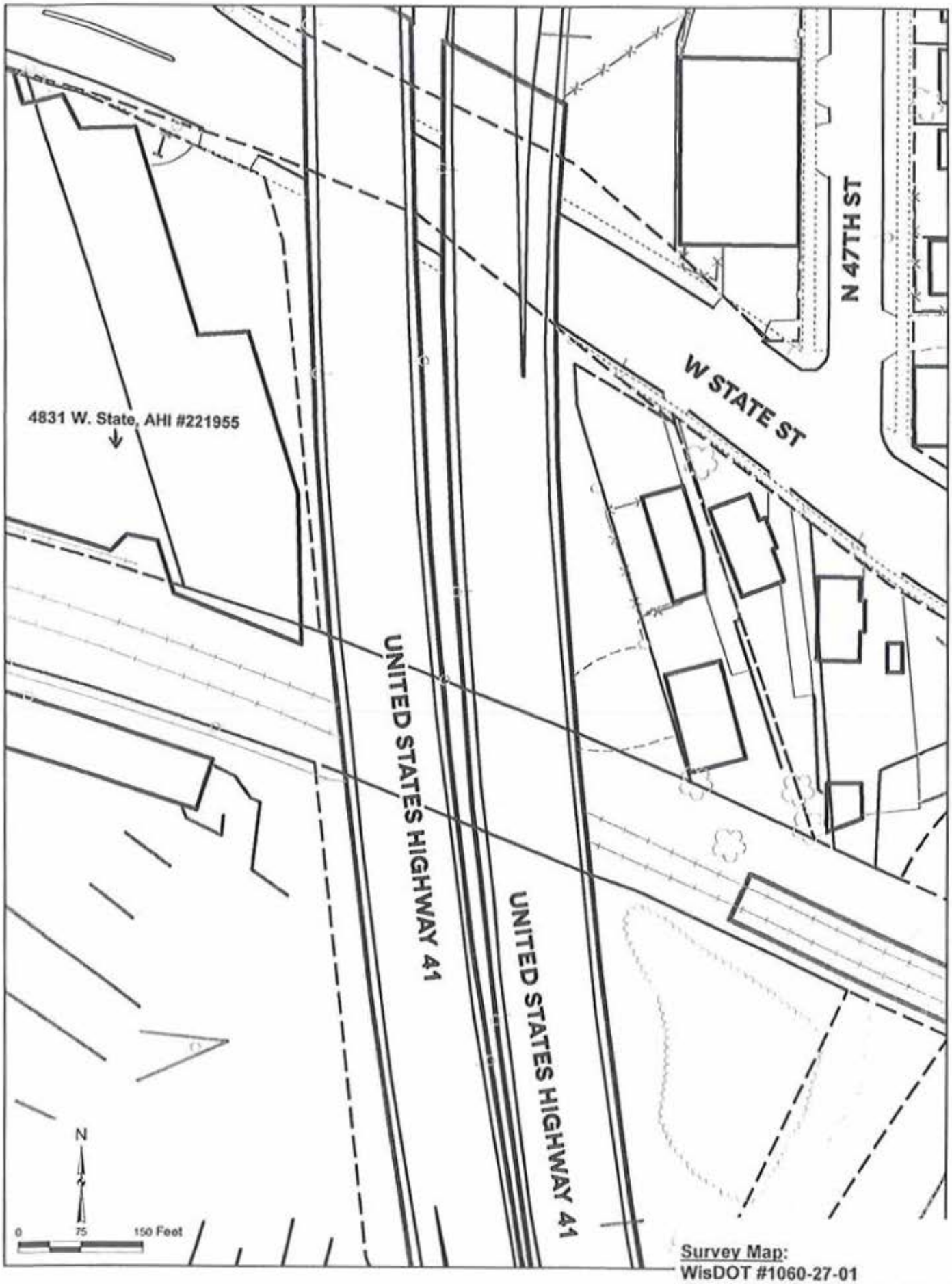

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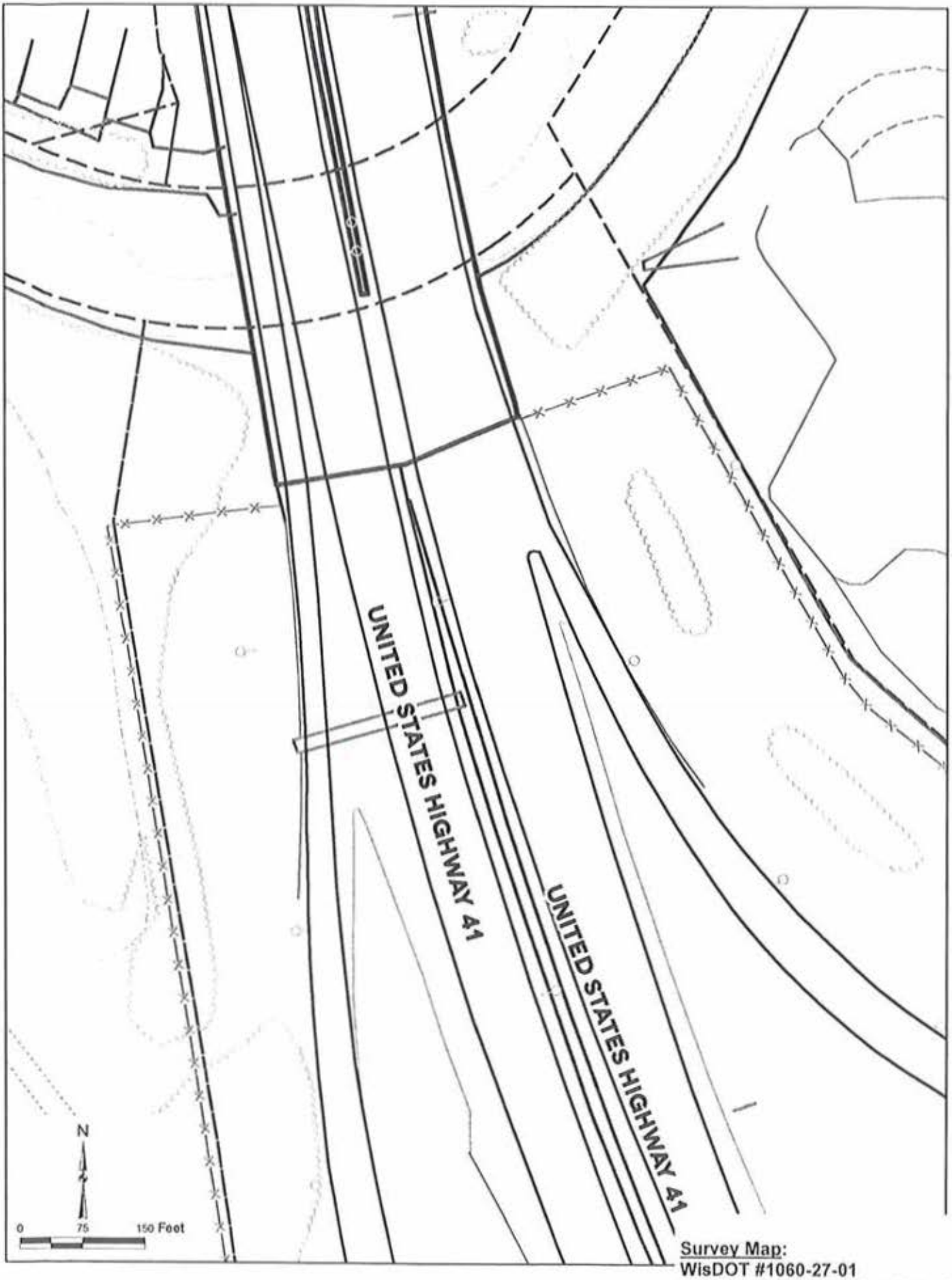

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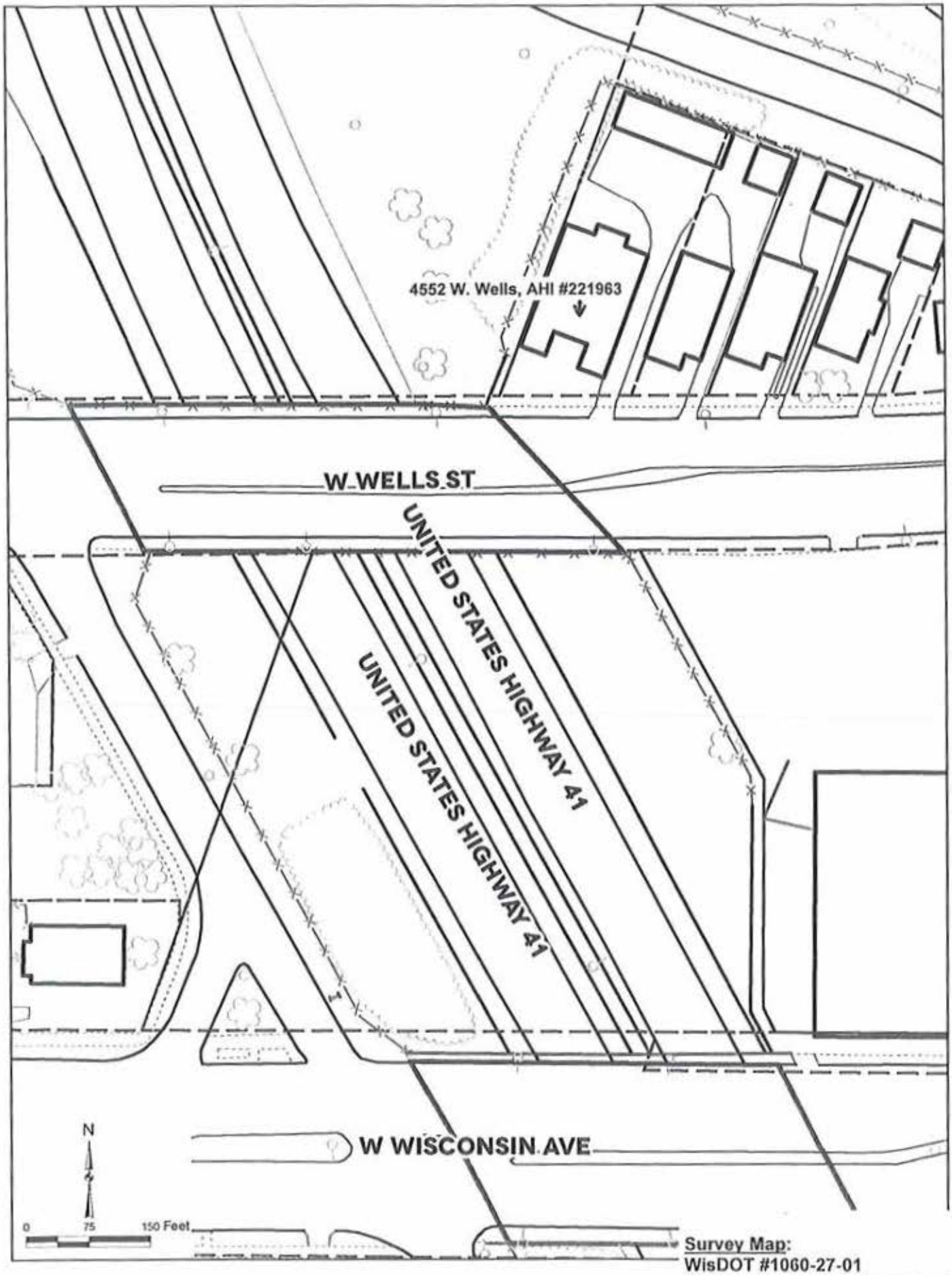

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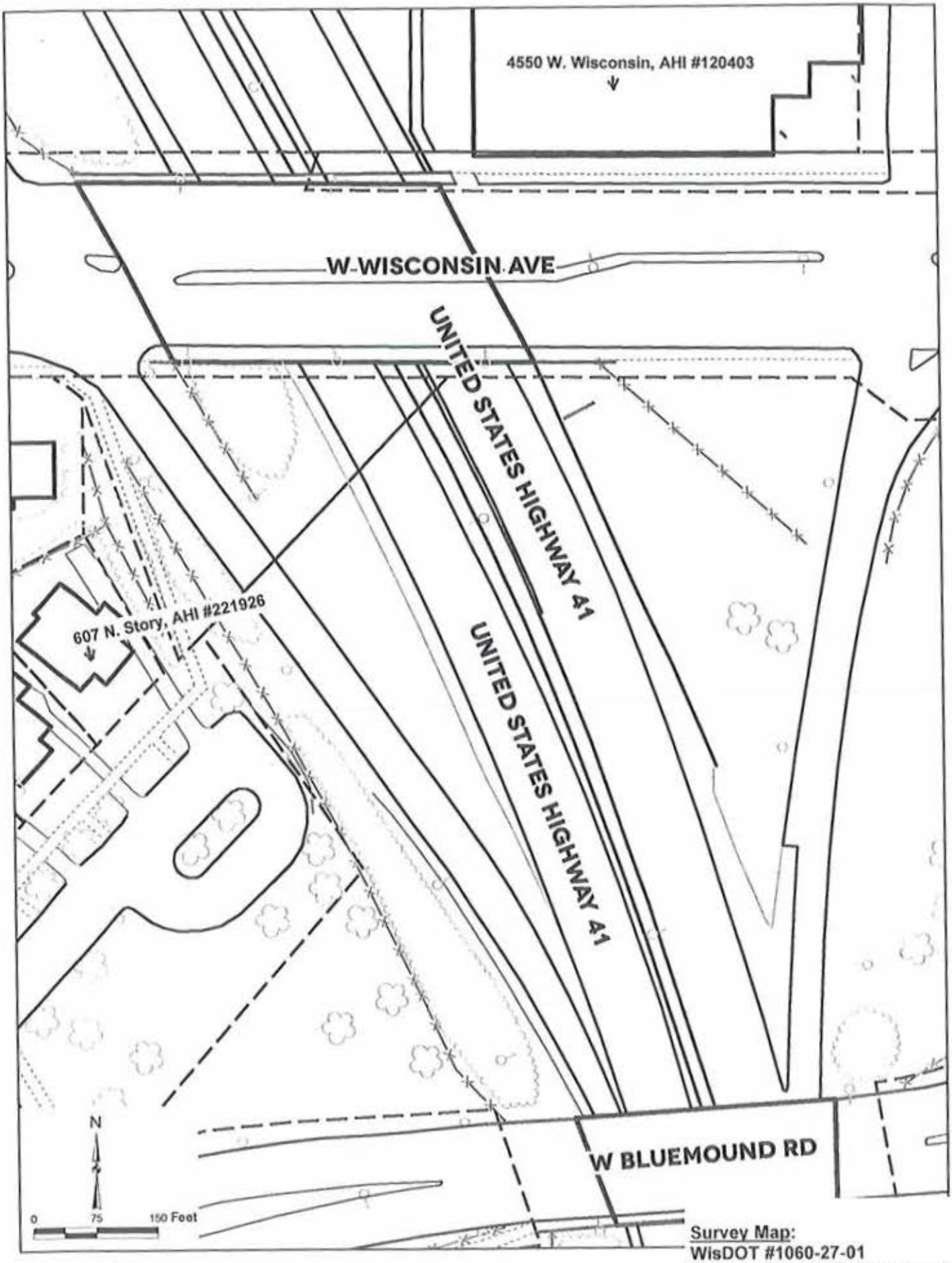

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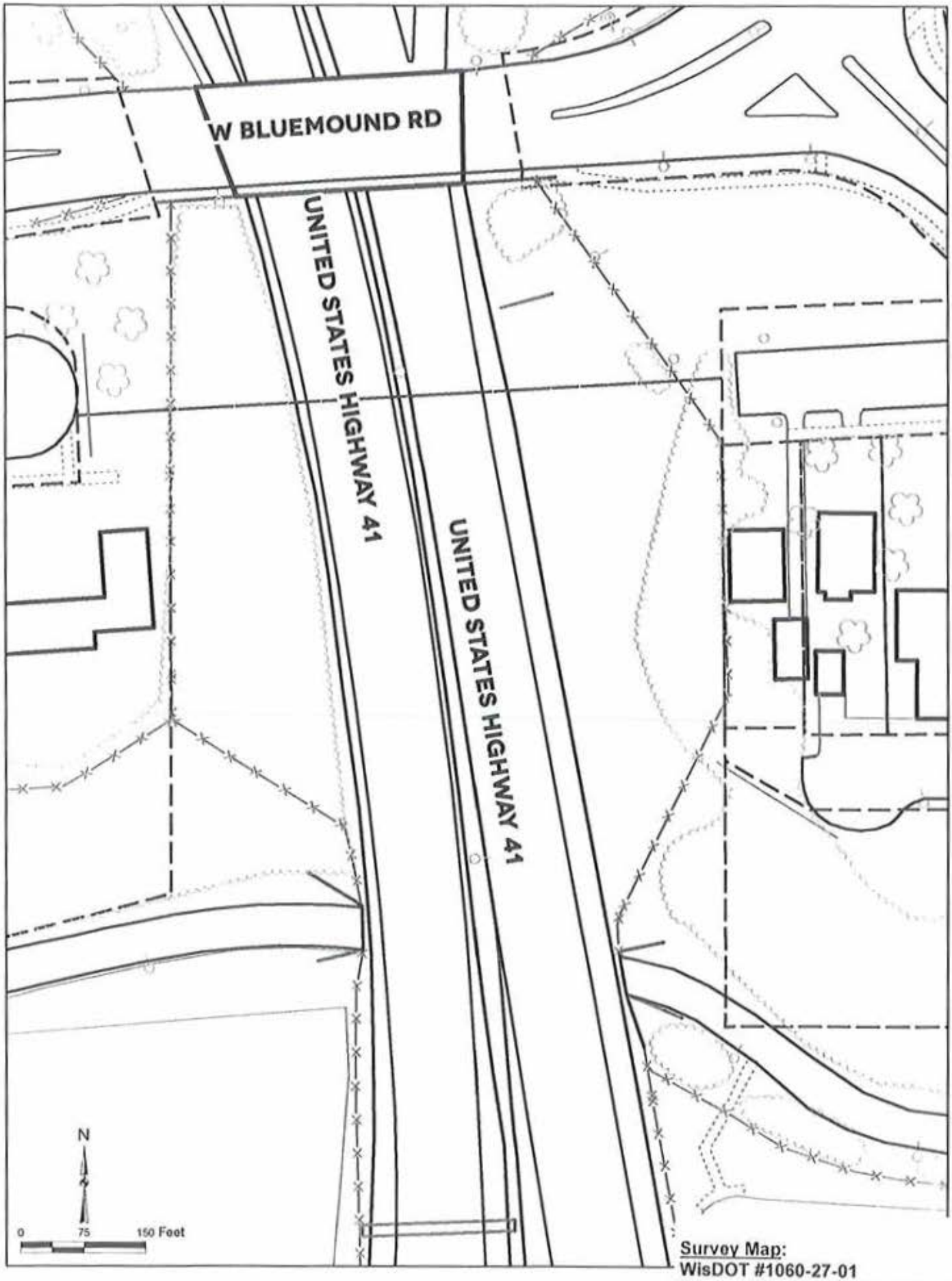

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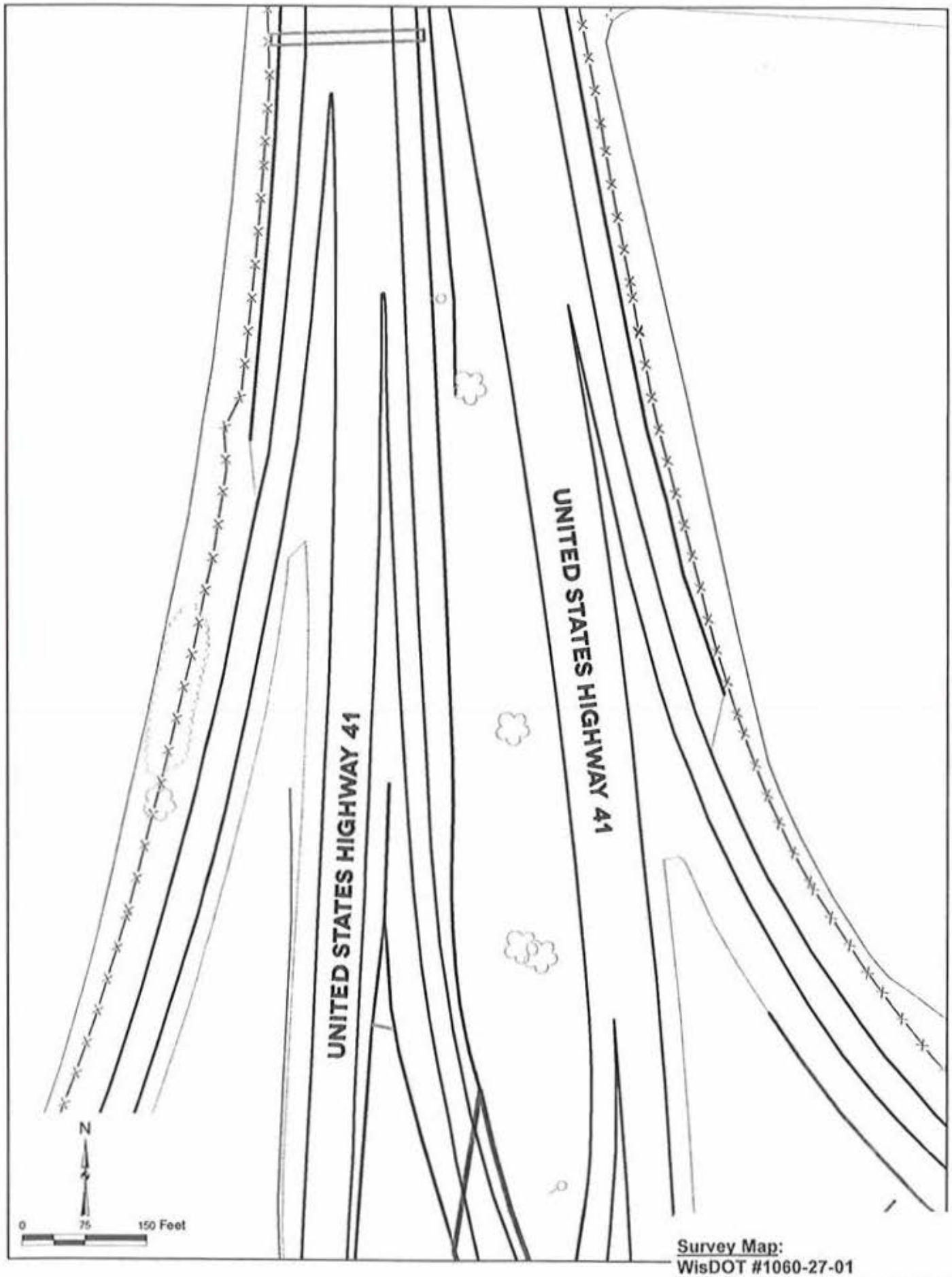

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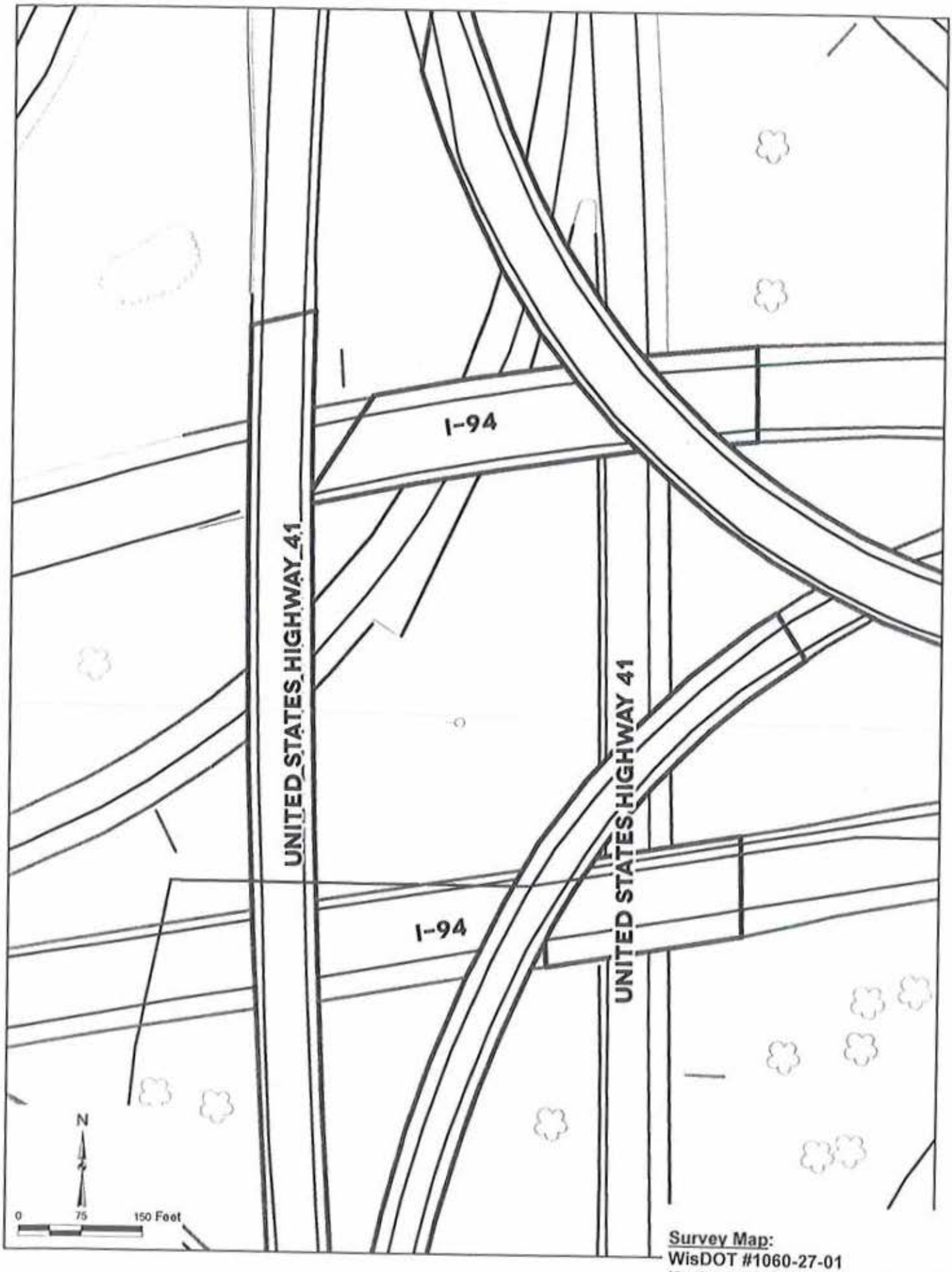
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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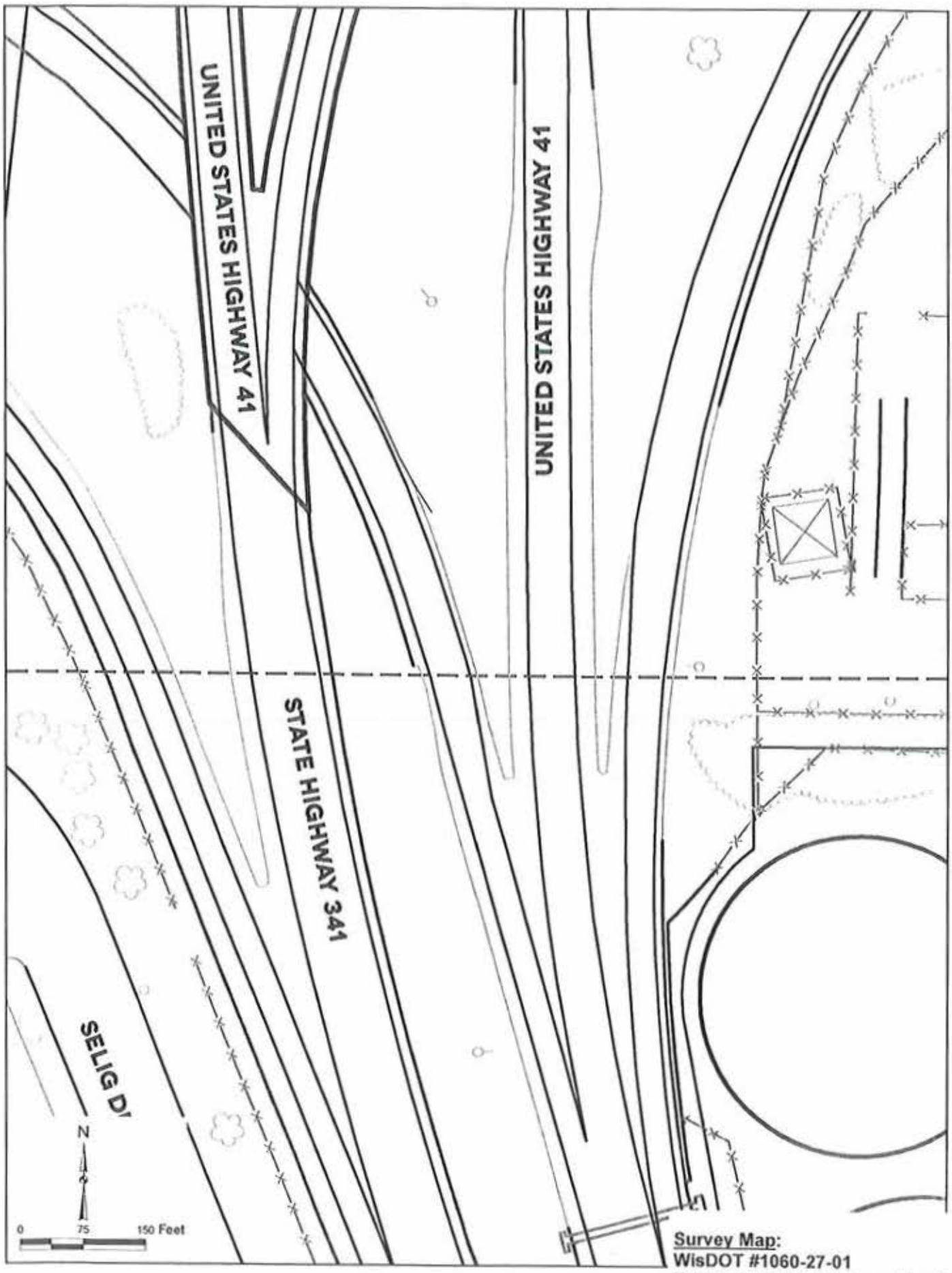
WisDOT #1060-27-01
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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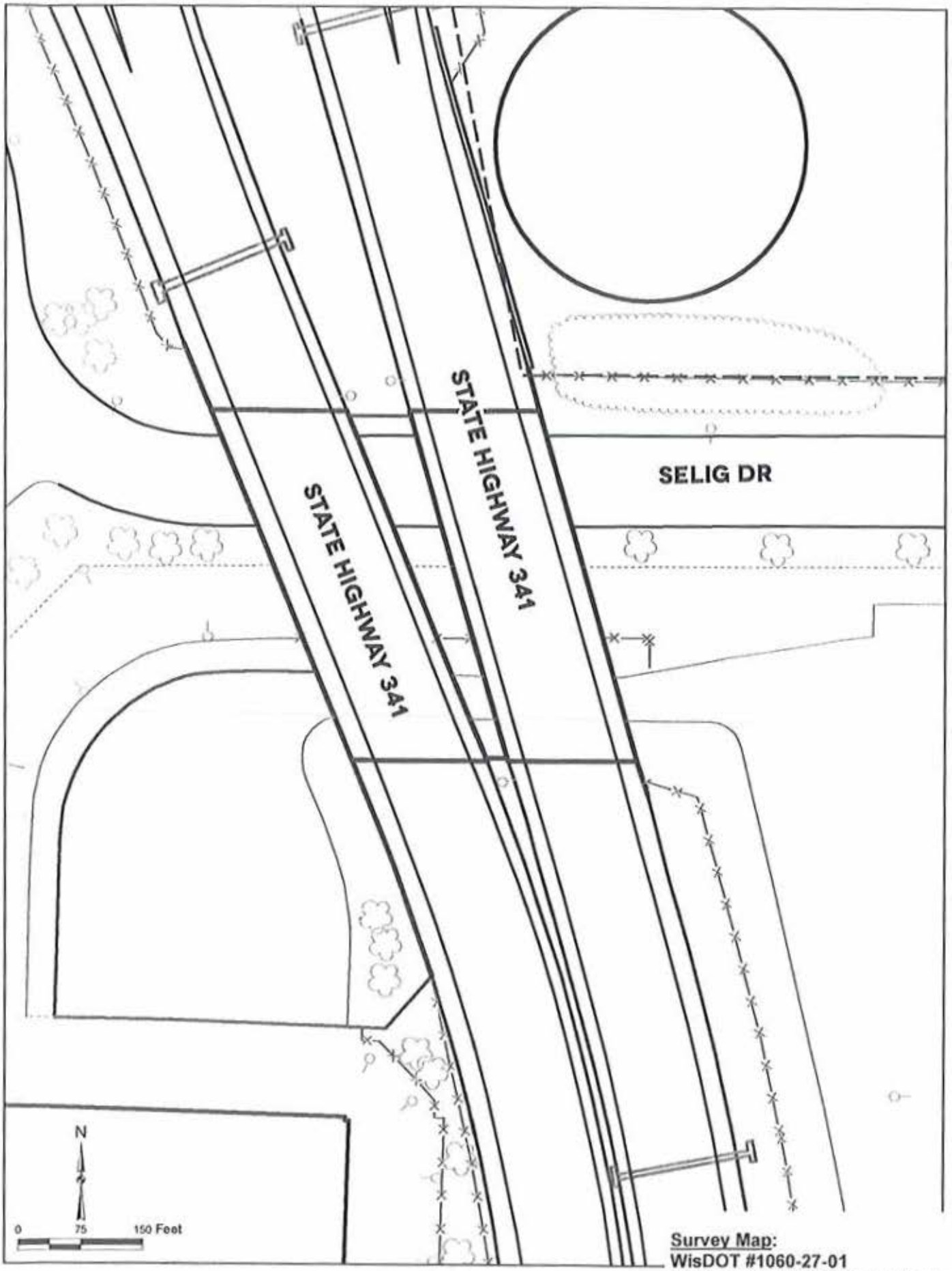
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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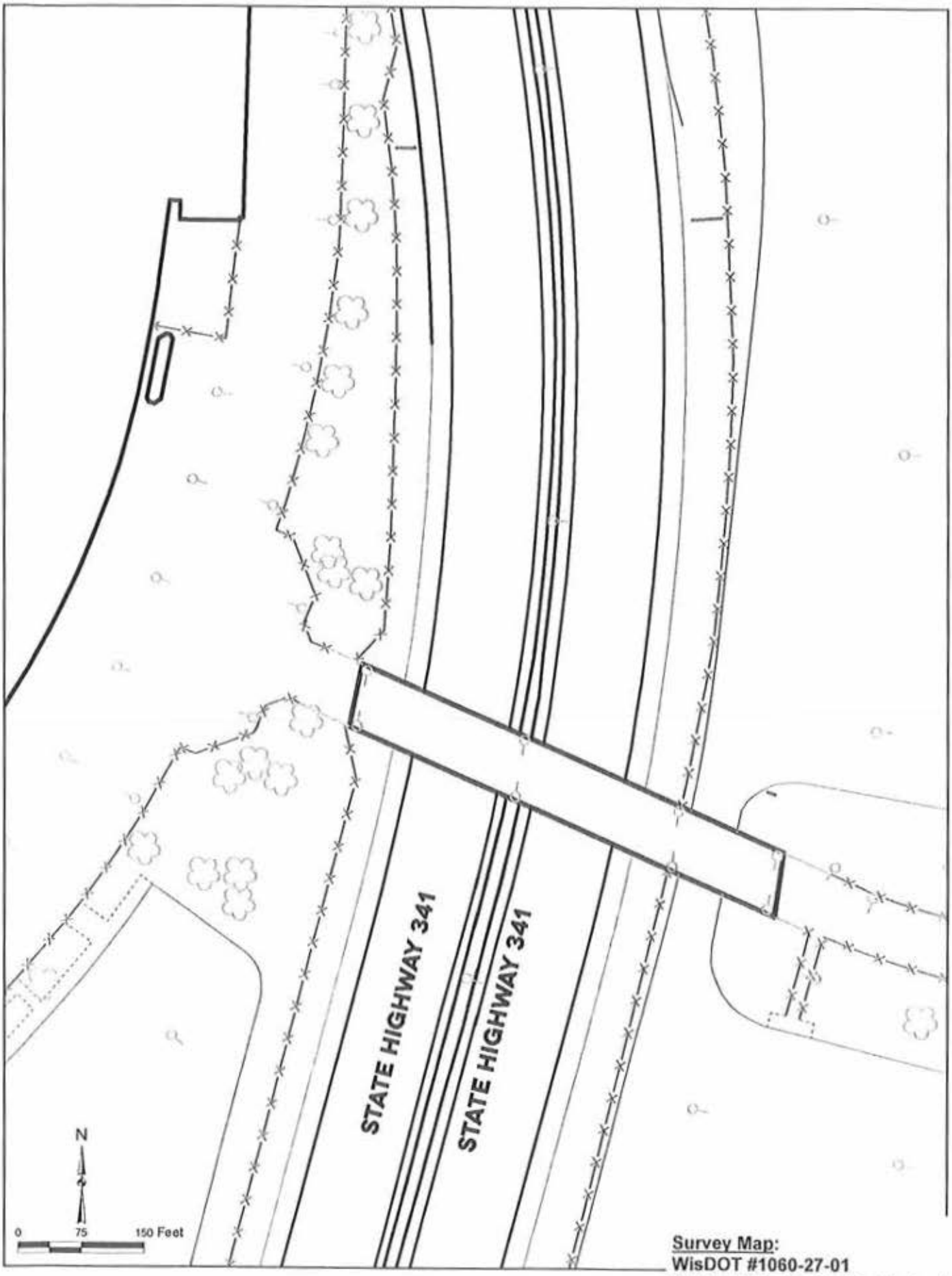
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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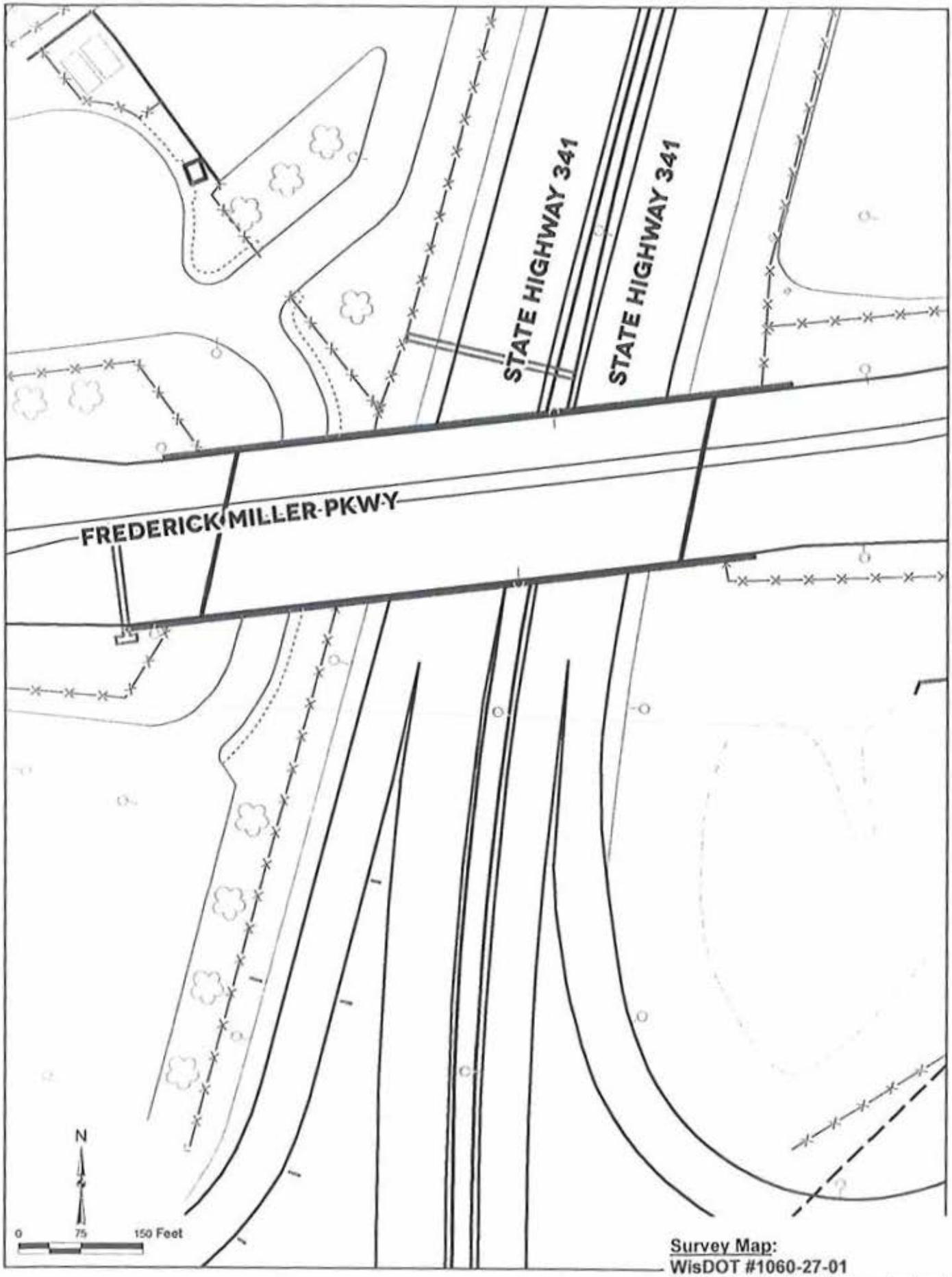
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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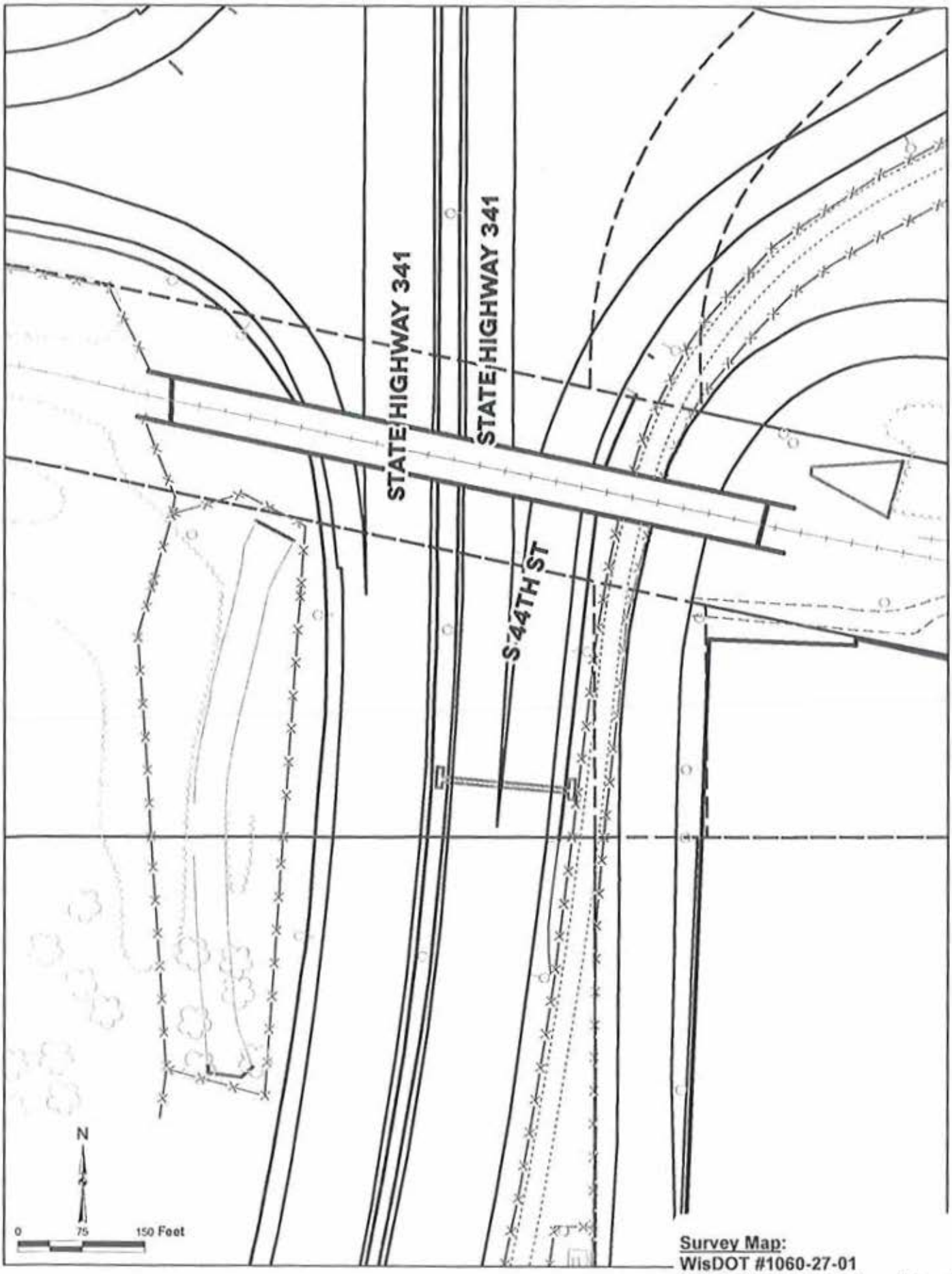
WisDOT #1060-27-01
I94 East-West & Stadium Interchang
City of Milwaukee, Milwaukee Count



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City of Milwaukee, Milwaukee County

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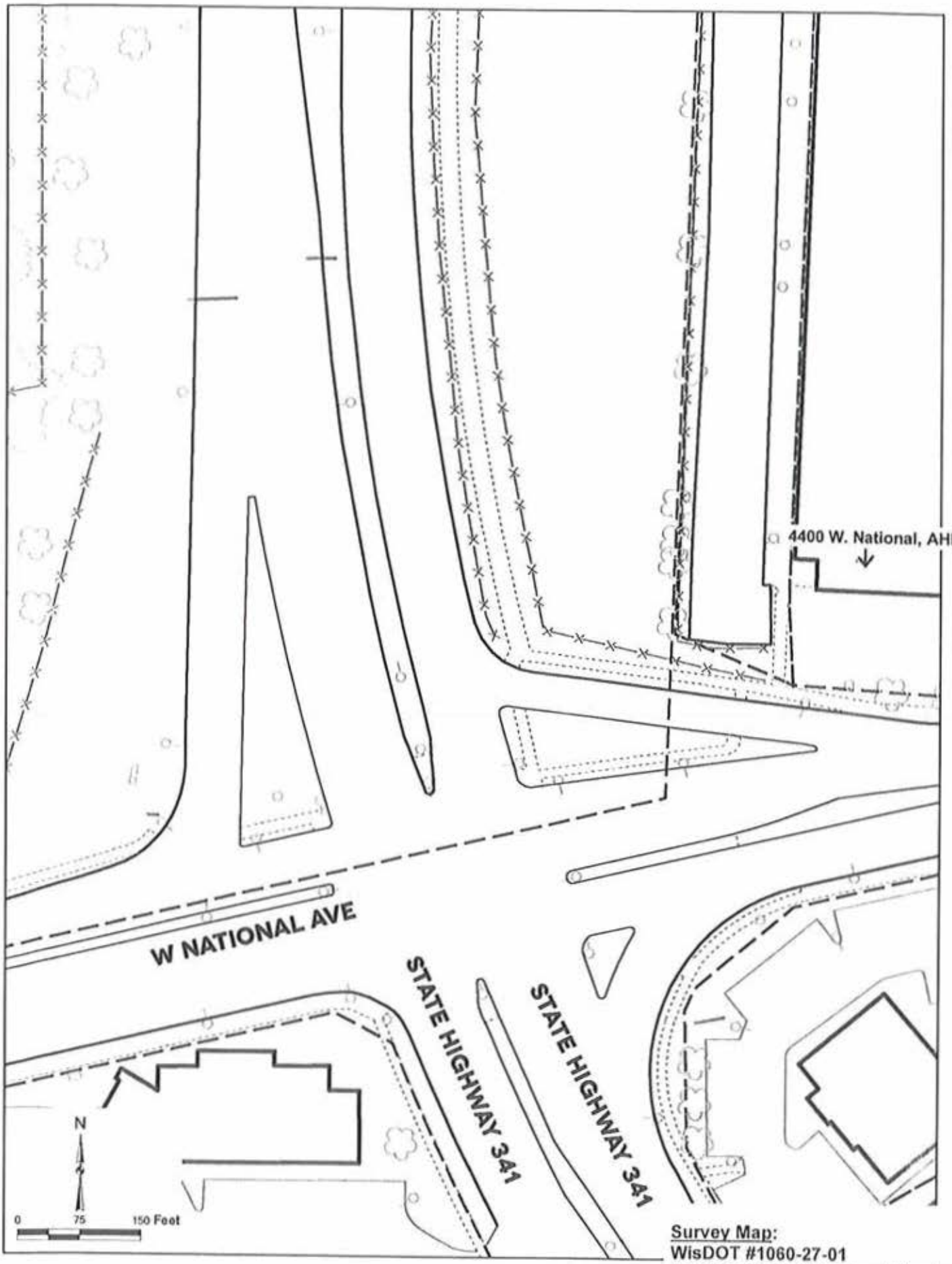
City of Milwaukee, Milwaukee County



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WisDOT #1060-27-01
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County

2504 W. Clybourn
AHI #120458

Survey Map:
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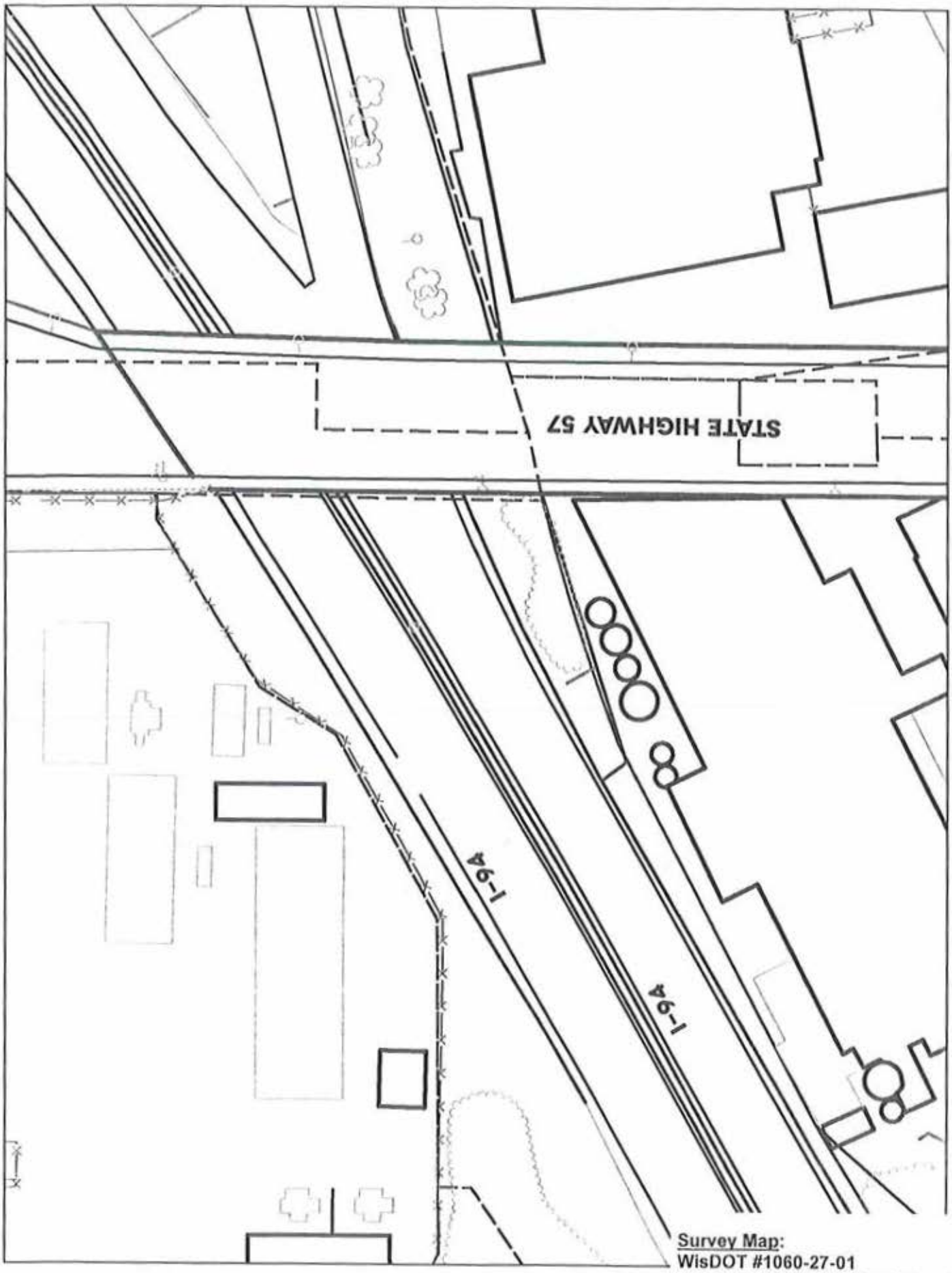
I94 East-West & Stadium Interchang
City of Milwaukee, Milwaukee Count



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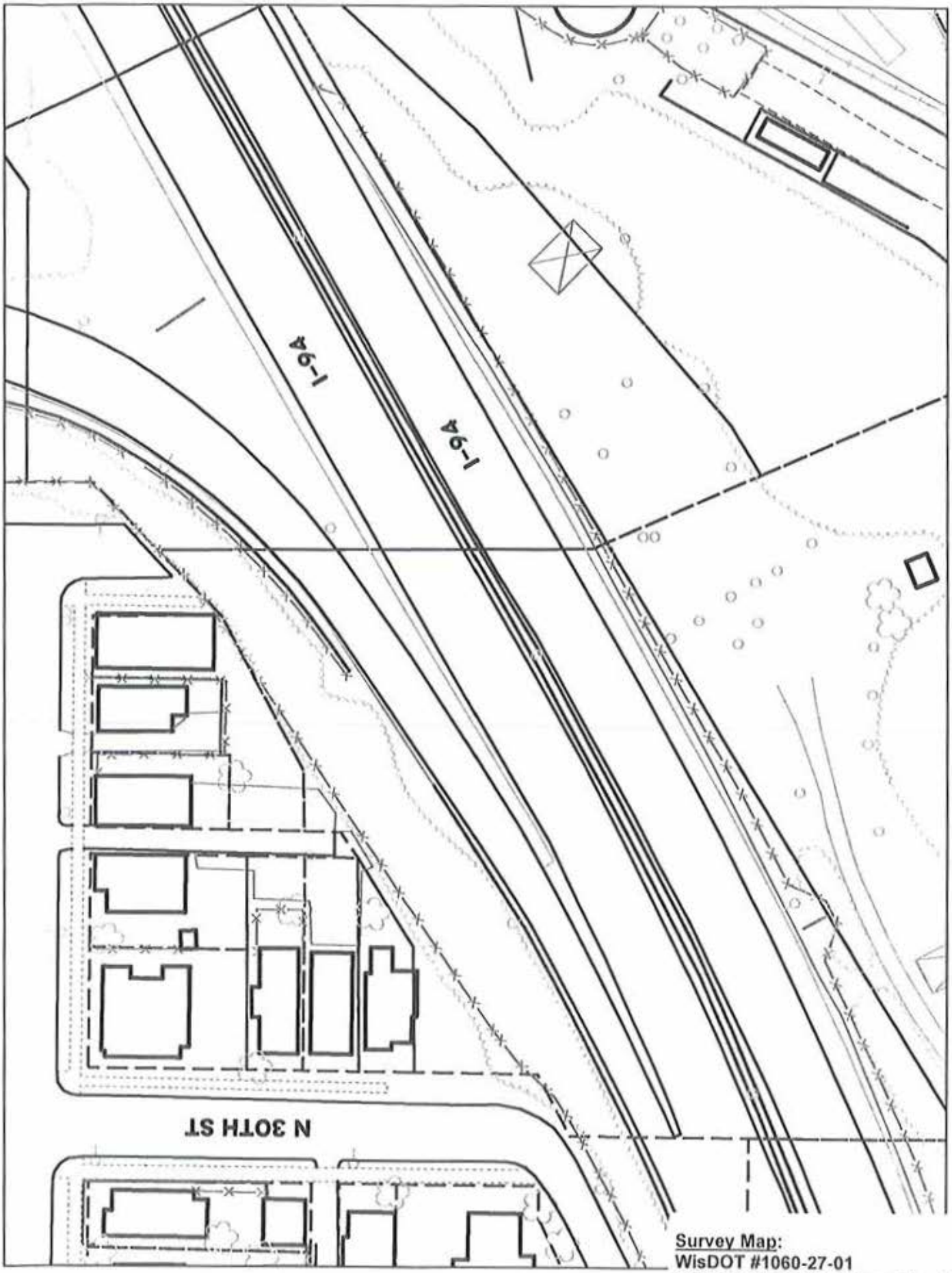
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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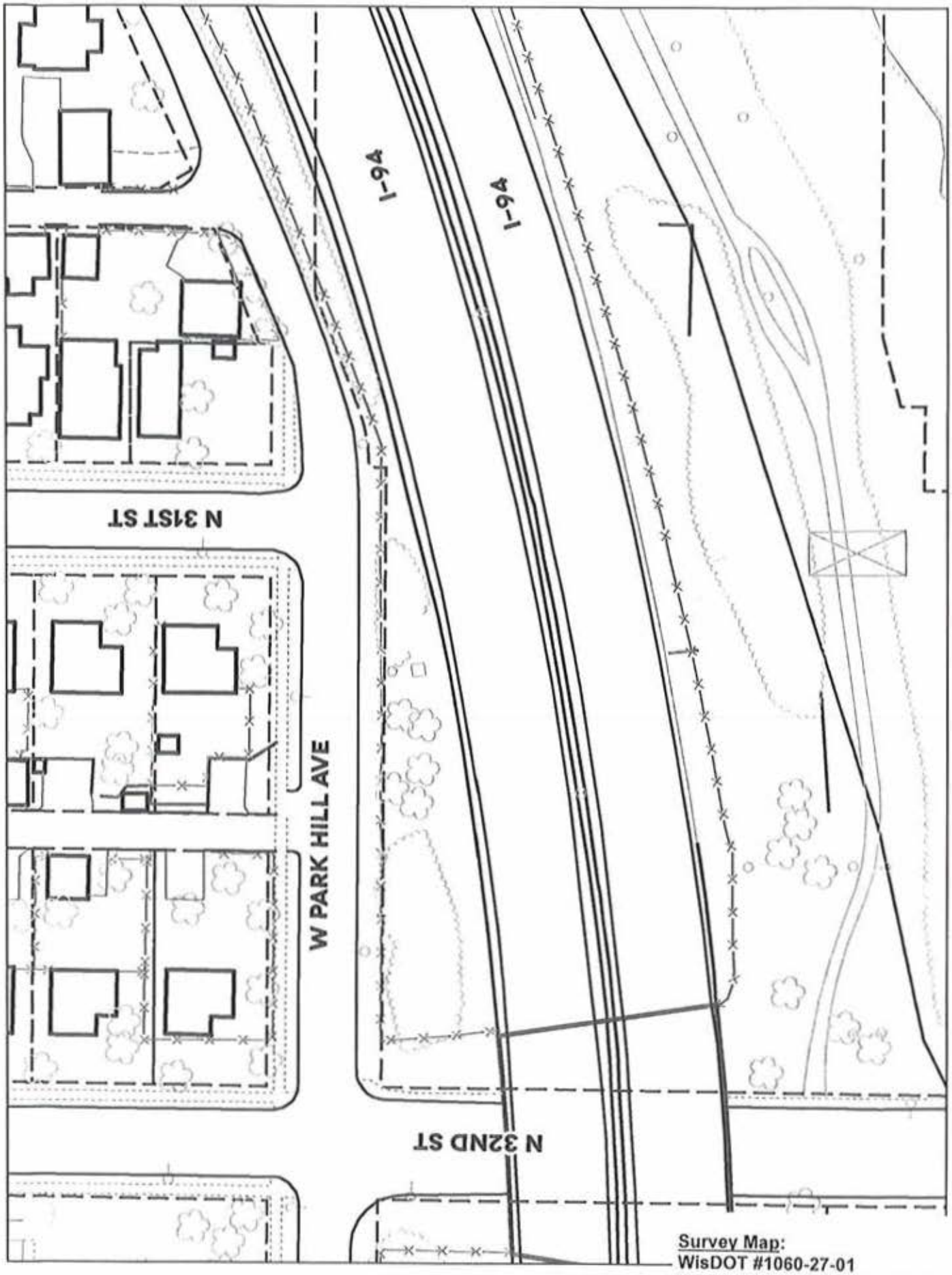
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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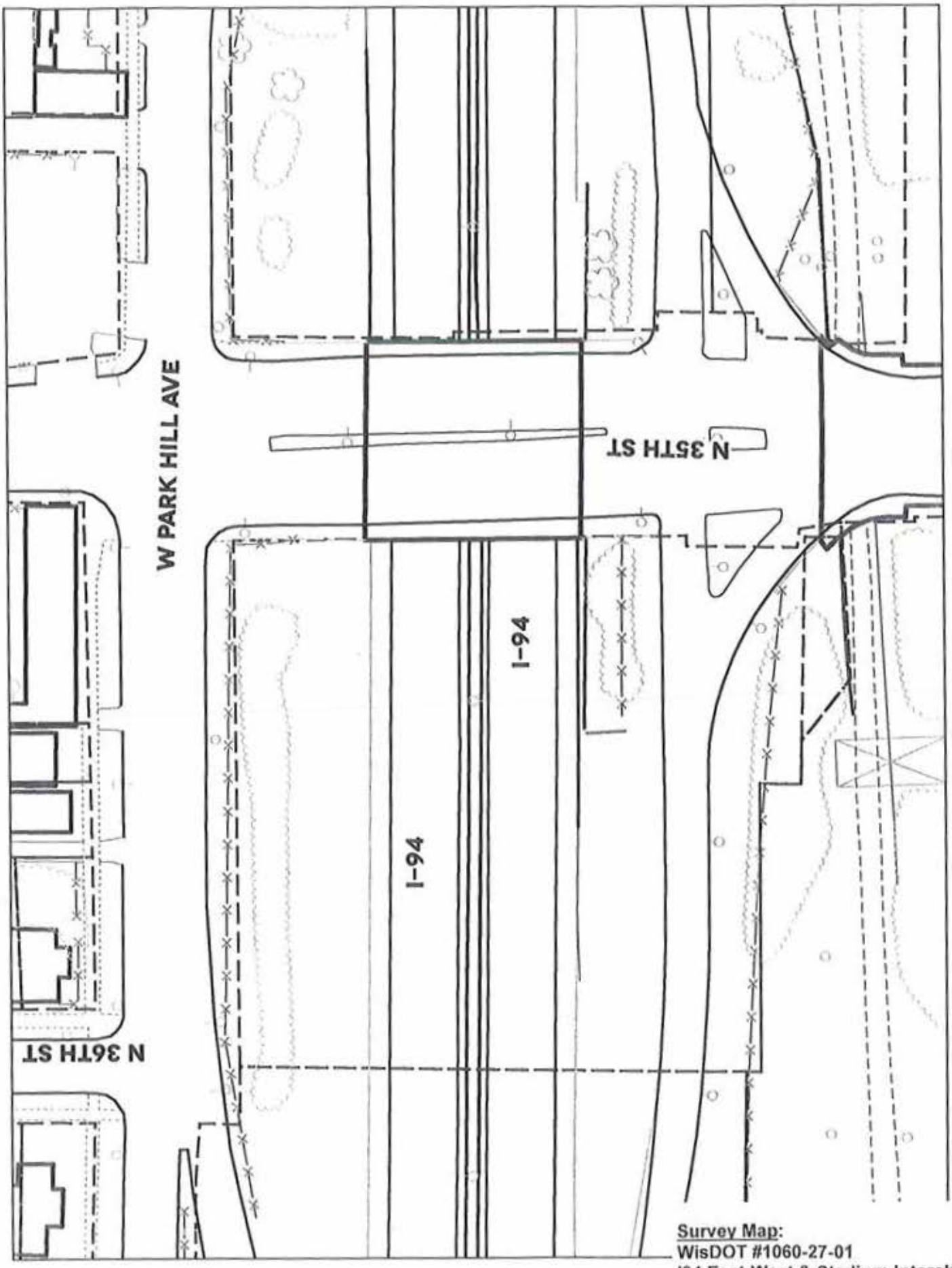
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County

Survey Map:
WisDOT #1060-27-01
I94 East-West & Stadium Interchang
City of Milwaukee, Milwaukee Coun



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City of Milwaukee, Milwaukee County

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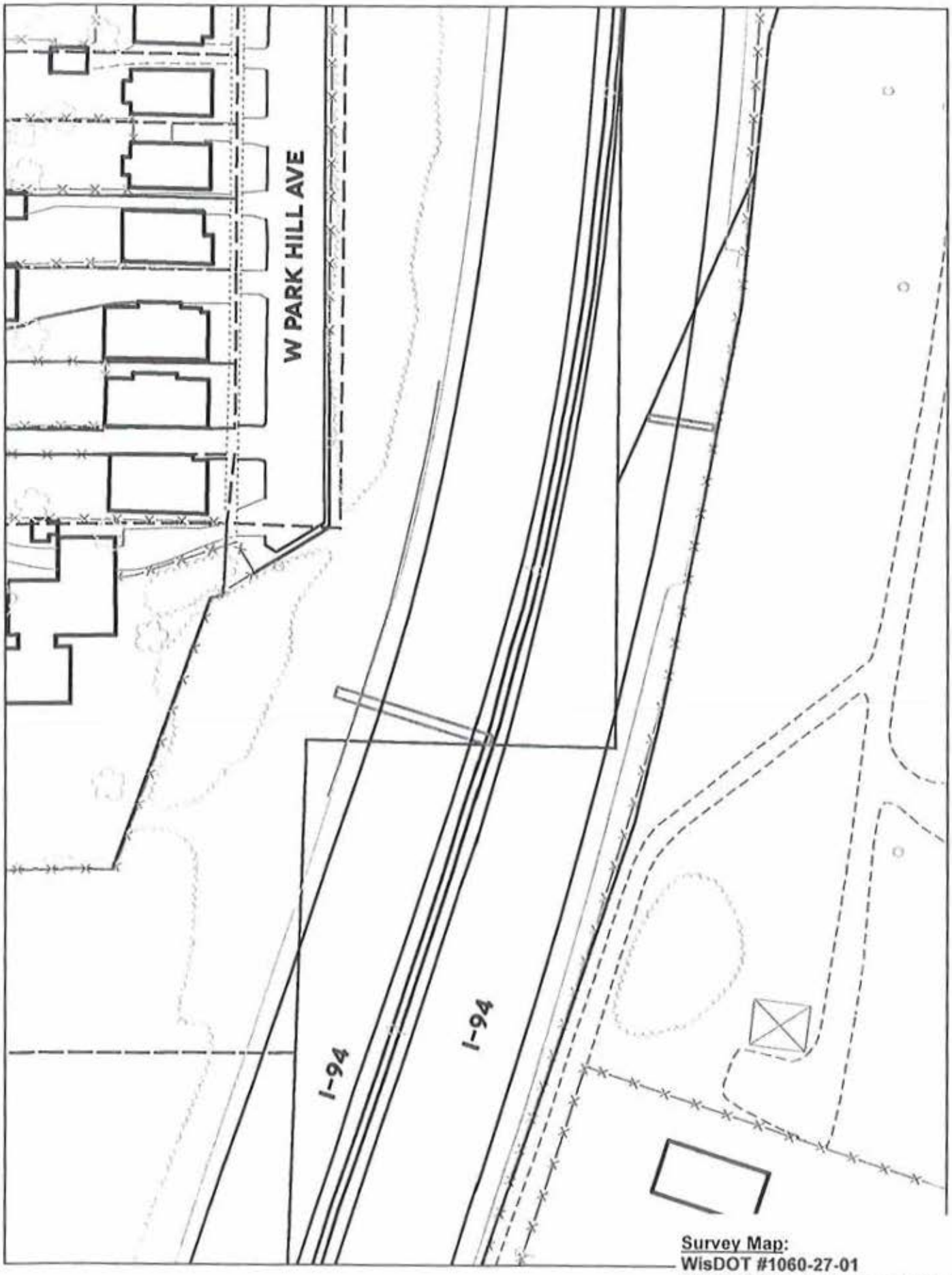
City of Milwaukee, Milwaukee Count



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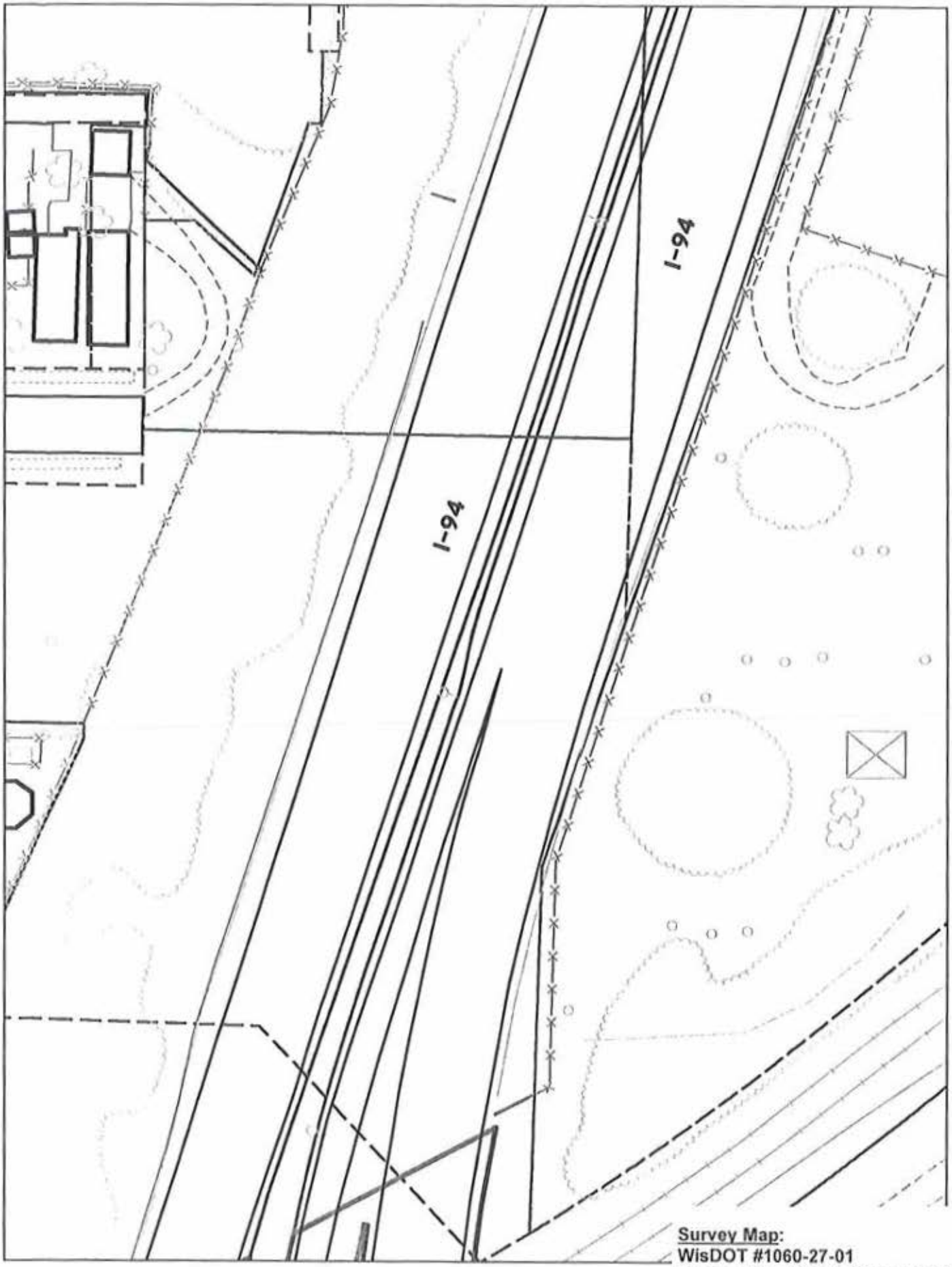
City of Milwaukee, Milwaukee County



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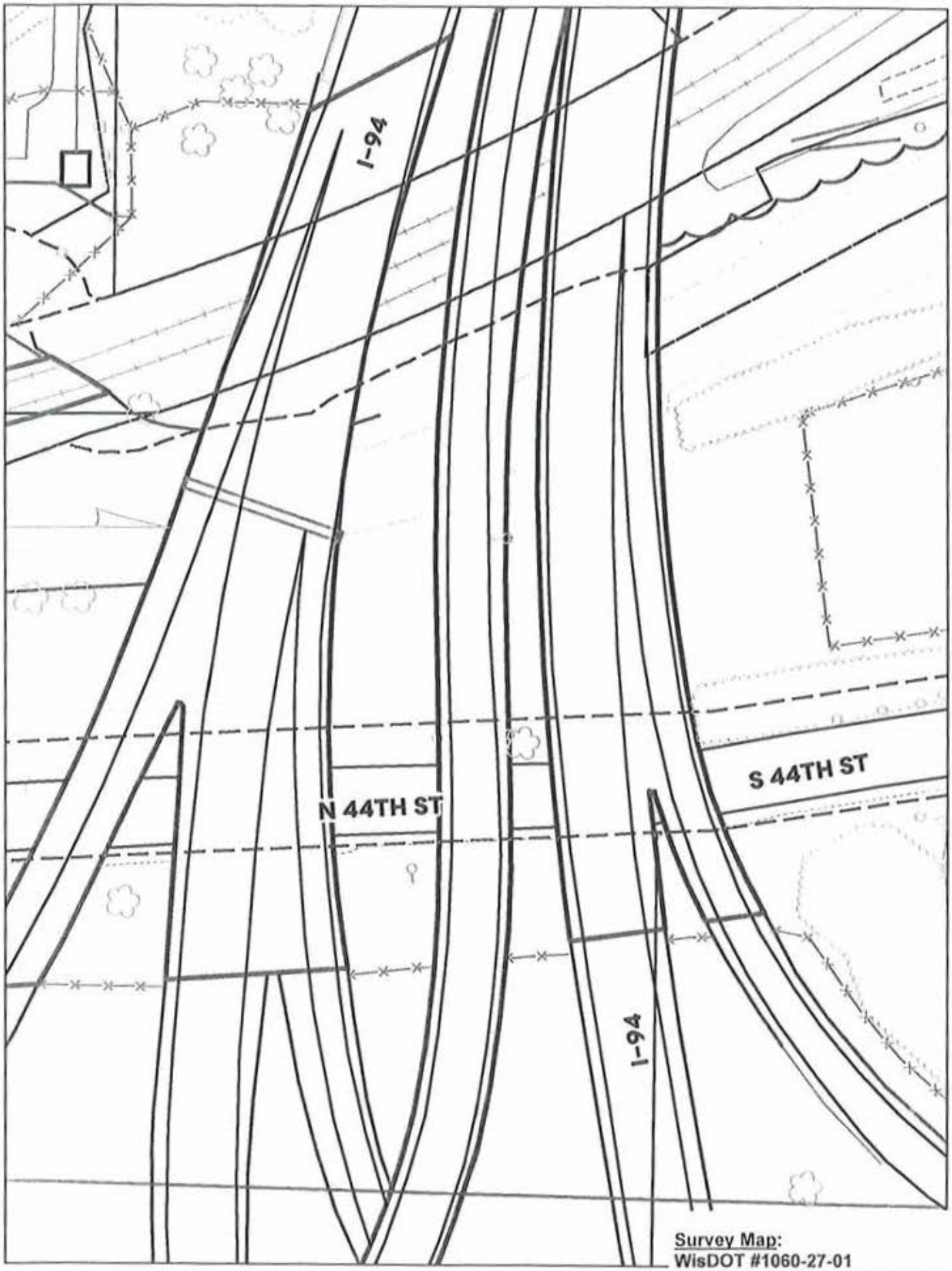
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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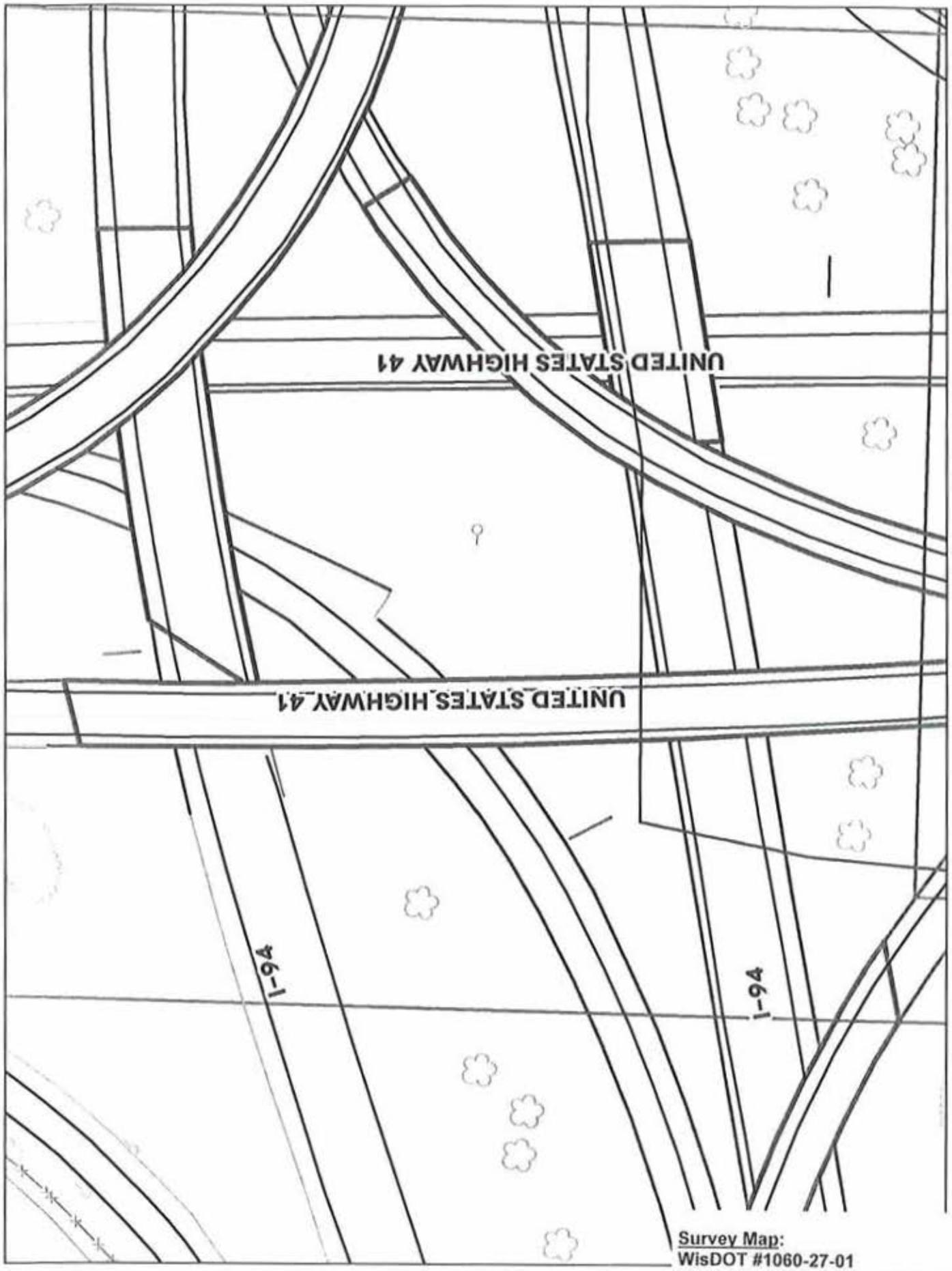
WisDOT #1060-27-01
I94 East-West & Stadium Interchang
City of Milwaukee, Milwaukee Count



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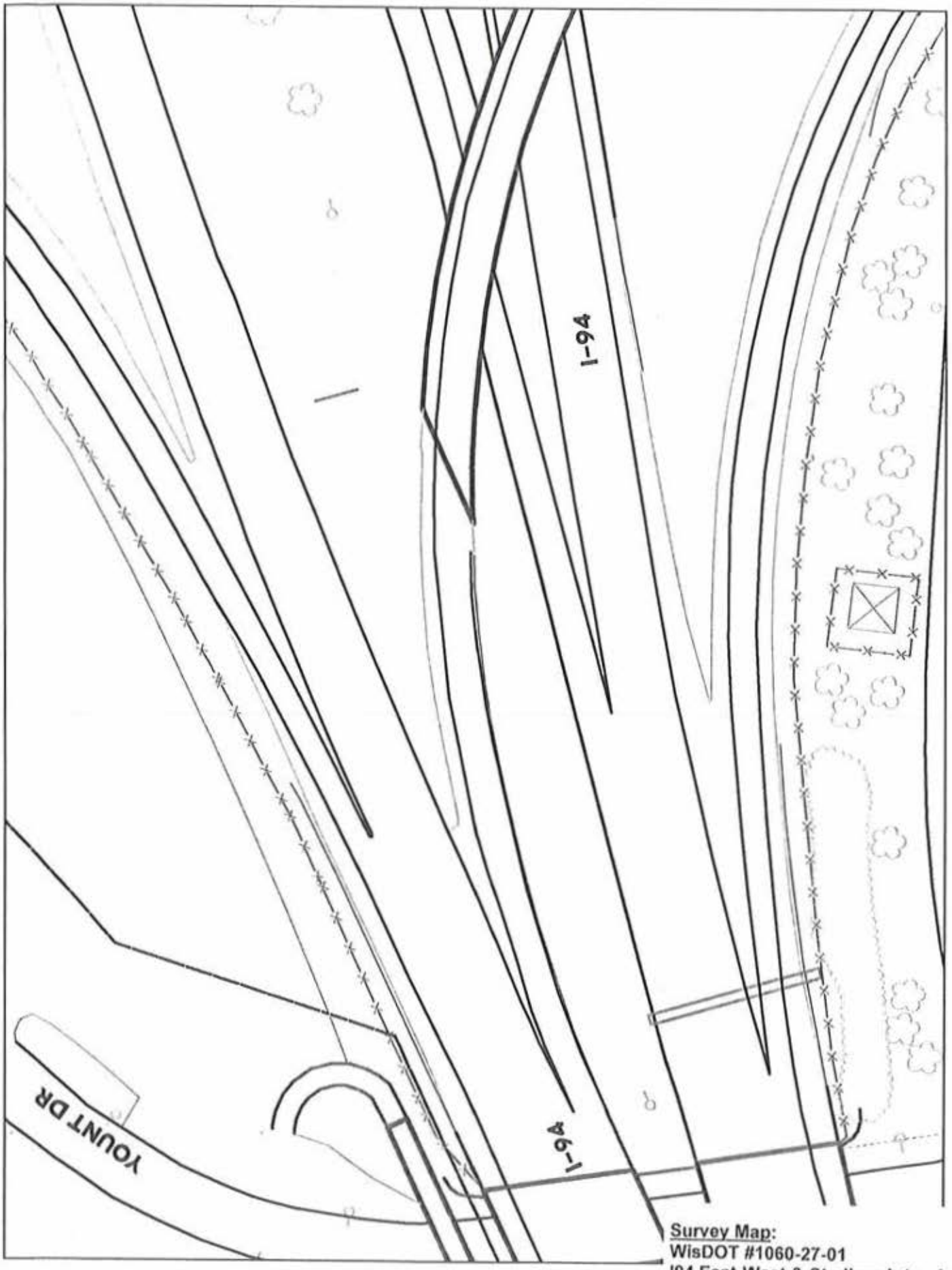

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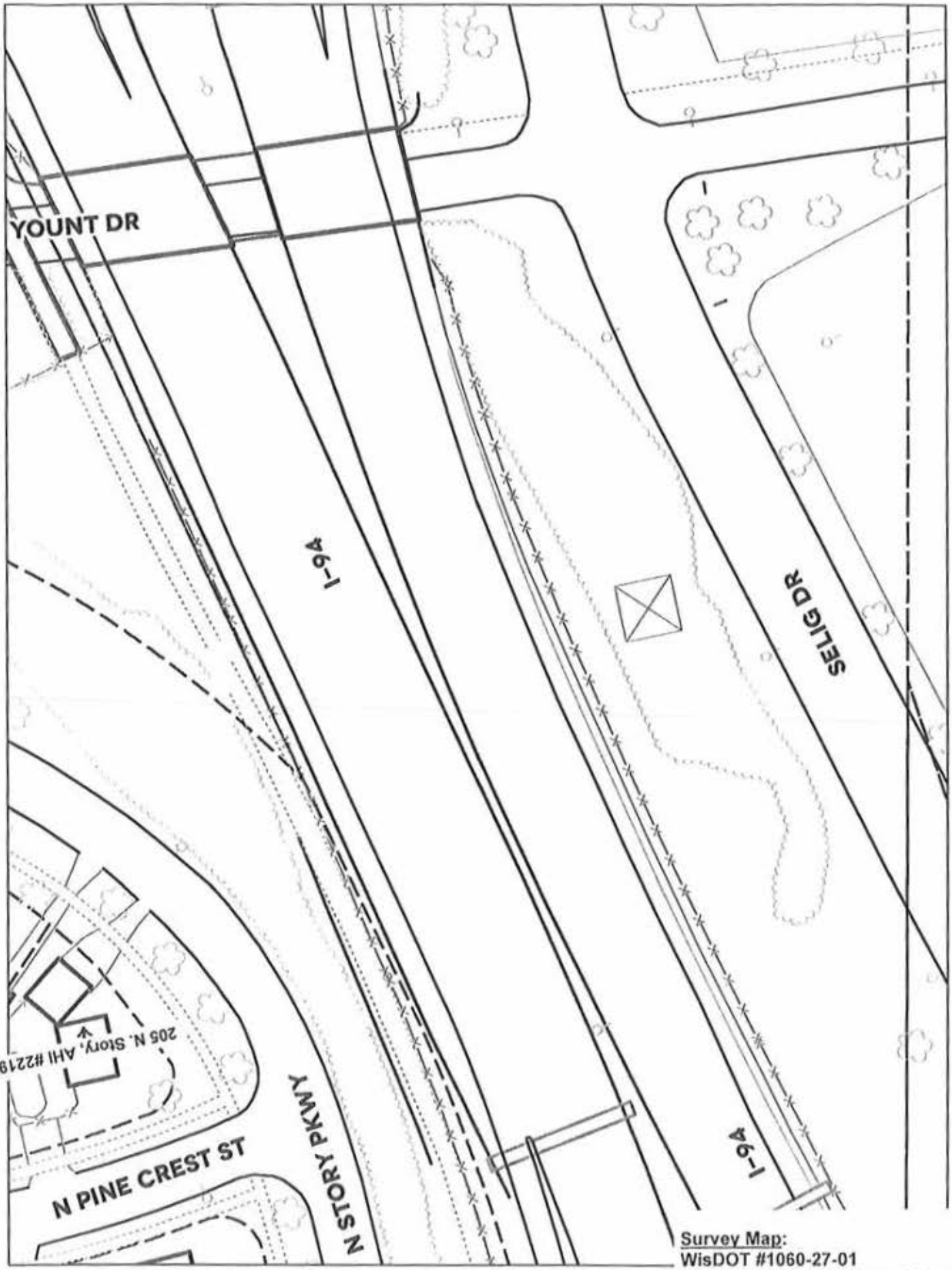
WisDOT #1060-27-01
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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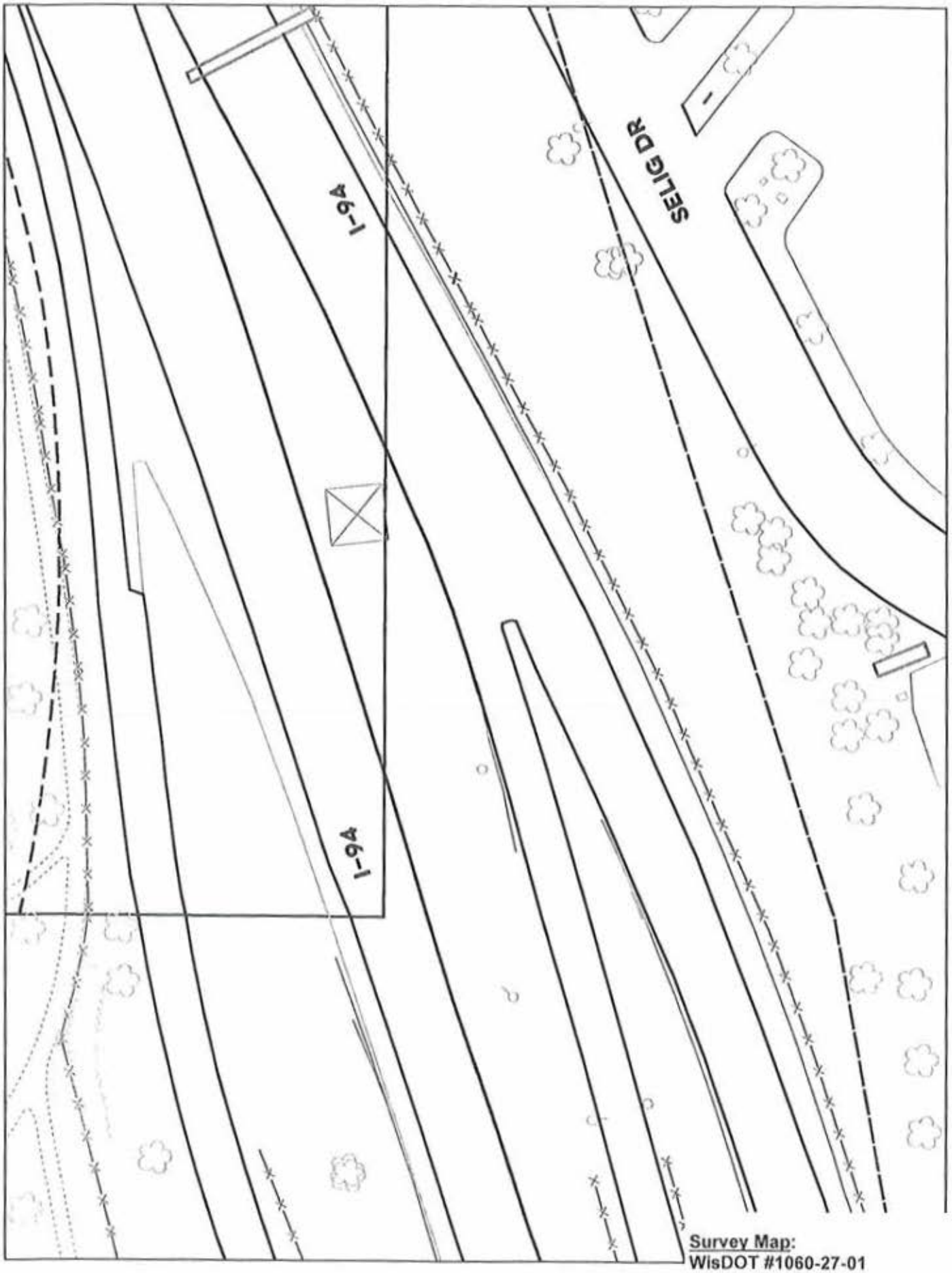
WisDOT #1060-27-01
I94 East-West & Stadium Interchang
City of Milwaukee, Milwaukee Coun



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I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County

Survey Map:
WisDOT #1060-27-01
I94 East-West & Stadium Interchan
City of Milwaukee, Milwaukee Cour

Survey Map:
WisDOT #1060-27-01
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County

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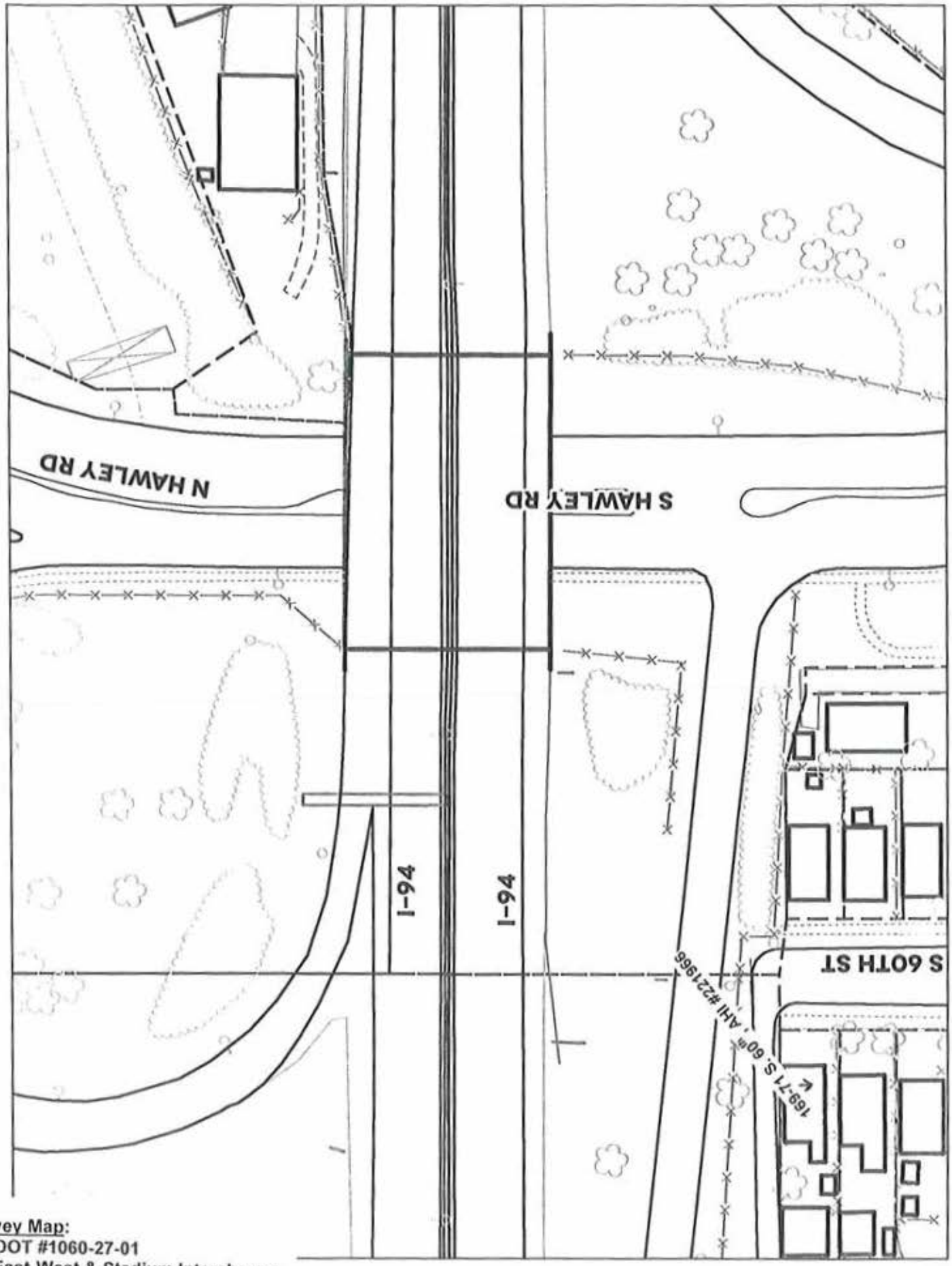
City of Milwaukee, Milwaukee County



117 N. 60th/6001 W. Stevenson
AHI #221965

Survey Map:
WisDOT #1060-27-01
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County

Survey Map:
WisDOT #1060-27-01
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County

Survey Map:
WisDOT #1060-27-01
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County

Survey Map:
WisDOT #1060-27-01
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City of Milwaukee

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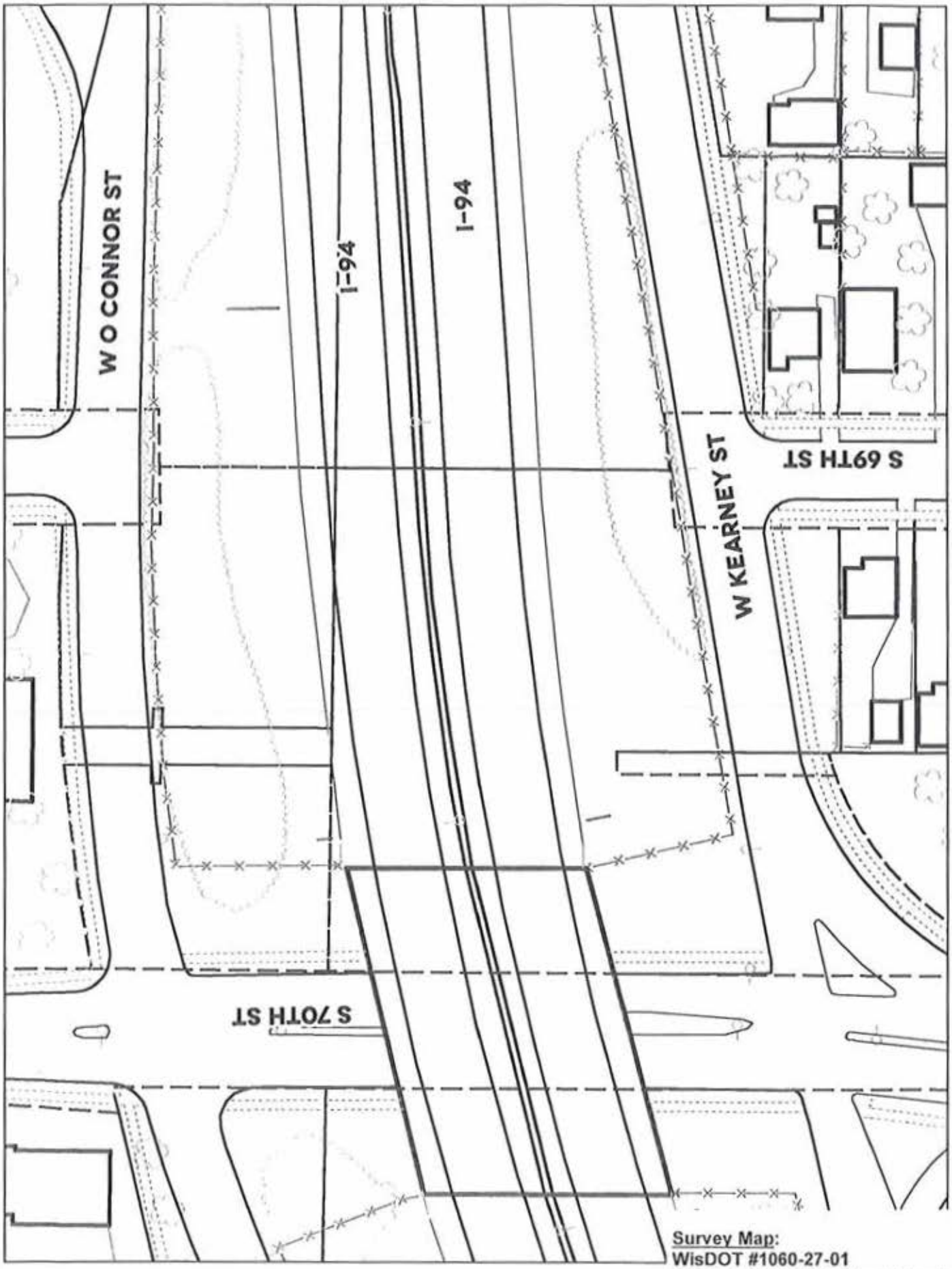
94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



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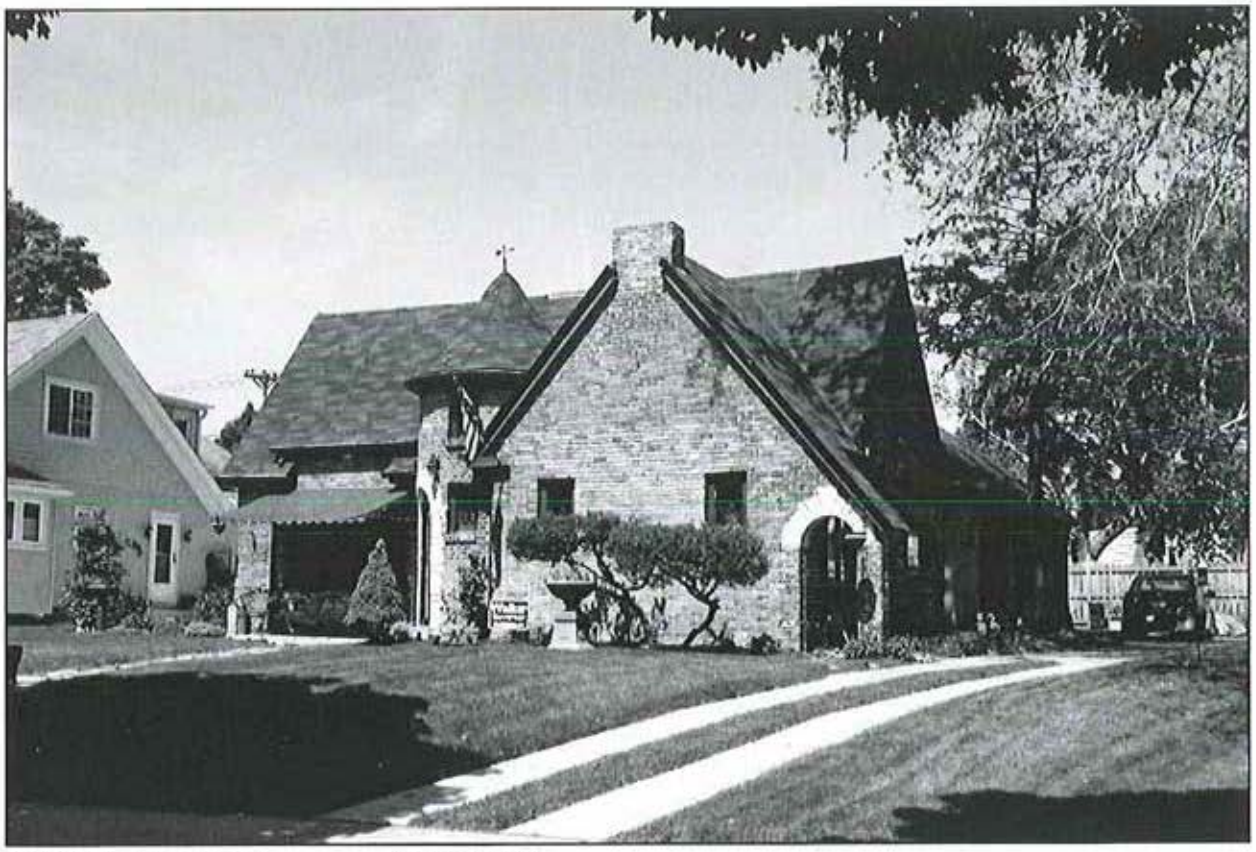
I94 East-West & Stadium Interchange
City of Milwaukee, Milwaukee County



607 N. Story Parkway AHI #221926

4715 W. Vliet Street AHI #221927

1421 N. 47th Street AHI #221928

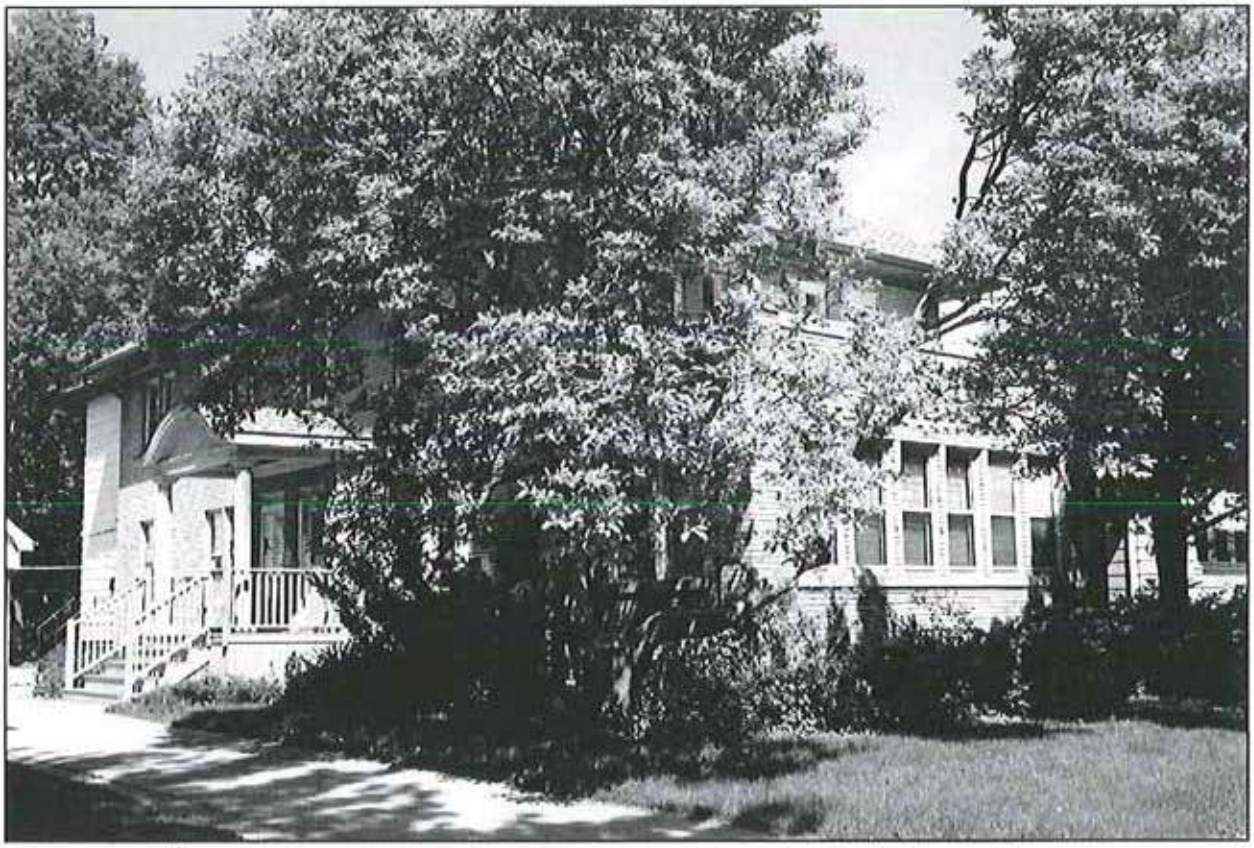
1451 N. 47th Street AHI #221930

1503 N. 47th Street AHI #221931

1509 N. 47th Street AHI #221932

1545 N. 47th Street AHI #221933

1551-53 N. 47th Street AHI #221937



1629-35 N. 47th Street AHI #221940

1717 N. 47th Street AHI #221941

1727-29 N. 47th Street AHI #221942

1735-37 N. 47th Street AHI #221943

1743 N. 47th Street AHI #114049

1803-05 N. 47th Street AHI #114048

1809-11 N. 47th Street AHI #114047

1821 N. 47th Street AHI #114046

1921 N. 47th Street AHI #221946

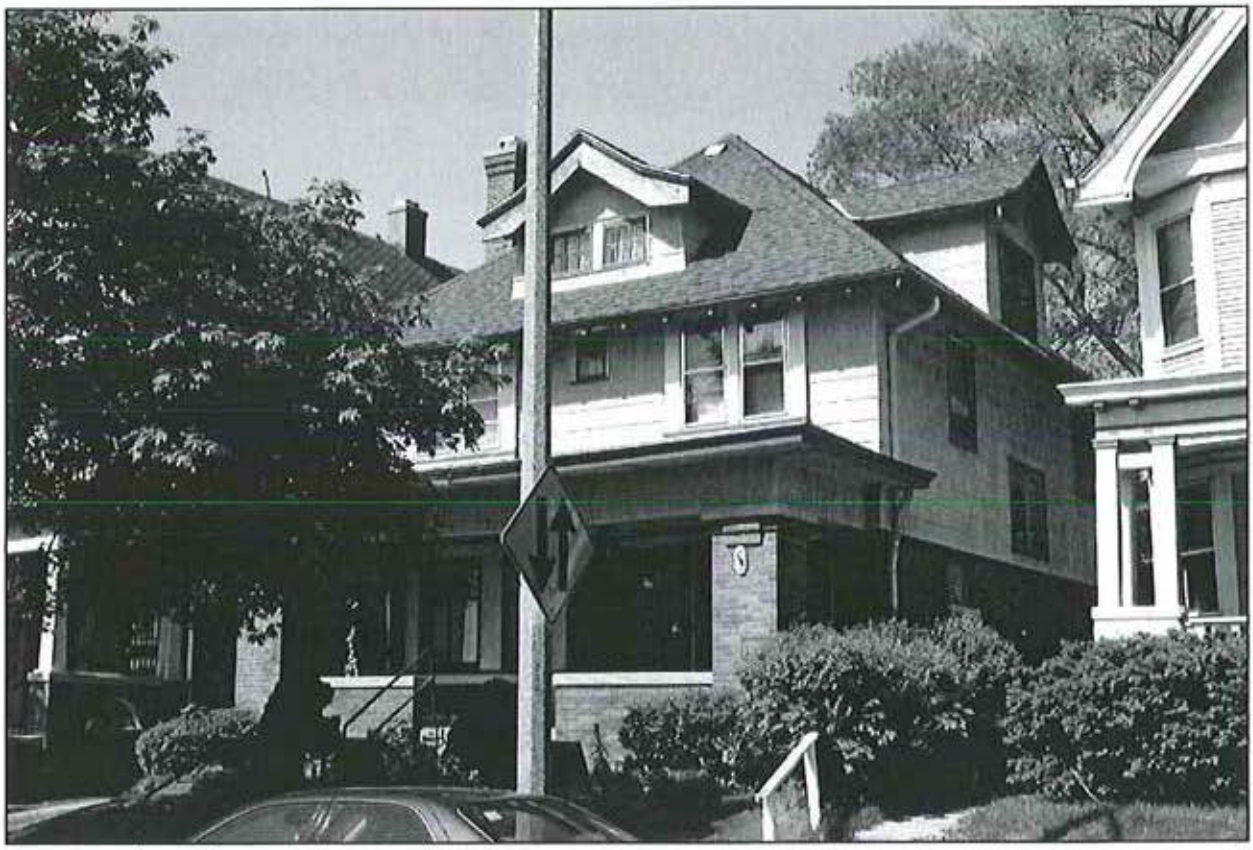
2001-03 N. 47th Street AHI #221947

2007 N. 47th Street AHI #221948

2163-65 N. 47th Street AHI #221949

2167-69 N. 47th Street AHI #221950

2177-79 N. 47th Street AHI #221951

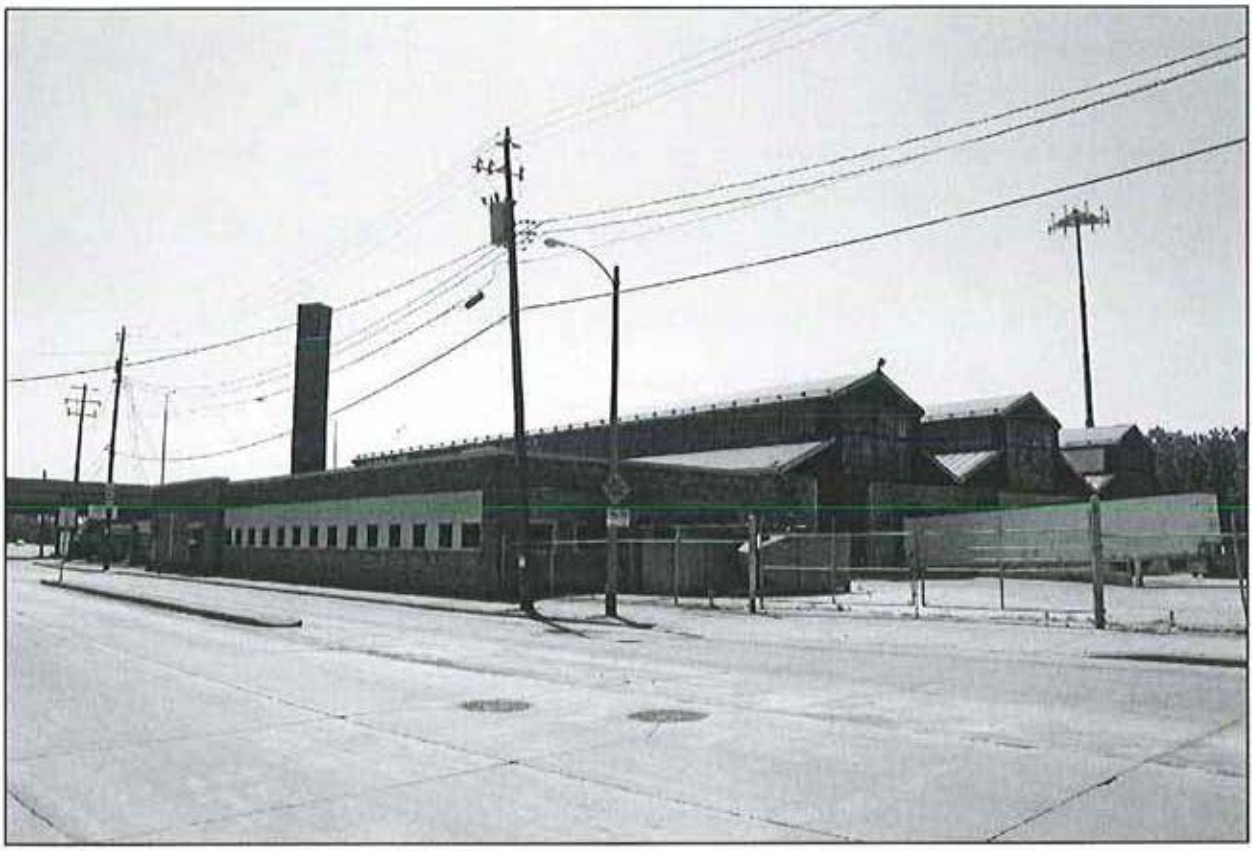


2183 N. 47th Street AHI #221952

2187-89 N. 47th Street AHI #221953

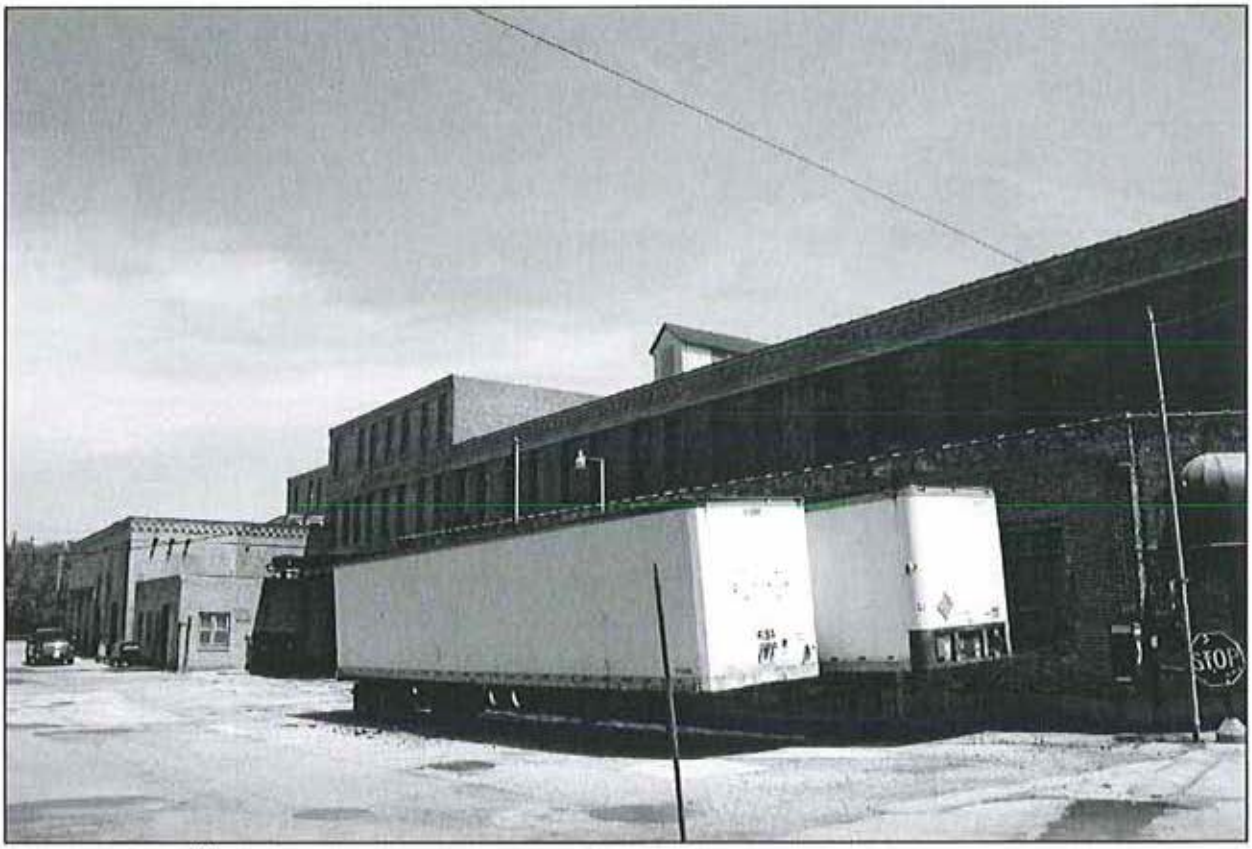
2207 N. 47th Street AHI #221954

4704 W. Lloyd Street AHI #116500



4831 W. State Street AHI #221955

4701 W. Lisbon Avenue AHI #221956



900 & 944 N. 46th Street AHI #117998

1120 N. 46th Street AHI #

1137-39 N. 46th Street AHI #

1209 N. 46th Street AHI #221957

1217-19 N. 46th Street AHI #221958

1229-31 N. 46th Street AHI #118164

1330 N. 46th Street AHI #221959

1344 N. 46th Street AHI #221960

W. Lloyd Street/W. Vliet Street (Washington Park) AHI #120123

W. Lloyd Street/W. Vliet Street (Washington Park) AHI #120124

4420 W. Vliet Street (Washington Park Senior Center) AHI #223032

4530 W. Lloyd Street AHI #221961

4550 W. Wisconsin Avenue AHI #221962

4552 W. Wells Street AHI #221963

4400 W. National Avenue AHI #221964

2504 W. Clybourn Street AHI #120458

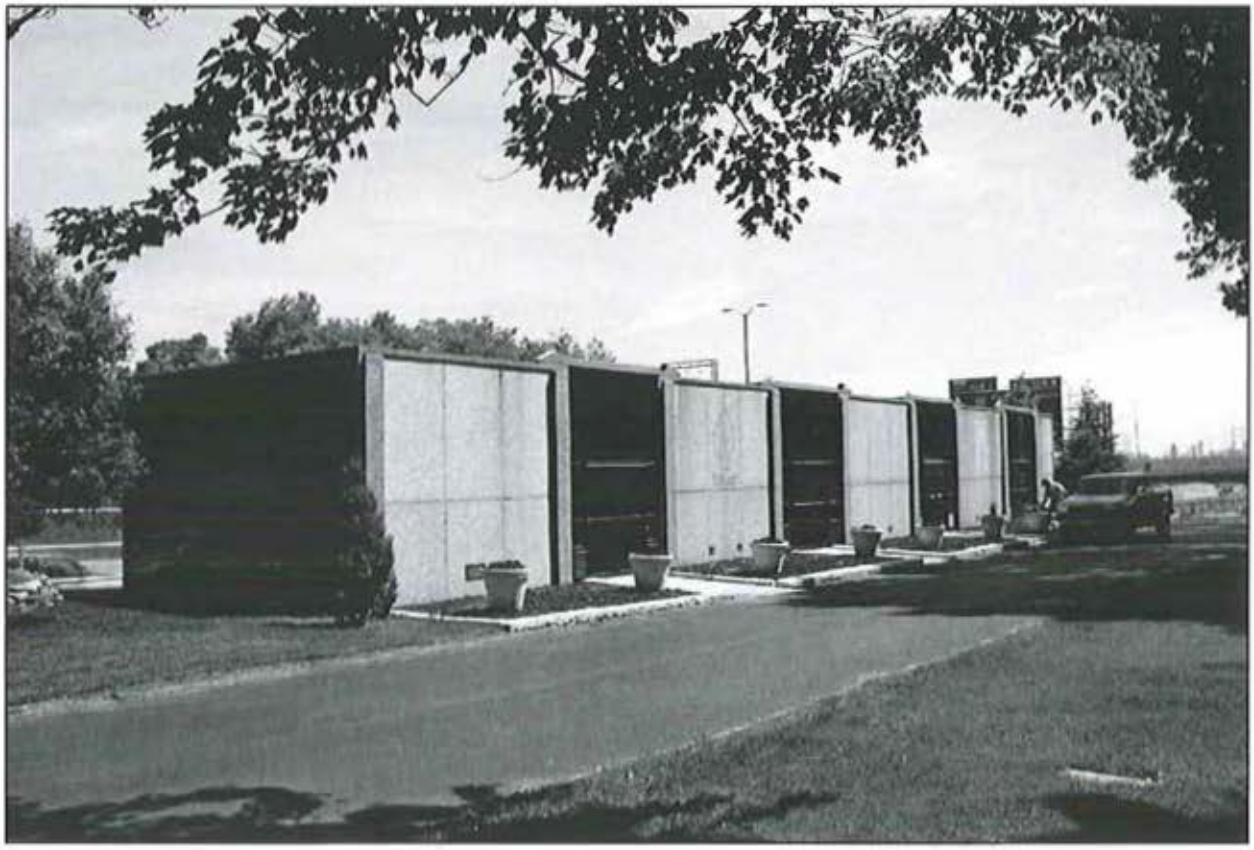
117 N. 60th Street/6001 W. Stevenson Street AHI #221965

169-71 S. 60th Street AHI #221966

155 N. Story Parkway AHI #221967

205 N. Story Parkway AHI #221968

166 S. Hawley Court AHI #221970



166 S. Hawley Court AHI #221971

3630 W. Park Hill Avenue AHI #221972

6033-35 W. Fairview Avenue AHI #221973

6033-35 W. Fairview Avenue AHI #221974

6203-07 W. Fairview Avenue AHI #221975

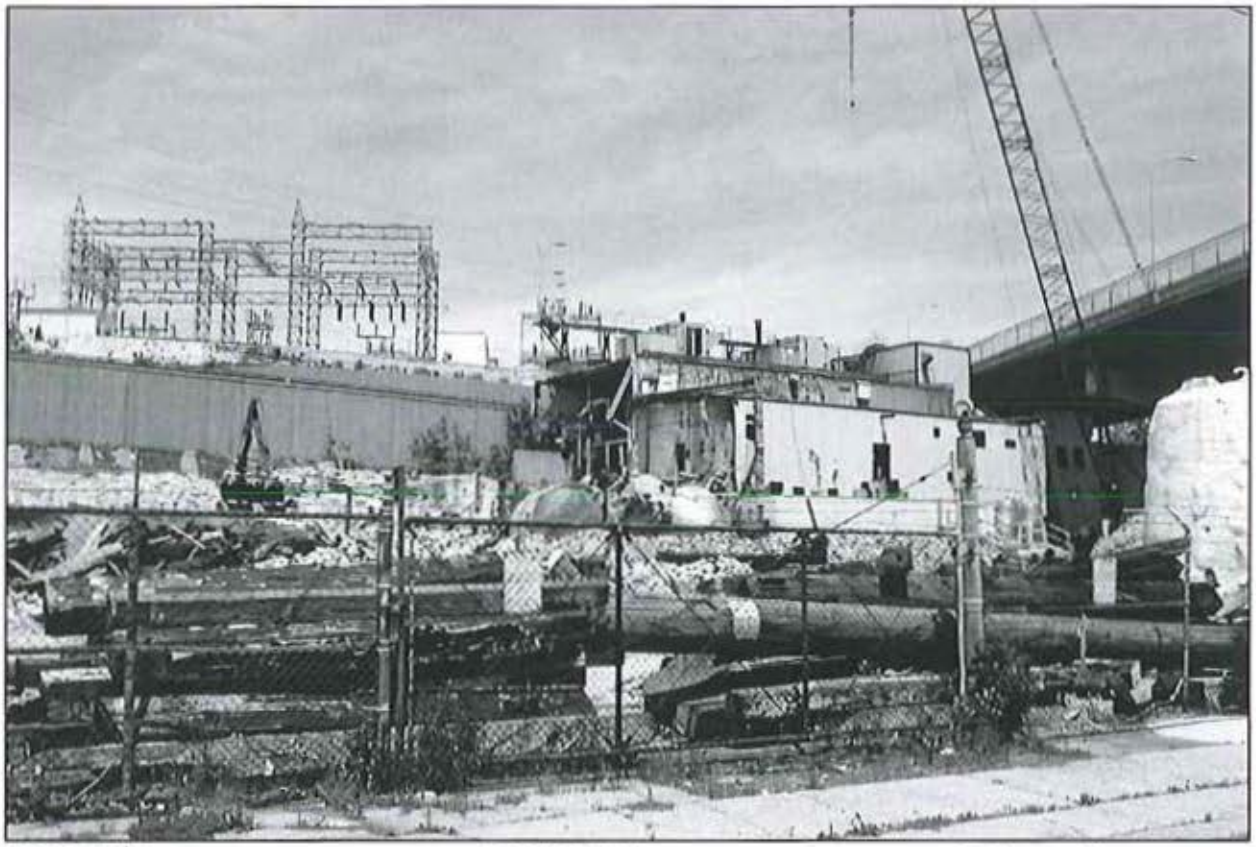
6519-6519a W. Fairview Avenue AHI #221976

6701 W. Fairview Avenue AHI #221977

WisDOT Project #1060-27-01: I-94 East/West & Stadium Inter. REFERENCE PHOTOGRAPHS

305 N. 25th Street AHI #99995 Reference Photo

321 N. 25th Street AHI #99996 Reference Photo



325 N. 27th Street AHI #112261 Reference Photo

2917 W. Mount Vernon Street AHI #120457 Reference Photo

5916-18 W. Dixon Street AHI #115360 Reference Photo

1128 N. 46th Street AHI #117999 Reference Photo

1223-25 N. 46th Street AHI #118162 Reference Photo

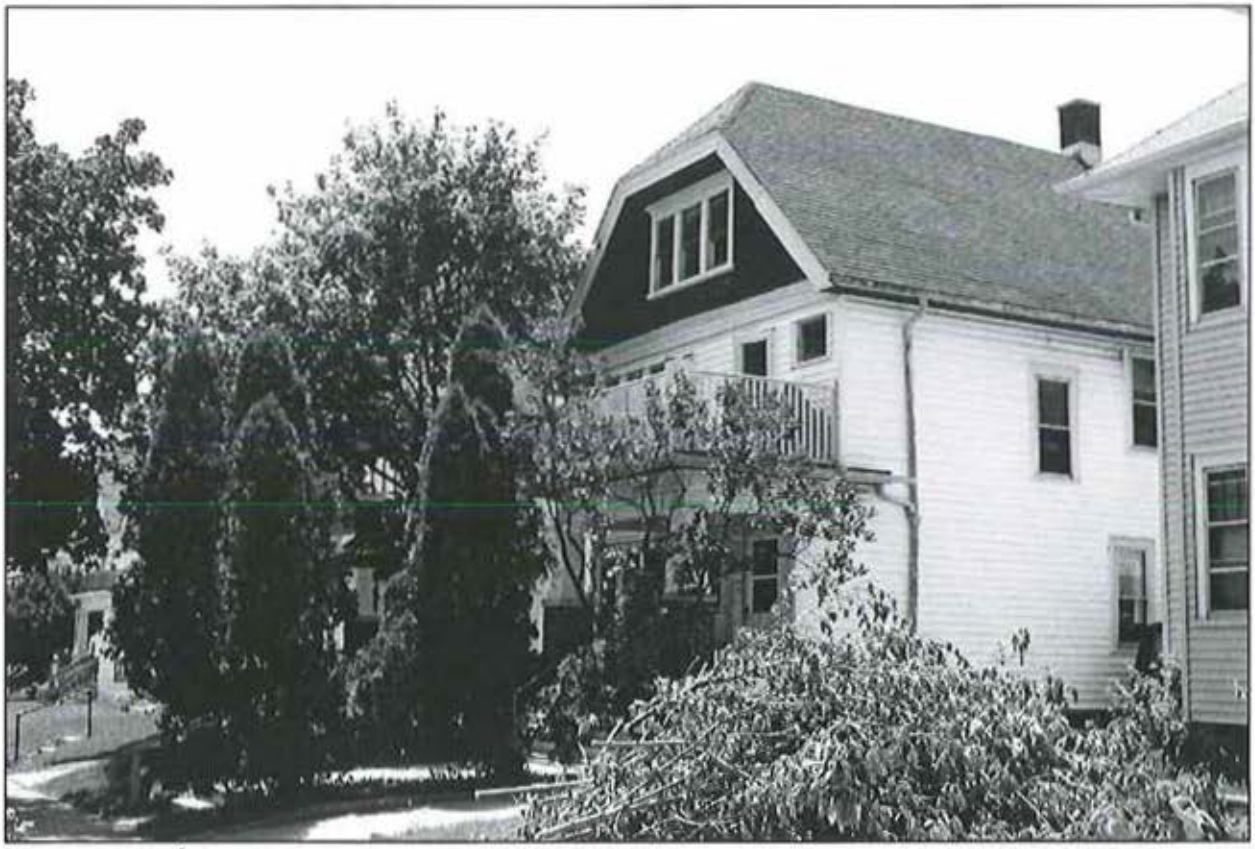
1233-35 N. 46th Street AHI #118165 Reference Photo

1239-41 N. 46th Street AHI #118167 Reference Photo

1271-73 N. 46th Street AHI #118171 Reference Photo

1303-05 N. 46th Street AHI #118172 Reference Photo

1307-09 N. 46th Street AHI #118173 Reference Photo



1313-15 N. 46th Street AHI #118234 Reference Photo

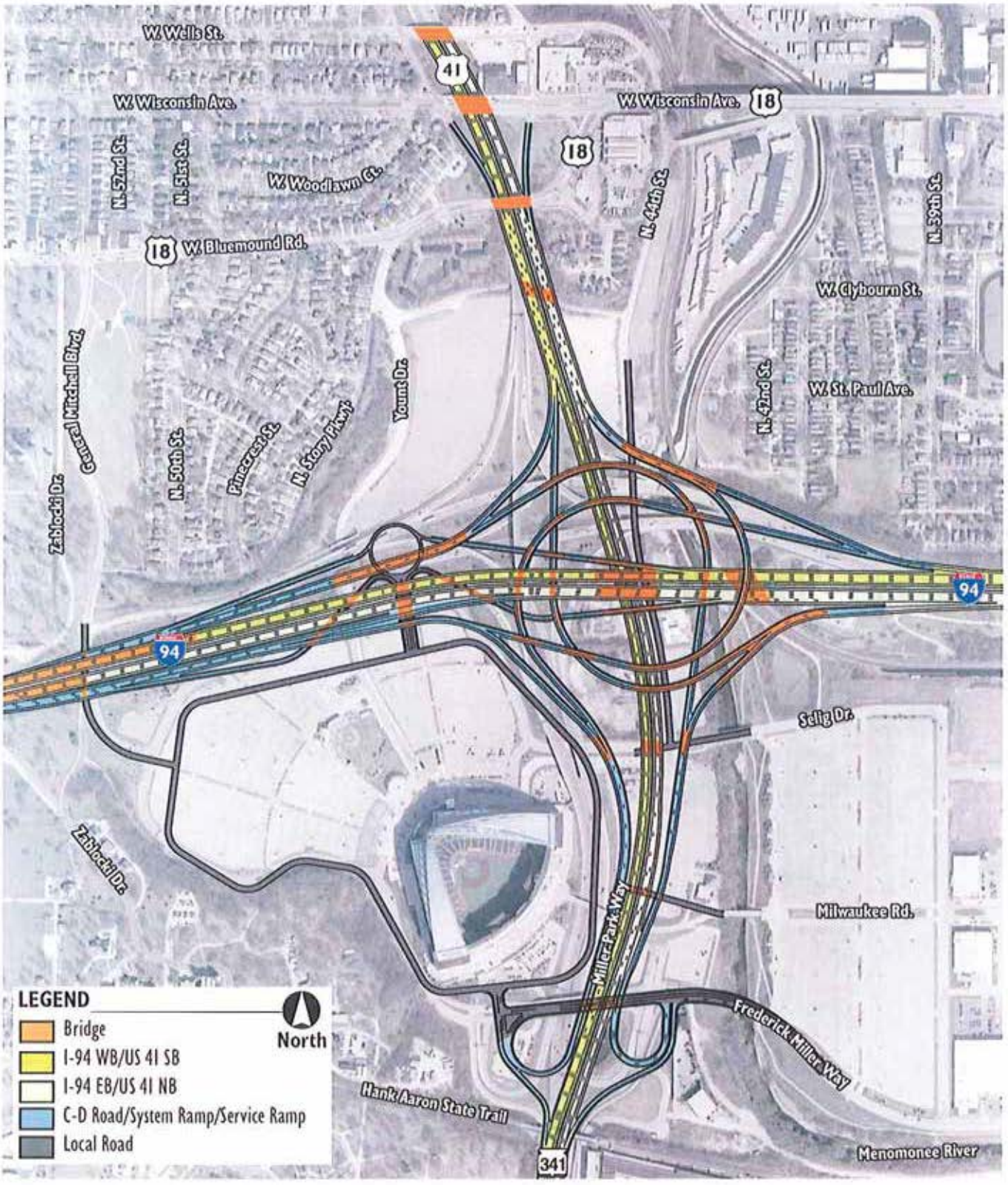
1317-19 N. 46th Street AHI #118235 Reference Photo

4701 W. Washington Boulevard AHI #31863 NRHP (Non-contributing) Reference Photo

1701-03 N. 47th Street AHI #223034 NRHP (Non-contributing) Reference Photo

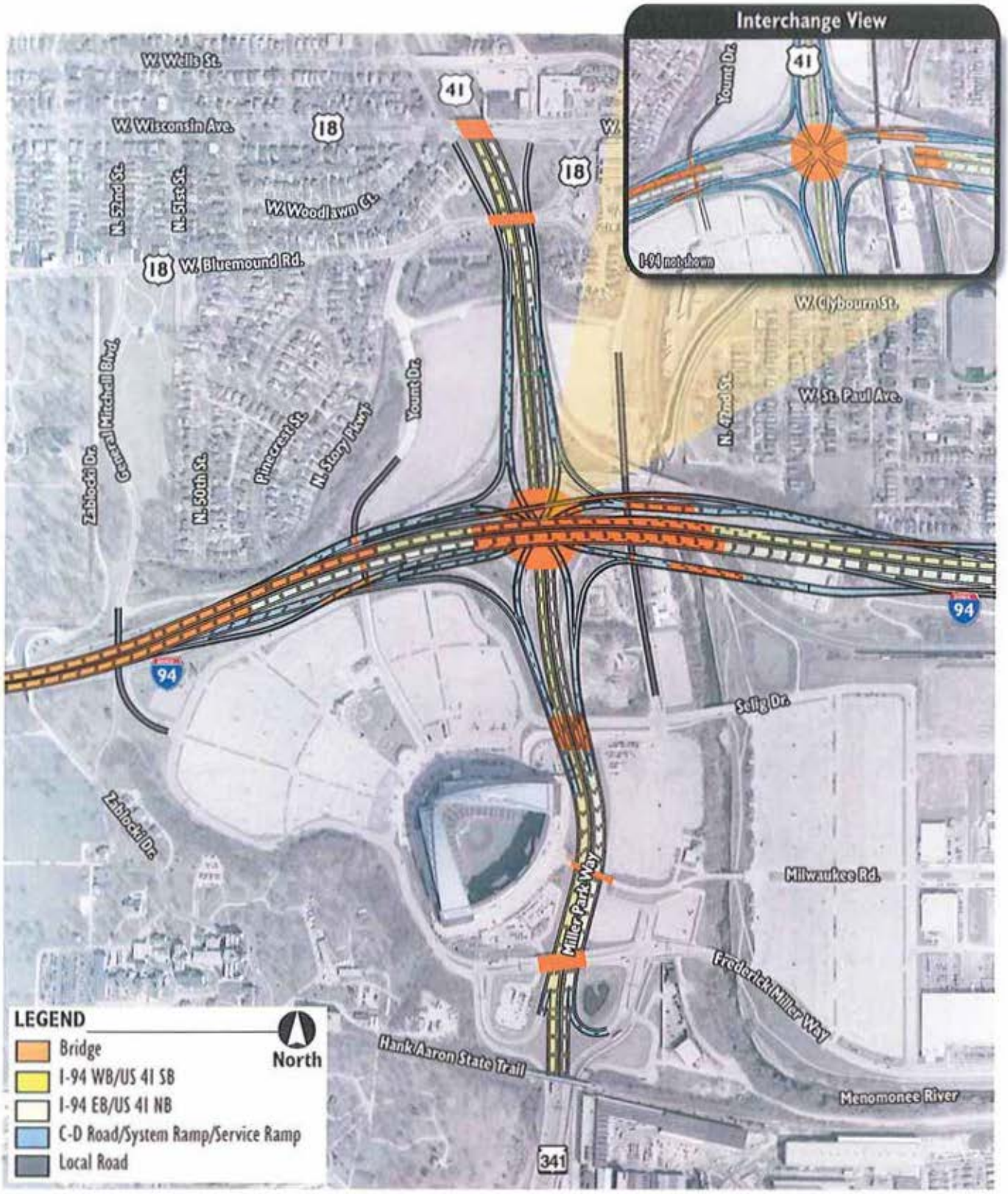
5000 W. National Avenue (Resource #120) AHI #119480 NRHP & NHL Reference Photo

5000 W. National Avenue (Resource #57) AHI #119854 NRHP & NHL Reference Photo



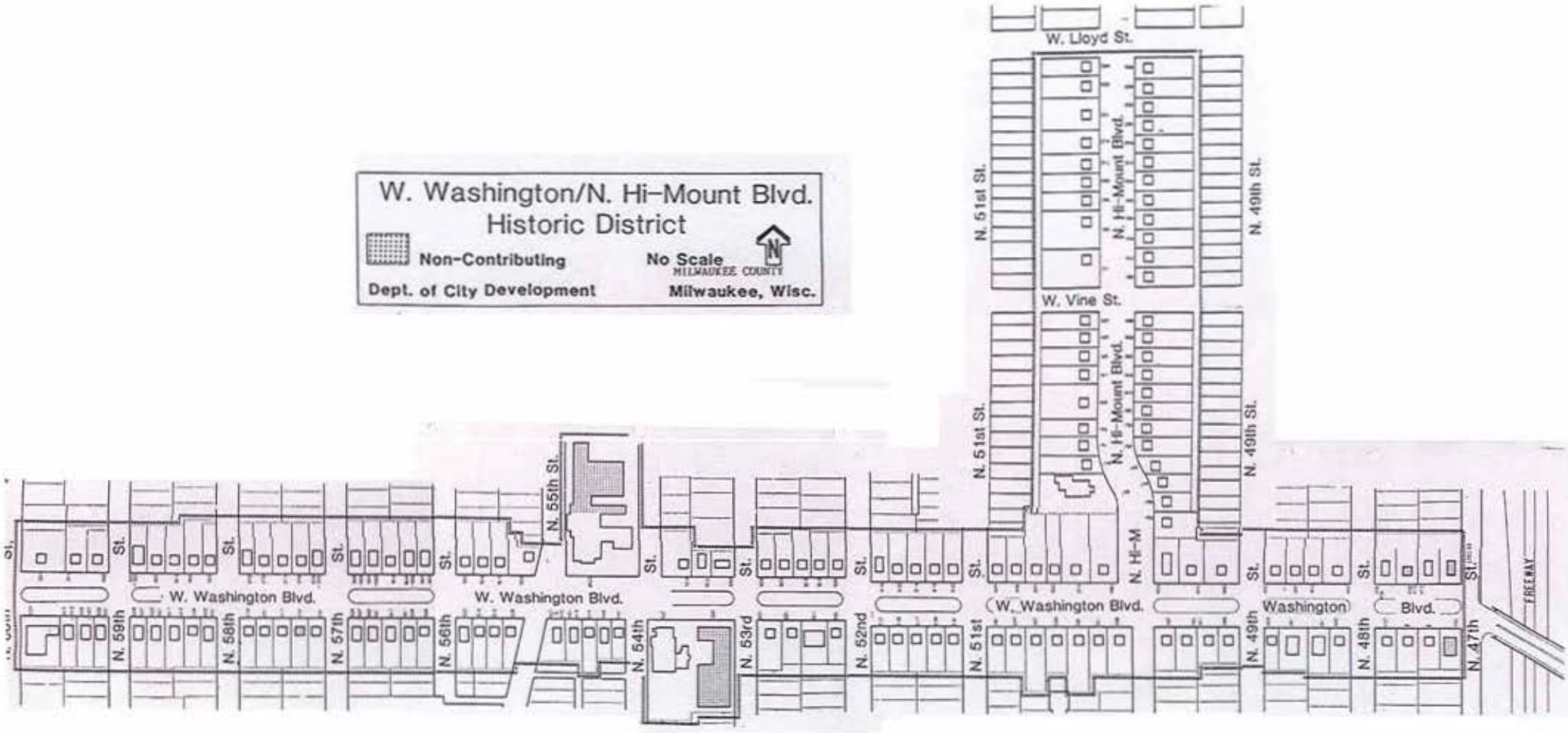
U.S. Department of Transportation
Federal Highway Administration

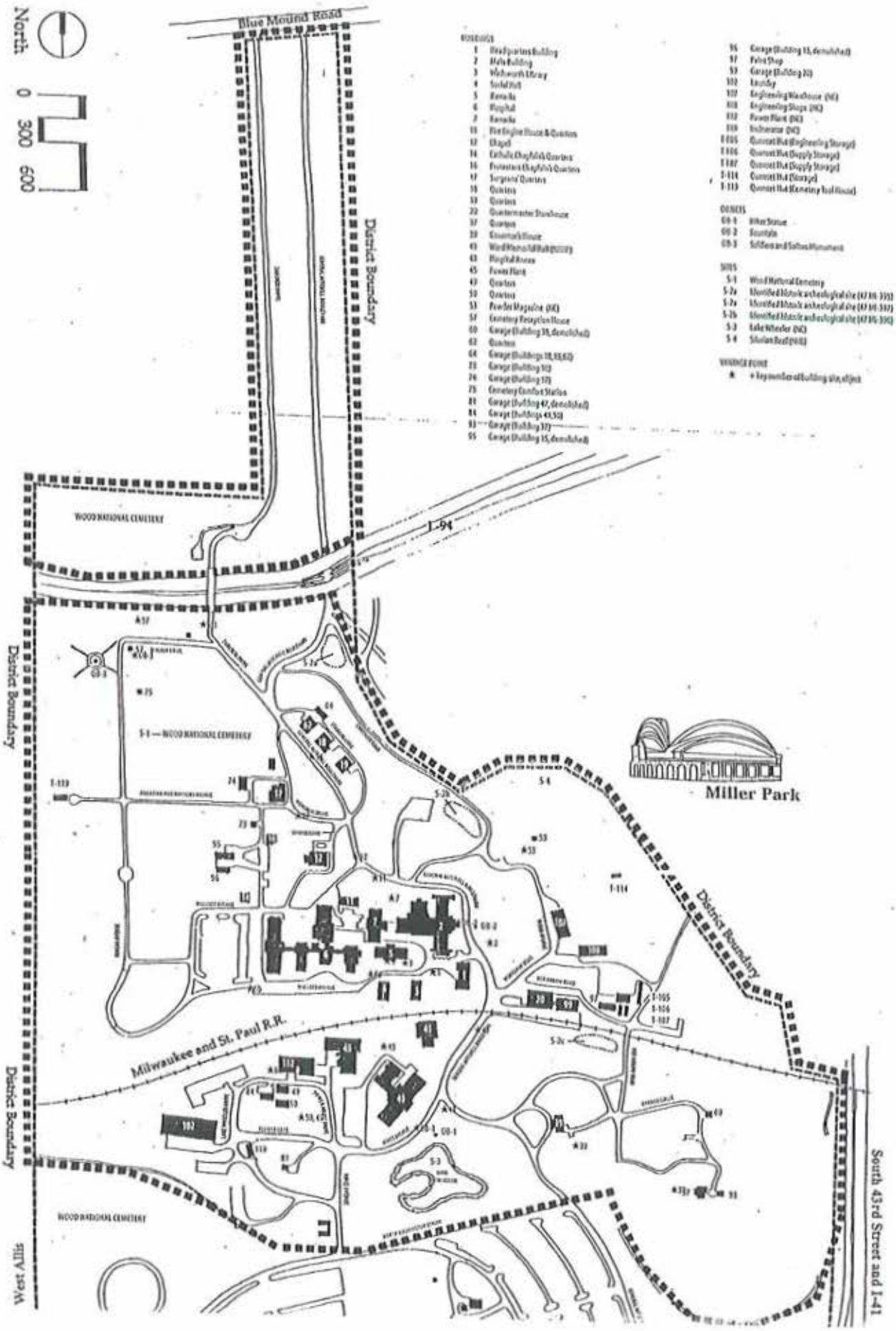
Exhibit 2-9
Stadium Interchange Section Modernization Alternative S2



U.S. Department of Transportation
Federal Highway Administration

Exhibit 2-10
Stadium Interchange Section Modernization Alternative S3


W. Washington/N. Hi-Mount Blvd.
Historic District
Non-Contributing
No Scale
MILWAUKEE COUNTY
Dept. of City Development
Milwaukee, Wisc.
W. Lloyd St.
W. Vine St.
N. 51st St.
N. 49th St.
N. Hi-Mount Blvd.
N. Hi-M
N. 55th St.
W. Washington Blvd.
Washington Blvd.
N. 59th
N. 58th
N. 57th
N. 56th
N. 54th
N. 53rd
N. 52nd
N. 51st
N. 49th
N. 48th
N. 47th
FREEWAY


North
0 300 600
Blue Mound Road
District Boundary
WOOD NATIONAL CEMETERY
I-94
Miller Park
Milwaukee and St. Paul R.R.
South 43rd Street and I-41
West Allis

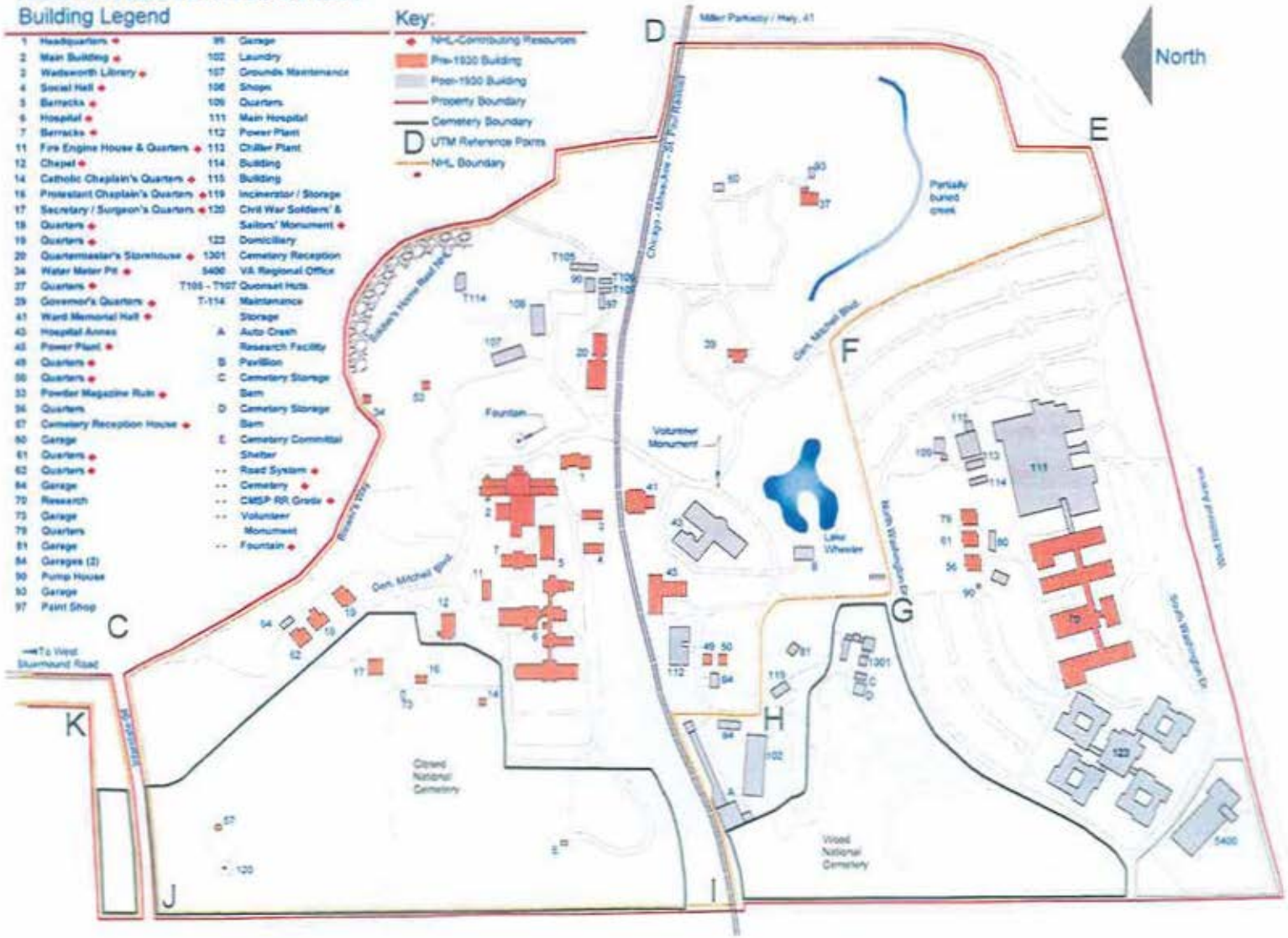
NORTHWESTERN BRANCH

Building Legend

1	Headquarters	95	Garage
2	Main Building	102	Laundry
3	Wadsworth Library	107	Grounds Maintenance
4	Social Hall	108	Shops
5	Barracks	109	Quarters
6	Hospital	111	Main Hospital
7	Barracks	112	Power Plant
11	Fire Engine House & Quarters	113	Chiller Plant
12	Chapel	114	Building
14	Catholic Chaplain's Quarters	115	Building
16	Protestant Chaplain's Quarters	119	Incinerator / Storage
17	Secretary / Surgeon's Quarters	120	Civil War Soldiers' & Sailors' Monument
18	Quarters		
19	Quarters	122	Domiciliary
20	Quartermaster's Storehouse	1301	Cemetery Reception
34	Water Meter Pit	5400	VA Regional Office
37	Quarters	T105 - T107	Quonset Huts
39	Governor's Quarters	T-114	Maintenance Storage
41	Ward Memorial Hall		
43	Hospital Annex	A	Auto Crash Research Facility
45	Power Plant		
49	Quarters	B	Pavillion
50	Quarters	C	Cemetery Storage Barn
53	Powder Magazine Ruin		
56	Quarters	D	Cemetery Storage Barn
57	Cemetery Reception House		
60	Garage	E	Cemetery Committal Shelter
61	Quarters		
62	Quarters	--	Road System
64	Garage	--	Cemetery
70	Research	--	CMSP RR Grade
73	Garage	--	Volunteer Monument
79	Quarters	--	Fountain
81	Garage		
84	Garages (2)		
90	Pump House		
93	Garage		
97	Paint Shop		

Key:

- NHL-Contributing Resources
- Pre-1930 Building
- Post-1930 Building
- Property Boundary
- Cemetery Boundary
- D UTM Reference Points
- NHL Boundary



DEMOGRAPHIC DATA SOURCES: COMPARISON OF CENSUS DATA

To: Bethaney Bacher-Gresock/FHWA

From: WisDOT I-94 East-West Study Team

Date: October 9, 2015

The purpose of this memo is to compare the statistical data used for minority populations and income in the I-94 East-West Corridor (70th to 16th Street) Final Environmental Impact Statement (EIS) against more recently updated data. The study team acknowledges that more recent data is available but the updated data does not differ greatly from what is documented in the Final EIS and therefore, it is still acceptable to use the original data presented in the document. This memo was prepared to address FHWA Wisconsin Division comments on the preliminary Final EIS for this project.

BACKGROUND:

In the Draft and Final EIS for the I-94 East-West Corridor, WisDOT uses 2010 US Census data for race and ethnicity categories and 2007-2011 American Community Survey (ACS) 5-year Estimates for income data. The most recent data available for race, ethnicity, and income is the 2009-2013 ACS 5-year Estimates.

Decennial census data is based on full participation whereas ACS data is based on an estimate. This indicates that the race and ethnicity 2010 Census Data is more complete than the 2009-2013 ACS 5-year Estimate. Also, 2010 Census data is available at the more specific census block level as opposed to the ACS which is available only in census block groups. A census block is the smallest Census Bureau geographic entity and is generally an area bounded by streets, streams, and the boundaries of legal and statistical entities. A block group is a grouping of census blocks. Therefore, census blocks conform more closely to our corridor and are preferable to use when available. Appendix A displays a comparison of census blocks versus block groups for the study area, 1-mile, 0.5-mile, and 1,000 foot corridor. Only for the study area are the boundaries between the blocks and block groups the same.

Beginning with the 2010 Census, income data was no longer obtained as part of the decennial Census and only collected by the ACS. The ACS tracks local economic conditions annually rather than on a decennial basis like the US Census and provides a 5-year estimate. Data for low-income indicators is collected at the census tract level, which is a grouping of block groups. The 2007-2011 ACS 5-year Estimates was used in the Draft EIS and proposed to be used in the Final EIS because this was the most recent data available in 2012/2013 when socioeconomic data was originally collected for the study.

COMPARISON

To assess if the older data presented in the Final EIS is still accurate, the minority population and median household income statistics were compared to the most recent data available (2009-2013 ACS 5-year Estimates). These two categories are representative of the other categories presented in the document and will serve as an adequate comparison.

Minority Populations

The 2010 Census data on Minority Populations was compared to the 2009-2013 ACS data. It should be noted that the Census data is presented at the block level compared to the ACS data which is only available at the block group. With the exception of the study area, since the block groups cover a larger area than the blocks (See Appendix A exhibits for coverage area) this can partially explain the difference in the raw numbers. Comparing the percentage of minority population to the total population for each dataset provides a more accurate comparison between the two years. Since the area covered by the blocks and block groups is the same for the study area, the raw numbers are more comparable.

The comparison indicates that minority population differs by 2.5 percent or less between the 2010 Census and the 2013 ACS data. These percentages indicate that there is not a significant difference between the two datasets and therefore, older data is still relevant to the study area.

Minority Population

Area	2010 Census Data (percentage of total population)*	2013 ACS Data (percentage of total population)**
Study Area	57,451 (47.4%)	55,493 (46.0%)
1-mile corridor	8,778 (42.5%)	17,214 (40.0%)
0.5-mile corridor	3,432 (38.5%)	8,162 (36.0%)
1,000 foot corridor	1,303 (36.5%)	4,204 (36.5%)

* Census Data given in census block

** ACS data given in census block groups

Income Data

For income data, presented as mean household income, WisDOT compared the 2007-2011 ACS 5-year Estimate to the 2009-2013 ACS 5-year Estimate. Although the 2007-2011 ACS data was calculated based on 2011 inflation-adjusted dollars compared to the 2009-2013 ACS data which was calculated in 2013 inflation-adjusted dollars, the results indicate that the two data sets are not significantly different. The 1-mile corridor indicates the greatest difference between years, coming in at a $778 increase from 2011 to 2013.

In addition, the Census Bureau discourages the use of comparing overlapping time periods because they contain some of the same years which means the comparison would largely be driven by the differences in non-overlapping years rather than the entire range.[1] Based on this information and the small difference in numbers, it is reasonable to conclude that the 2007-2011 ACS data may be used in place of the 2009-2013 ACS data.

Mean Household Income

Area	2007 2011 ACS*	2009 2013 ACS**
Study Area	$42,848	$42,624
1-mile corridor	$43,592	$44,370
0.5-mile corridor	$34,791	$34,861
1,000 foot corridor	$41,933	$41,579

*2011 inflation-adjusted dollars

**2013 inflation-adjusted dollars

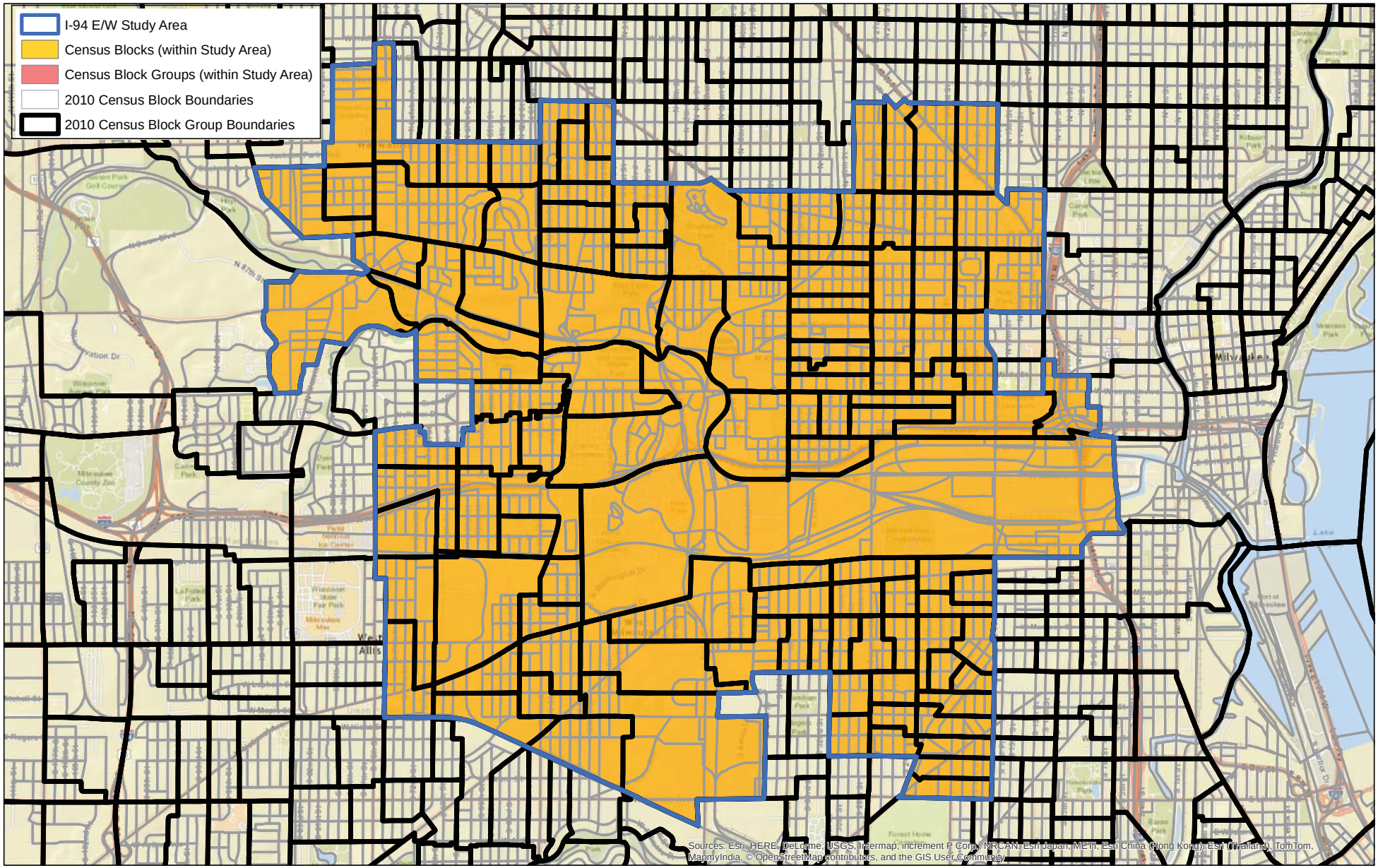
[1] https://www.census.gov/content/dam/Census/library/publications/2008/acs/ACSGeneralHandbook.pdf

CONCLUSION

The results of the comparison indicate that the data used in the Draft and Final EIS do not differ greatly from the more recently updated data. The minority population only changed by a maximum of 2.5 percent and the difference in mean household income was less than $800 for any of the areas. This indicates that the two datasets are comparable and the older dataset is still acceptable to use in the documents. Since the datasets indicate little difference, the findings presented in the Final EIS would remain the same regardless of which dataset is used. Therefore, WisDOT is comfortable using the original data for all categories and findings in the Final EIS.

Appendix A

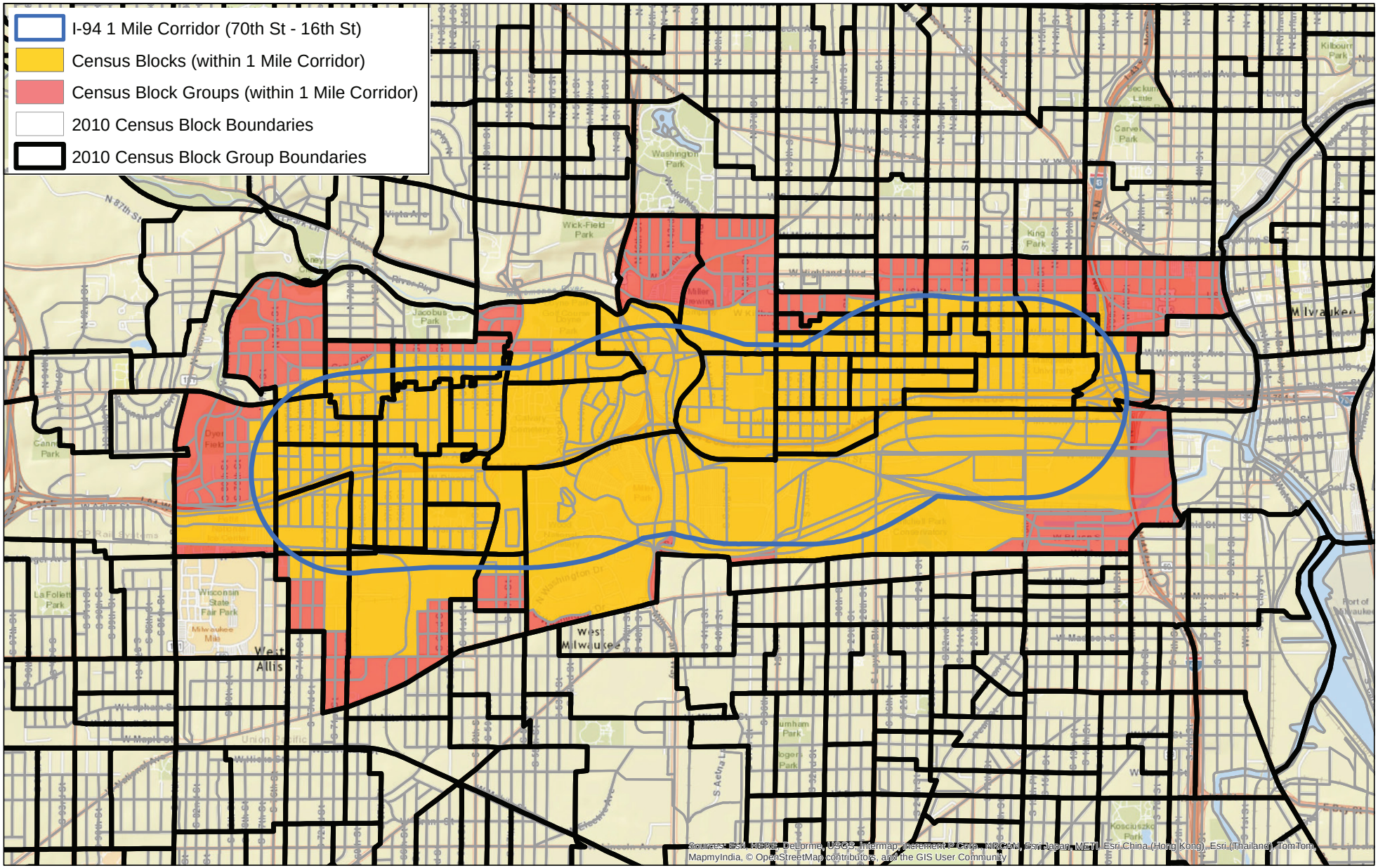
Comparison of census blocks versus block groups



U.S. Department of Transportation
Federal Highway Administration

Census data blocks versus block groups within study area of I-94

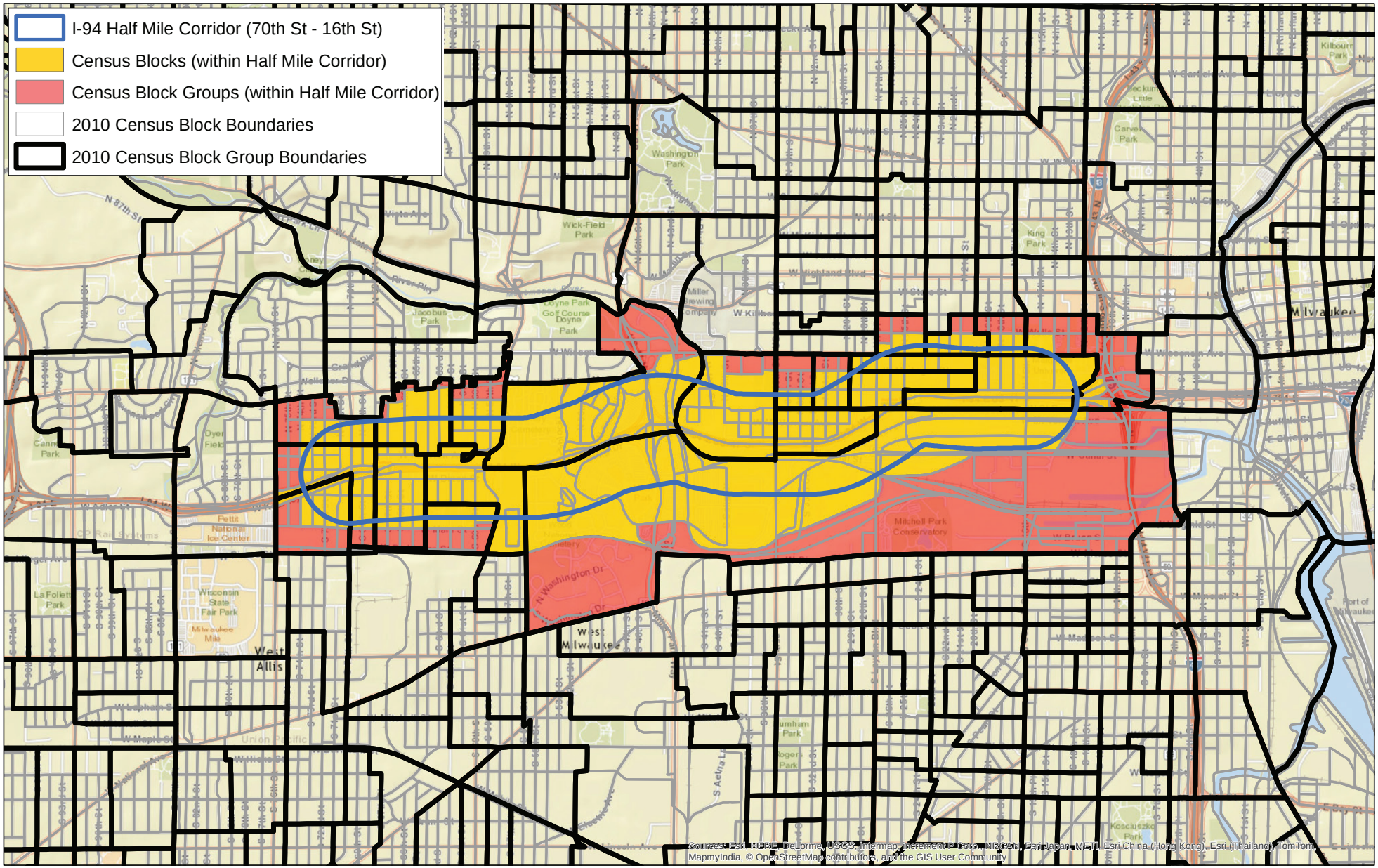
TR0315151044MKE Memo Exhibits\Census Blocks\Census Block_StudyArea 10.09.15 sls



U.S. Department of Transportation
Federal Highway Administration

Census data blocks versus block groups within 1-mile corridor of I-94

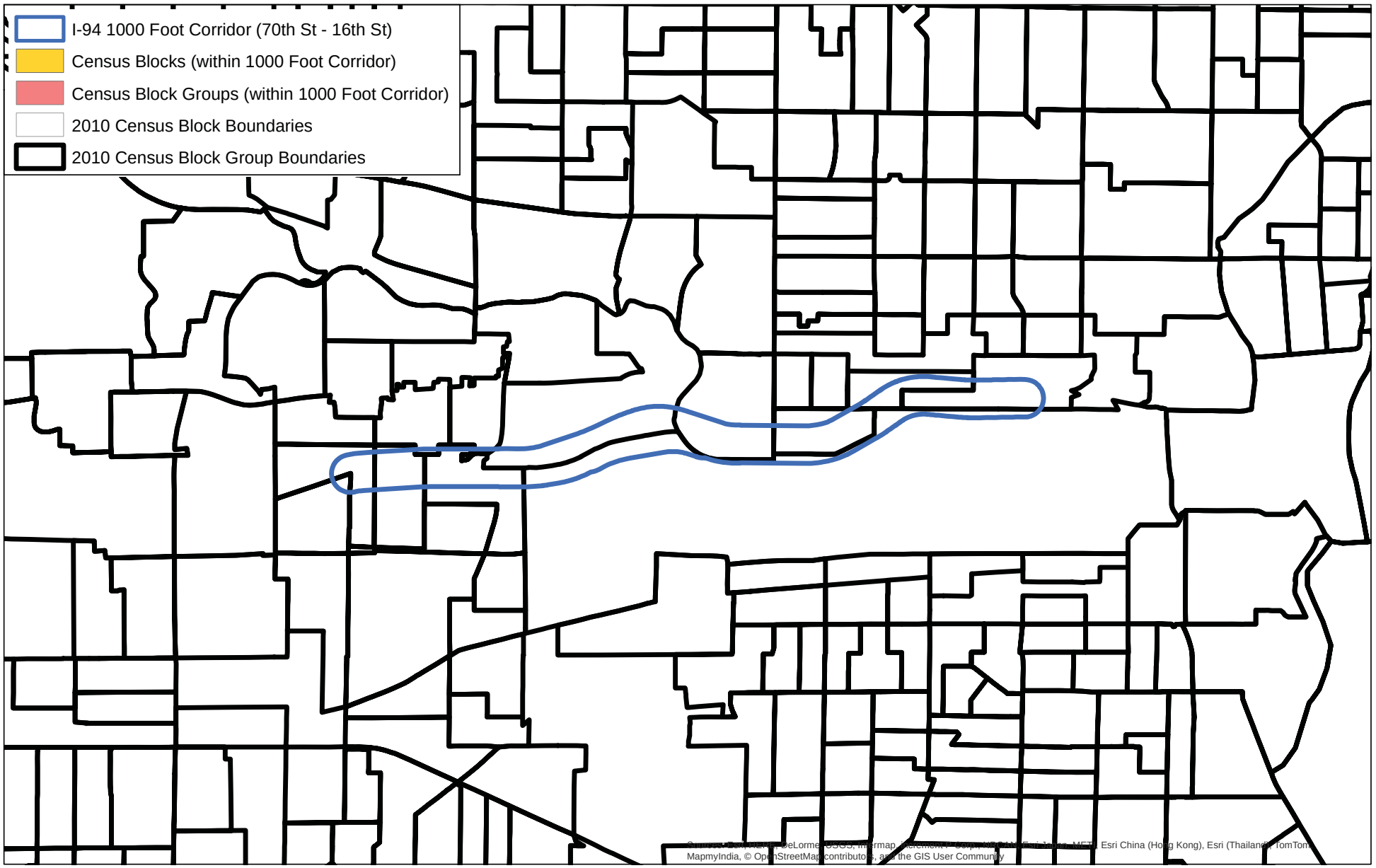
TR0315151044MKE Memo Exhibits\Census Blocks\Census Block_1_Mile 10.02.15 sls



U.S. Department of Transportation
Federal Highway Administration

Census data blocks versus block groups within 0.5-mile corridor of I-94

TR0315151044MKE Memo Exhibits\Census Blocks\Census Block_.5_Mile 10.02.15 sls



U.S. Department of Transportation
Federal Highway Administration

Census data blocks versus block groups within study area of I-94

Federal Highway Administration
525 Junction Rd, Suite 8000
Madison, WI 53717-2157

Federal Transit Administration
200 W. Adams Street, Suite 320
Chicago, IL 60606-5232

September 15, 2015

Mr. Kenneth R. Yunker, Executive Director
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607

Dear Mr. Yunker:

The Federal Highway Administration and Federal Transit Administration jointly reviewed the Southeastern Wisconsin Regional Planning Commission's (SEWRPC) July 8, 2015 communication and documentation supporting a federal determination of transportation air quality conformity on the amended regional transportation plan and TIP. The plan amendment accounts for proposed changes in access at the current I-94 interchanges at Hawley Road and Mitchell Boulevard as part of the recommended alternative for the I-94 East-West Corridor Project (70th Street to 16th Street) in Milwaukee County.

Principal documentation defining the recommended transportation system, the near term transportation improvement program, and assessment of their impacts on transportation conformity include:

- SEWRPC Planning Report No. 49, A Regional Transportation System Plan for Southeastern Wisconsin: 2035;
- SEWRPC Memorandum Report No. 215 *Review and Update of the Year 2035 Regional Transportation Plan* (RTP);
- *A Transportation Improvement Program for Southeastern Wisconsin: 2015-2017* as amended (TIP);
- SEWRPC Memorandum Report No. 217 *Assessment of Conformity of the Year 2035 Regional Transportation Plan and the Year 2013-2016 Transportation Improvement Program for the 2008 Eight-Hour Ozone and 2006 24-Hour Fine Particulate (PM2.5) National Ambient Air Quality Standards*;
- 5th Edition, SEWRPC Technical Report 10, "The Economy of Southeastern Wisconsin;"
- 5th Edition, SEWRPC Technical Report 11, "The Population of Southeastern Wisconsin;" and
- Additional documentation supporting this determination includes:
    - SEWRPC Staff Memorandum, "Proposed Amendment to the Adopted Year 2035 Regional Transportation Plan," August 6, 2015;
    - SEWRPC Staff Memorandum, "Updated Assessment of Conformity of the Year

2035 Regional Transportation Plan as Amended to Reflect the Recommended Alternative of the Environmental Impact Study for the Reconstruction of IH 94 Between 70th Street and 16th Street with Respect to the 24-Hour Fine Particulate National Ambient Air Quality Standard."

The conformity demonstration relies and is based on the collective information in all of these documents as well as other documents referenced therein.

The RTP and TIP apply to the six-county southeastern Wisconsin metropolitan planning area consisting of Washington, Ozaukee, Waukesha, Milwaukee, Racine, and Kenosha Counties. The conformity assessment and this determination pertain specifically to the 2006, 24-Hour Fine Particulate (PM2.5) National Ambient Air Quality Standards and the associated three-county maintenance area (Milwaukee, Waukesha, and Racine Counties).

FHWA and FTA find that the RTP and TIP meet the following requirements:

- The transportation system envisioned for horizon and analysis years is described, including identification of design concept, scope, and operating policies of regionally significant additions or modifications to the existing system sufficient to determine travel times, traffic volumes, transit ridership, and relationship with expected land use;
- Significant future transportation policies, requirements, services, and activities are described;
- Fiscal constraint is demonstrated consistent with federal metropolitan transportation planning requirements, policies, and guidance;
- Latest planning assumptions are used, including:
    - Estimates of current and future population, employment, travel, and congestion, based on:
        - Updated year 2050 population and employment forecasts, and
        - Adjustment to reconcile differences between modeled and estimated actual average weekday vehicle miles of travel.
    - Changes in transit operating policies (including fares and service levels) and assumed transit ridership since the previous conformity determination;
    - Reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time;
    - Use of the latest existing information regarding the effectiveness of the TCMs and other implementation plan measures which have already been implemented; and
- Use of the latest emissions estimation model – MOVES 2014. October 2014 release.

Interagency consultation occurred among the USEPA, Wisconsin DNR, Wisconsin DOT, FHWA, FTA, and SEWRPC based on May 14, 2015, May 21, 2015, June 8, 2015, and July 8, 2015 email correspondences and discussion at the July 16, 2015 meeting of the Wisconsin Transportation Conformity Workgroup. Consultation included agreement on the latest planning assumptions, latest emissions model, and appropriate conformity tests and analysis years to be used in the regional emissions analysis as documented in SEWRPC's July 8, 2015 email and attachments. The USEPA, Wisconsin DNR, and Wisconsin DOT all provided reviews and comments supporting approval of the SEWRPC conformity determination.

SEWRPC provided opportunity for public comment on the plan amendment and conformity assessment during a formal public comment period from July 8 through August 6, 2015. No comments were received.

There are no transportation control measures in approved Wisconsin air quality SIPs.

SEWRPC's regional emissions analysis demonstrates that implementation of the amended RTP and TIP will result in mobile source emissions within the motor vehicle emissions budget established in the Wisconsin maintenance plan for the 2006-24 hour PM2.5 NAAQS.

Accordingly, FHWA and FTA jointly determine the SEWRPC RTP as amended and TIP to be in conformance with the transportation planning requirements of Titles 23 and 49 U.S.C., the CAAA, and related regulations as they pertain to the 2006-24 hour PM2.5 NAAQS and associated Milwaukee-Waukesha-Racine counties maintenance area. This conformity determination does not include or alter the current ozone conformity determination impacting Eastern Kenosha County.

This conformity finding is valid for a period of four years. A new air quality conformity determination will be required if either the RTP or TIP is modified by adding, removing, or changing the implementation schedule of a regionally significant or non-exempt project or if any other triggering events specified in 40 CFR 93.104 occur. Conformity can also lapse if the RTP or TIP is not updated within the required renewal period of four years.

Should you have any questions regarding this conformity finding, please contact me at (608) 829-7518.

Sincerely yours,

Dwight E. McComb
Systems Planning & Performance Manager
On Behalf of the U.S. Department of Transportation
Federal Highway Administration
Federal Transit Administration

ecc: Aileen Switzer, WisDOT, DTIM
Donna Brown-Martin, WisDOT, DTIM, BPED
Patricia Trainer, WisDOT, DTSD, BTS
Tony Barth, WisDOT, SE Region
Michael Leslie, USEPA
Bart Sponseller, WDNR
Christopher Bertch, FTA

CORRESPONDENCE/MEMORANDUM _____ **State of Wisconsin**

RECEIVED BY:
SEP 19 2012
FHWA - Wisconsin Division Office

Date: September 19, 2012

To: Beth Cannestra
Director, Bureau of Project Development
Attn: Don Greuel, PE

From: Jason Lynch, PE
Southeast Region

Subject: DHV & LOS for I-94 East-West Stadium Interchange Study
Project I.D. 1060-27-00
IH 94, 25th Street to 70th Street
Milwaukee County

Having considered the economic and social effects of this project, its impact on the environment, and its consistency with the goals of community planning, we request your approval of the attached technical memorandum.

David Nilsestuen 9/19/12
Region Project Development Chief Date

Concur:

William R. anderson 9/19/12
For Bureau of Project Development, Date
Project Services Chief

Wesley A Shemwell 9/20/12
FHWA (Federal Oversight Projects Only) Date

CORRESPONDENCE MEMORANDUM

Wisconsin Department of Transportation
Division of Transportation Investment Management

Date: September 6, 2012

To: Tony Barth, P.E
DTSD, SE Freeways

William Anderson, P.E.
DTSD, PDS

From: Joseph Nestler, P.E.
DTIM, Bureau of State Highway Programs

Subject: DHV for I-94 East-West Stadium Interchange Study

The Design Hour Volume (DHV) and target level of service (LOS) are both important design criterion that will be used to evaluate traffic operations for the design alternatives for this Major Highway Study Project. The recommendations and rational below demonstrates that it is important to use reasonable traffic conditions that provide a responsible stewardship approach for this corridor.

WisDOT's BSHP approves the Region's study team recommendation to use a DHV based on the AM and PM peak hour volumes for the following reasons:

- According to the I-94 technical DHV memo from Marty Hawley, the 2010 and 2009 AM or PM design hour volumes closely mirror the K200 values. The 2009 K200 volumes are within 0.2% of the greater AM or PM peak hour volumes for all three locations on I-94. Although the 2010 K200 volumes are within a reasonable range of the AM or PM peak volumes, they show slightly higher differences, which could be due to Zoo Interchange work that occurred between January and April of 2010.
- SEWRPC has provided forecasted AM and PM peak hour traffic volumes for the year 2040 for the project study area. Significant effort would be required to build the additional K200 forecasts on the mainline and ramp terminals, and to build additional trip tables needed for the Paramics modeling. Given the close correlation between K200 and AM or PM peak volumes, we do not feel that it is cost effective to include K200.
- FHWA currently has an agreement with WisDOT to use the 200th highest hourly volume for the SE Freeway system in Milwaukee County and on I-94 in Waukesha County.
- This corridor is heavily used by Milwaukee commuters and for special events at the Stadium and in downtown Milwaukee. The FDM states that "There may be unique circumstances where K30 is not realistic to use because of exceptionally high hourly volume peaking characteristics. These conditions may occur on highly recreational routes, or routes that are in close proximity to a stadium or seasonal shopping mall. Additionally, higher design hour volumes may be justified when the LOS using K30 cannot be achieved because of social, environmental, or financial constraints." When higher design volumes are justified, the FDM recommends K250 for highly urbanized areas with heavy daily traffic.

WisDOT's BSHP also approves the Region's study team recommendation to use LOS D as an acceptable LOS for this corridor for the following reasons:

- LOS D is considered an acceptable LOS on other Milwaukee County freeway segments and interchanges.

- LOS D is considered acceptable on other various large urban freeway corridors throughout the nation. For example, Florida's Department of Transportation considers LOS D as acceptable on freeways in urbanized areas greater than 500,000.
- LOS D is likely to be more cost effective than LOS C in this highly urbanized corridor. The acquisition of any new right-of-way could be prohibitive because of the cemeteries and development on either side of this corridor. This could result in unique design alternatives that have costs drastically higher than the typical costs of adding capacity.
- The travel time costs of LOS D versus LOS C are expected to be minimal. According to the 2010 HCM Exhibit 11-6, the minimum speeds in LOS D conditions for a 60 mph free flow speed are estimated to be about 57 mph, which is above the projected speed limit. If a free flow speed of 65 mph is used, the minimum speed still remains at about 59 mph.

If FHWA grants approval for this recommendation, we would like to request that the LOS documentation includes language that states that the K200 volumes are essentially equivalent to the AM or PM peak period volumes.

Additionally, we recommend providing the LOS letter and numeric value to stakeholders when discussing alternative designs for this corridor. This numeric value from the table below (from FDM 11-5-3, Table 3.2) can be computed using the performance measure for the facility type (e.g., density for freeways).

LEVEL OF SERVICE (Letter Value)	*LEVEL OF SERVICE (Numeric Value)*
A	1.01 to 2.00
B	2.01 to 3.00
C	3.01 to 4.00
D	4.01 to 5.00
E	5.01 to 6.00
F	6.01 to ~

Thank you for the opportunity to comment. Please contact me or Dawn Krahn if you have any questions.

TECHNICAL MEMORANDUM

To: Tony Barth, P.E.
SE Freeways, WisDOT

From: Marty Hawley, P.E.
I-94 East-West Stadium Interchange Team

Re: DHV and LOS for I-94 East-West Stadium Interchange Study

Date: September 18, 2012

The Design Hour Volume (DHV) is an important design criterion in order to evaluate freeway design alternatives with a level of traffic appropriate for the environment. The WisDOT Facilities Design Manual (FDM) recommends use of the 30th highest hour (K30) for mainline freeways. However, it indicates there may be unique circumstances where K30 is not realistic to use because of exceptionally high hourly volume peaking characteristics. According to the FDM, "peaking characteristics may occur on highly recreational routes, or routes that are in close proximity to a stadium or seasonal shopping mall. Additionally, higher design hour volumes may be justified when the LOS using K30 cannot be achieved because of social, environmental, or financial constraints." When higher design volumes are justified, the FDM recommends K250 for highly urbanized areas with heavy daily traffic.

The I-94 East West Stadium Interchange study falls within both a heavy daily commuter route and a highly used special event corridor. Miller Park, the Milwaukee Brewers stadium, is located in the stadium interchange approximately in the middle of the I-94 East West study area. The Brewers host 81 home games a year throughout the season with attendance averaging over 35,000 fans per game for the last four years. Large concert events such as Farm Aid and other special events utilize the stadium as well. State Fair Park is also located on the western edge of the study area, which hosts the Wisconsin State Fair for eleven days in August each year. The fair averaged close to 83,000 people per day in 2012, and the fairgrounds host a number of other special events, including racing events at the Milwaukee Mile. The I-94 East-West freeway is also the main corridor from the west for all downtown special events including Summerfest, the Ethnic festivals, and at downtown venues including the BMO Harris Bradley Center.

The Federal Highway Administration (FHWA) generally recommends using K30 for freeway design. However, FHWA currently has an agreement with the Wisconsin Department of Transportation (WisDOT) Southeast (SE) Freeways that the 200th highest hourly volume (K200) is an appropriate design hourly volume for the freeway system in Milwaukee County, and I-94 in Waukesha County.

The I-94 East West Stadium Interchange Study is bordered by the Marquette Interchange on the east and the Zoo Interchange on the west. Reconstruction of the Marquette Interchange took place between 2005 and 2008. In the Zoo Interchange, three bridges required emergency full closures from January until April of 2010. Additionally, a repaving project took place within the study area in the spring and summer of 2011 and 2012. Therefore, the existing available traffic data for the study area is from 2009 and 2010. Because of the emergency bridge closures, 2009 more accurately represents typical traffic conditions in the study area.

Table 1 on the following page illustrates how the 2009 and 2010 AM and PM peak hour volumes compare to the existing K200 volumes at four Automatic Traffic Recorder (ATR) locations within the project area. When comparing hourly volumes as a percent of the Average Annual Daily Traffic (AADT) volumes, in 2009 the K200 volume is within 0.2% of the greater AM or PM peak hour volume for all three locations on I-94. The USH 41 location at Vliet Street demonstrates a greater difference between K200 and the peak hour volumes, which could be because of special event traffic.

In 2010, the K200 volume is within 0.5% of the greater AM or PM peak hour percentages for two locations on I-94. The location on I-94 at 26th Street and the USH 41 location at Vliet Street demonstrate a greater difference between K200 and peak hour volumes in 2010. Brewers game day traffic or other downtown special events may cause a greater difference in volumes at these locations.

Table 1. 2009 and 2010 AADT and K-Factor Percentages of AADT

ATR	Location	Traffic Parameter	Year 2009 (Existing)	Year 2009 (K %)	Year 2010 (Existing)	Year 2010 (K %)
40-0002	I-94 Between Hawley Road and Mitchell Boulevard - Cemetery Access	AADT	152,500		148,190	
		K 7:00 am	11,250	7.4%	10,710	7.2%
		K 4:30 pm	10,600	7.0%	10,300	7.0%
		K30	12,330	8.1%	12,130	8.2%
		K100	11,850	7.8%	11,760	7.9%
		K200	**11,590**	**7.6%**	**11,480**	**7.7%**
40-0050	I-94 West of 37th Street	AADT	153,000		153,115	
		K 7:00 am	11,410	7.5%	11,390	7.4%
		K 4:30 pm	10,410	6.8%	10,200	6.7%
		K30	12,890	8.4%	12,820	8.4%
		K100	12,060	7.9%	12,230	8.0%
		K200	**11,650**	**7.6%**	**11,770**	**7.7%**
40-0003	I-94 at 26th Street	AADT	140,000		138,390	
		K 7:00 am	10,600	7.6%	9,960	7.2%
		K 4:30 pm	9,570	6.8%	8,860	6.4%
		K30	11,850	8.5%	12,000	8.7%
		K100	11,350	8.1%	11,650	8.4%
		K200	**10,810**	**7.7%**	**11,060**	**8.0%**
40-0013	USH 41 at Vliet Street	AADT	47,800		47,780	
		K 7:00 am	3,890	8.1%	3,810	7.5%
		K 4:30 pm	3,990	8.3%	4,060	7.9%
		K30	4,440	9.3%	4,530	9.5%
		K100	4,340	9.1%	4,430	9.3%
		K200	**4,250**	**8.9%**	**4,330**	**9.1%**

Because the K200 volumes typically align with the greater of the AM or PM peak hour volumes within the I-94 corridor, the project team for the I-94 East West Stadium Interchange Study is recommending use of AM and PM peak hour volumes for the project analysis.

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) has provided forecasted peak hour traffic volumes for the year 2040 for the project study area. The project team plans to use the AM and PM peak hour forecast to complete both Highway Capacity Manual (HCM) and micro-simulation analysis of design alternatives.

In addition to the DHV, level of service (LOS) is also an important criterion in the evaluation of design alternatives. The project team for the I-94 East West Stadium Interchange Study recommends LOS "D" as the goal for traffic operations on this project. LOS "D" is considered an acceptable LOS nationally and is consistent with what has been deemed as 'acceptable congestion' on other Milwaukee County freeway segments and interchanges.

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

WHEREAS, the Federal Highway Administration (FHWA) proposes to improve the Interstate 94 (I-94) East-West Corridor, Milwaukee, Wisconsin, described as the Preferred Alternative in the *Environmental Impact Statement Interstate 94 East-West Corridor*; and

WHEREAS, FHWA proposes to make improvements to I-94 to 3.5 miles of I-94 in Milwaukee, Wisconsin, from 70th Street (west terminus) to 16th Street (east terminus), which includes the Stadium Interchange (Project), as illustrated in Attachment 1; and

WHEREAS, off-interstate intersection improvements are included in this Project at the intersections of National Avenue and Miller Park Way, National and Greenfield avenues, and Greenfield Avenue at 70th Street intersections, as well as the Washington Street extension; and

WHEREAS, FHWA is the lead agency on this Project and is, therefore, responsible for compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations provided in 36 Code of Federal Regulations (CFR) Part 800; and

WHEREAS, FHWA as the lead agency on this Project is responsible for compliance with Section 110 of the NHPA, particularly Section 110(f) regarding National Historic Landmarks (NHL); and

WHEREAS, FHWA has established the Project's area of potential effects (APE), as defined at 36 CFR 800.16(d), in consultation with the Wisconsin State Historic Preservation Officer (SHPO) and Consulting Parties; the APE includes the properties adjacent to I-94, US 41/Miller Park Way, and other roads crossing over or under I-94 that would be reconstructed, and encompasses the entirety of the identified historic properties that intersect with or are adjacent to I-94 (see Attachment 2); and

WHEREAS, FHWA has determined that the development of a Programmatic Agreement (PA), in accordance with 36 CFR 800.14(b)(1)(ii), is warranted because some details of the Project cannot be determined until final design and the effect on historic properties is conditional, based on completion of the stipulations contained herein; and

WHEREAS, FHWA has identified the following historic properties within the APE: Northwestern Branch, National Home for Disabled Volunteer Soldiers' National Historic Landmark (Soldiers' Home NHL); Northwestern Branch, National Home for Disabled Volunteer Soldiers' National Register Historic District (Soldiers' Home Historic District); Soldiers' Home Reef NHL; Calvary Cemetery; Story Hill Residential Historic District 1; Story Hill Residential Historic District 2 and 3; and Paradise Theater; and

WHEREAS, FHWA has determined that the Project will have no adverse effect on the Soldiers' Home Reef NHL; Calvary Cemetery; Story Hill Residential District 1; Story Hill Residential District 2 and 3; and the Paradise Theater; and

WHEREAS, FHWA has determined that the Project will have no adverse effect on the Soldiers' Home NHL and the Soldiers' Home National Register Historic District based on implementation of the conditions in this agreement; and

WHEREAS, the purpose of this PA is to ensure the Project will have no adverse effect on historic properties as determined by FHWA in the *Revised Assessment of Adverse Effects for the I-94 East-West Corridor Project,* dated September 24, 2014 and the Addendum to that document, dated November 02, 2015; and

WHEREAS, Story Hill Residential Historic District 2 and 3 is eligible for the construction of a noise barrier to reduce noise levels at benefitted receptors, and effects related to Section 106 regarding the construction of a noise barrier have not been determined; and

WHEREAS, letters describing the Project and its objectives and inviting participation were sent to the following federally-recognized Indian Tribes: Bad River Band of Lake Superior, Chippewa Indians of Wisconsin; Sac & Fox Nation of Oklahoma; Sokaogon Chippewa Community, Mole Lake Band; Forest County Potawatomi, Community of Wisconsin; Ho-Chunk Nation; Lac Vieux Desert Band of Lake Superior Chippewa Indians; Menominee Nation; Prairie Band Potawatomi Nation; Red Cliff Band of Lake Superior, Chippewa Indians of Wisconsin; Sac & Fox Nation of Mississippi in Iowa; and Sac & Fox Nation of Missouri in Kansas and Nebraska; and

WHEREAS, the Forest County Potawatomi, Community of Wisconsin has participated in Section 106 consultation and has been invited to sign this PA as a Concurring Party to this PA; and

WHEREAS, FHWA has consulted with the Advisory Council on Historic Preservation (Council), SHPO, National Park Service, National Trust for Historic Preservation, City of Milwaukee Historic Preservation Commission, Archdiocese of Milwaukee Catholic Cemeteries, Beth Hamedrosh-Hagodel Cemetery, Wood National Cemetery, Department of Veterans Affairs Medical Center, Department of Veterans Affairs National Cemetery Administration, and Milwaukee Preservation Alliance in accordance with 36 CFR Part 800.6(b)(2); and

WHEREAS, the Council has elected to participate in the Section 106 consultation process and is a Signatory to this PA; and

WHEREAS, as the agency having oversight of the Soldiers' Home NHL, the National Park Service has participated in consultation and is an Invited Signatory to this PA; and

WHEREAS, Wisconsin Department of Transportation (WisDOT) participated in the Section 106 consultation and is an Invited Signatory to this PA; and

WHEREAS, the National Cemetery Administration (NCA) participated in the Section 106 consultation and is an Invited Signatory to this PA; and

WHEREAS, the Department of Veteran Affairs (VA) Medical Center has participated in the Section 106 consultation, and is an Invited Signatory to this PA; and

WHEREAS, the following are Consulting Parties, have participated in the Section 106 consultation process, and have been invited to sign this PA as Concurring Parties, in accordance with 36 CFR 800.6(c)(3): Milwaukee Preservation Alliance, Archdiocese of Milwaukee Catholic Cemeteries, National Trust for Historic Preservation, City of Milwaukee Historic Preservation Commission, and Beth Hamedrosh-Hagodel Cemetery; and

WHEREAS, in this PA, "Signatories" refers to: Signatories, as defined in 36 CFR 800.6(c)(1) and Invited Signatories, as defined in 36 CFR 800.6(c)(2); and

NOW, THEREFORE, FHWA, SHPO, the Council, and WisDOT agree that, upon FHWA's decision to proceed with the Project, FHWA shall ensure that the following stipulations are implemented in order to take into account the effects of the Project on historic properties, and that these stipulations shall govern the Project:

STIPULATIONS

FHWA in coordination with WisDOT shall ensure the following stipulations are implemented to ensure adverse effects from the Project to the Soldiers' Home NHL, the Soldiers' Home National Register Historic District and the other identified historic properties are avoided.

I. DESIGN REVIEW

A. Design Coordination Plan

WisDOT or its agent will create a Design Coordination Plan in order to ensure the Project is designed in a way that will not adversely affect historic properties. The draft Design Coordination Plan will be submitted to Signatories and Consulting Parties for review and comment in accordance with Stipulation VI prior to implementation and will include:

1. Zablocki Drive Bridge and approaches
2. Height of I-94 adjacent to Wood National Cemetery of the Soldiers' Home NHL and Historic District
3. Access to Soldiers' Home NHL and Historic District
4. Locations covered by the plan
5. Benchmarks for review
6. Timeframe for review
7. Definition of design review process

B. Implement Design Coordination Plan

II. PREPARE CONSTRUCTION STAGING PLAN

WisDOT or its agent will prepare a Construction Staging Plan prior to initiation of construction in the vicinity of historic properties. The Construction Staging Plan will cover the locations of the construction staging areas for storage and staging of active construction in order to avoid impacts to historic properties. The draft Construction Staging Plan will be submitted to Signatories and Consulting Parties for review and comment in accordance with Stipulation VI prior to implementation of the plan and will include, but not be limited to:

A. Identification of locations and sizes of staging areas for storage of construction materials and equipment outside WisDOT right-of-way to avoid adverse effects to historic properties

B. Staging of active construction activities within WisDOT right-of-way

1. Location and timing of staging activities
2. Connectivity between the two sides of Wood National Cemetery (north and south of I-94) will be provided during construction and stipulated in the plan.

C. The Construction Staging Plan will be incorporated into appropriate documents

D. Implement the Construction Staging Plan

III. PRE-CONSTRUCTION WALK THROUGH

WisDOT or its agent will define the parameters and goals for up to two pre-construction walk-through(s) with the Signatories and Consulting Parties to this PA prior to the commencement of construction activities. Criteria for pre-construction walk through parameters include:

A. Goals of the walk through(s)

B. Area(s) covered by the walk through(s)

C. Participants of the walk through(s)

D. Timeframe for the walk through(s)

IV. SOLDIERS' HOME NATIONAL HISTORIC LANDMARK AND NATIONAL REGISTER HISTORIC DISTRICT

A. Wood National Cemetery

1. Landscape Plan

WisDOT or its agent will prepare a Landscape Plan for areas adjacent to I-94 for adoption prior to completion of the freeway design for the portion of the Project adjacent to Wood National Cemetery. WisDOT or its agent will submit the draft Landscape Plan to Signatories and Consulting Parties for review and comment in accordance with Stipulation VI prior to implementation of the plan. The Landscape Plan will include, but not be limited to:

a. Area covered by the Plan

b. Landscape Plan will be consistent with the historic character of the Soldiers' Home NHL and Historic District landscape as defined in the Soldiers' Home Historic American Landscape Survey

c. Implement the Landscape Plan

2. Wall Design Plan

Create a Design Plan for the walls on the north and south sides of I-94. The draft plans will be submitted to Signatories and Consulting Parties for review and comment in accordance with Stipulation VI prior to implementation.

a. Create a Design Plan for the walls that will include specifications for the design, height, size, materials, and appearance of the walls. The draft Design Plan for the Wood National Cemetery walls will be submitted to Signatories and Consulting Parties for review and comment, in accordance with Stipulation VI, prior to implementation.

b. Implement the Wall Design Plan.

3. Prepare Signage Plan

WisDOT or its agent will prepare a Signage Plan prior to completion of the of the freeway design. The draft Signage Plan will be submitted to Signatories and Consulting Parties for review and comment, in accordance with Stipulation VI, prior to implementation of the plan and will include, but not be limited to:

a. Area covered by the Plan

b. Types of signage covered by the Plan

i. Type 1 highway signage

ii. NHL/Wood National Cemetery signage

c. Location of signage

d. Minimize Type 1 highway signage where I-94 passes through Wood National Cemetery

e. Design of signage

f. Implement the Signage Plan

4. Prepare Monitoring Plan

   WisDOT or its agent will prepare a Monitoring Plan prior to completion of I-94 design for the segment of the Project adjacent to the NHL and Historic District. The draft Monitoring Plan will be submitted to Signatories and Consulting Parties for review and comment in accordance with Stipulation VI prior to implementation of the Plan. The Monitoring Plan will include:

   a. Area(s) covered by the Plan

   b. Construction activities covered under the Plan

   c. Obtain proper permits and authorizations

   d. Assess appropriate vibration criteria, if applicable

   e. Monitoring provisions

   f. Determine if any buildings or structures would be included in the Plan

   g. Raise and align survey for grave markers within Wood National Cemetery

   h. Implement the Monitoring Plan

B. National Avenue at Miller Park Way Improvements Plan

   As part of the off-interstate intersection improvements, WisDOT will prepare a plan for the improvements to National Avenue. The draft Plan will be submitted to Signatories and Consulting Parties for review and comment in accordance with Stipulation VI prior to implementation of the Plan. The plan will ensure no adverse effects on the Soldiers' Home NHL[1] from on the off-interstate intersection improvements at National Avenue and General Mitchell Drive, and will include measures to:

   1. Minimize the footprint of the widening

   2. Minimize impacts to identified heritage trees within the Soldiers' Home NHL, as defined in the Soldiers' Home Historic American Landscape Survey

   3. Minimize visual impact on the Soldiers' Home NHL through additional landscaping features, in accordance with the Historic American Landscape Survey

   4. Implement the Improvements Plan

V. STORY HILL RESIDENTIAL HISTORIC DISTRICT 2 AND 3

A. Noise Barrier Design Plan

   WisDOT or its agent will prepare a Noise Barrier Design Plan after execution of this PA. The draft Noise Barrier Design Plan will be submitted to Signatories and Consulting Parties for review and comment in accordance with Stipulation VI, prior to voting by the benefitted receptors.

   1. The Noise Barrier Design Plan will address the visual effects of the noise barrier on the setting of the historic district. The plan will include, at a minimum:

      a. Area covered by the noise barrier.

      b. Visual effects on the setting of the historic district.

[1] At this location, the boundaries of the Soldiers' Home NHL and Soldiers' Home Historic District differ. The off-interstate improvements along National Avenue would not impact the Soldiers' Home Historic District

c. Range of aesthetics options to be presented at the noise barrier public involvement meeting.

d. Noise barrier will be sited outside of the boundaries of the historic district.

2. If a simple majority of the benefitted receptors vote in favor of the noise barrier, implement noise barrier plan.

3. If there is not a simple majority of the benefitted receptors in favor of the noise barrier, the barrier will not be constructed.

VI. CONSULTATION AND REVIEW

A. FHWA will consult with the Signatories and the Consulting Parties as required by the stipulations of this PA.

B. FHWA will submit reports and plans to the Signatories and Consulting Parties for review and comment. Respondents will have thirty (30) calendar days to review and comment on submissions.

1. FHWA will respond in writing to written comments.

2. There will be an opportunity for Signatories and Consulting Parties to review the responses to the comments submitted under VI.B.

C. In the event of unresolved disagreement among the parties regarding the comments on a particular stipulation, the matter will be addressed in accordance with Stipulation X, Dispute Resolution.

VII. UNANTICIPATED DISCOVERIES AND UNANTICIPATED EFFECTS

A. WisDOT will insert into all contracts for excavation, construction, or other ground-disturbing activities during the Project the procedures described below for the treatment of unanticipated discoveries and effects to archeological resources. WisDOT will ensure the processes described below are followed in order to minimize the risk of construction delay if archaeological sites that are eligible for listing in the NRHP are discovered during project implementation.

1. If significant archaeological resources are discovered during construction within the APE, WisDOT shall halt all work involving ground disturbance in the immediate area of the discovery until the archeological resources can be identified, documented, and an appropriate mitigation strategy is developed for consultation. WisDOT will consult with the Consulting Parties regarding the findings and recommendations.

2. Upon making the discovery, WisDOT shall notify the Consulting Parties regarding the following:

a. Assessment of whether the data available permit a determination of eligibility for the NRHP, and, if not, plans to complete an archeological report of investigations of the identified resources, or

b. If the resources are eligible for listing in the NRHP, the actions that WisDOT proposes to resolve the potential adverse effects

3. Interested parties shall have five (5) business days (not including a federal holiday) from receipt of written notification to respond to WisDOT.

4. WisDOT shall take into account recommendations provided by the Consulting Parties. FHWA shall make a final decision on proposed actions.

B. Disputes regarding the final decision will be resolved in accordance with Stipulation X Dispute Resolution.

VIII. DISCOVERY OF HUMAN REMAINS

A. WisDOT will insert into all contracts for excavation, construction, or other ground-disturbing activities in the (Project) the procedures described below for the treatment of inadvertent/accidental human remain discoveries. WisDOT will ensure the processes described below are followed in order to minimize harm and damage/disturbance to human burial sites.

B. If human remains are inadvertently/accidentally discovered during implementation of the Project, all ground disturbing activities in the immediate area of the discovery shall halt until the following actions have been carried out, in accordance with Wisconsin Statute 157.70 and the Native American Graves Protection and Repatriation Act, as required. WisDOT shall immediately implement measures to protect the human remains from inclement weather and vandalism, and notify appropriate law enforcement officials to determine whether or not the remains are subject to a criminal investigation by local or federal authorities. NCA will be notified and consulted if human remains are discovered within or adjacent to Wood National Cemetery.

C. WisDOT shall provide sufficient information to allow law enforcement to determine if the remains are or are not subject to a criminal investigation by local or federal authorities.

1. If it is determined the human remains are not subject to a criminal investigation by local or federal authorities, FHWA/WisDOT shall obtain the services of qualified cultural resource professionals to comply with all applicable federal (Native American Graves Protection and Repatriation Act when relevant), state (Wisconsin Statute 157.70), and local laws governing the discovery and disposition of human remains.

2. If it is determined Native American human remains or funerary objects have been discovered in a parcel/land owned by the federal government, FHWA/WisDOT shall immediately notify the appropriate federal land manager, affected Indian tribes, and consulting parties of this PA (within 24 to 48 hours; not including a holiday).

3. If it is determined human remains have been discovered on state, state sub-division, or private lands FHWA/WisDOT shall immediately notify the SHPO, and the consulting parties of this PA (within 24 to 48 hours; not including a holiday).

D. Before making any final decision regarding the treatment of human remains, FHWA/WisDOT shall within five (5) business days (not including a federal holiday) after discovery of such remains initiate consultation with the Council, SHPO, Indian tribes (if applicable), and Consulting Parties to prepare and implement treatment measures and treatment plans in accordance with applicable federal, state (Wisconsin Statute 157.70) and local laws.

E. WisDOT will submit the state Request to Disturb a Human Burial Site form, in accordance with Wisconsin Statute 157.70.

IX. REPORTING

A. Bi-annual Reports. In order to monitor completion of the stipulations contained in this PA, WisDOT, on behalf of FHWA, will prepare and submit two (2) reports per year to Signatories and Consulting Parties summarizing the actions taken to fulfill the stipulations of this PA. The Signatories may agree to change the frequency of the reports to annually.

B. Annual Meetings. WisDOT will hold annual meetings with the Signatories and Consulting Parties to discuss activities carried out pursuant to this PA during the preceding year and

activities scheduled for the coming year. Bi-annual reports, as described in Stipulation IX.A., shall be distributed to the Signatories and Consulting Parties at least fifteen (15) calendar days prior to the annual meeting.

C. Schedule. The timeframe for the annual reports and annual meetings will commence from the execution date of this PA.

D. Final Report. A final report describing the completion of the stipulations contained in this PA will be submitted to Signatories and Consulting Parties three (3) months prior to the PA expiration date.

X. DISPUTE RESOLUTION

A. Should any Signatory to this PA object within thirty (30) calendar days to any documentation or materials submitted for review, actions proposed, or review comments submitted pursuant to this PA, FHWA shall consult with the objecting party and/or parties to resolve the objection.

B. If FHWA determines that the objection cannot be resolved, FHWA shall forward documentation relevant to the dispute and request comment from the Council. Within forty-five (45) days after receipt of pertinent documentation, the Council will either provide FHWA with comments that FHWA will take into account in reaching a final decision regarding the dispute, or notify FHWA that it will comment pursuant to 36 CFR 800.7(c), and proceed to comment. Any Council comment provided in response to such a request shall be taken into account by FHWA in accordance with 36 CFR 800.7(c)(4) with reference to the subject of the dispute. Any Council recommendation or comment will be understood to pertain only to the subject of the dispute; FHWA's responsibility to carry out other actions under this PA that are not subjects of the dispute will remain unchanged.

C. FHWA shall notify the Signatories and Consulting Parties of its final decision.

XI. AMENDMENTS

Any Signatory to this PA may propose that it be further amended, whereupon the Signatory shall consult with the other Signatories within thirty (30) calendar days of the proposal to consider an amendment. Any such amendment shall be effective on the date a fully executed copy is filed with the Council.

XII. TERMINATION

A. If any Signatory to the PA determines that the PA's terms will not or cannot be carried out, that party shall immediately consult with the other Signatories to attempt to develop an amendment, per Stipulation XI. If an amendment cannot be reached, any Signatory may terminate the PA upon written notification to the other Signatories.

B. Once the PA is terminated, and prior to work continuing on the Project, FHWA must either: 1) execute a subsequent agreement pursuant to 36 CFR 800.6, or 2) request, take into account, and respond to the comments of the Council under 36 CFR 800.7.

C. FHWA shall notify the Signatories and Consulting Parties of its final decision.

XIII. MONITORING

Signatories may request to monitor activities carried out pursuant to this PA. If FHWA determines that monitoring will cause safety and scheduling concerns, FHWA will cooperate with the Signatories to carry out their monitoring and review requests.

XIV. PERSONNEL QUALIFICATIONS

All historic properties work performed pursuant to this PA will be carried out by or under the direct supervision of historians, architectural historians, historic landscape architects, and/or archeologists, as appropriate to the affected resource(s), who meet or exceed the *Secretary of the Interior's Historic Preservation Professional Qualification Standards* set forth in 62 Fed. Reg. 33,707 (June 20, 1997), as they may be amended.

XV. PRINCIPLES AND STANDARDS

FHWA and WisDOT agree that historic properties investigations performed pursuant to this PA shall be conducted in a manner consistent with the principles and standards contained in *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR Part 68), *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (1983, as amended), and *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (ACHP May 18, 1999, 64 FR 27085-27087), and Chapter 26 of WisDOT's Facilities Development Manual.

XVI. ELECTRONIC COPIES

A. Programmatic Agreement: FHWA or WisDOT shall provide each Signatory and Concurring Party with one legible, full-color, electronic copy of the fully-executed PA and its attachments no more than thirty (30) days after execution. If the electronic copy is too large to send via e-mail, FHWA or WisDOT shall provide each Signatory and Concurring Party with a copy of the executed PA via a compact disc. Parties may request hard copies of the executed PA.

B. Reports and Plans: Draft and final reports and plans stipulated in this agreement to be submitted for review and comment shall be submitted to the appropriate parties, in accordance with each stipulation, in electronic format. Signatories and Consulting Parties may request hard copies of the reports and plans.

XVII. DURATION

The terms of this PA shall commence on the date the last signature is affixed hereto and shall expire when all Stipulations are completed, or ten (10) years from the date of execution, whichever occurs first, unless the Signatories agree in writing to an extension, or the PA is otherwise terminated.

Execution of this PA by FHWA, SHPO, the Council, and WisDOT prior to FHWA approval of this Project, and implementation of its terms, evidences that FHWA has taken into account the effects of this Project on historic properties and has afforded the Council an opportunity to comment on the Project.

SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Federal Highway Administration

By: _____
Signature

Print Name: _____

Date: _____

SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Wisconsin State Historic Preservation Officer

By: _____
Signature

Print Name: _____

Date: _____

SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Advisory Council on Historic Preservation

By: _____
Signature

Print Name: _____

Date: _____

INVITED SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Invited Signatory:

Wisconsin Department of Transportation

By: _____
Signature

Print Name: _____

Date: _____

By: _____
Signature

Print Name: _____

Date: _____

INVITED SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Invited Signatory:

National Park Service

By: _____
Signature

Print Name: _____

Date: _____

INVITED SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Invited Signatory:

Department of Veterans Affairs Zablocki Medical Center

By: _____
Signature

Print Name: _____

Date: _____

INVITED SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Invited Signatory:

National Cemetery Administration

By: _____
Signature

Print Name: _____

Date: _____

CONCURRING PARTY SIGNATURE PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Concurring Party:

Forest County Potawatomi, Community of Wisconsin

By: _____
Signature

Print Name: _____

Date: _____

CONCURRING PARTY SIGNATURE PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Concurring Party:

Archdiocese of Milwaukee Catholic Cemeteries

By: _____
Signature

Print Name: _____

Date: _____

CONCURRING PARTY SIGNATURE PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Concurring Party:

Beth Hamedrosh-Hagodel Cemetery

By: _____
Signature

Print Name: _____

Date: _____

CONCURRING PARTY SIGNATURE PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Concurring Party:

City of Milwaukee Historic Preservation Commission

By: _____
Signature

Print Name: _____

Date: _____

CONCURRING PARTY SIGNATURE PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Concurring Party:

Milwaukee Preservation Alliance

By: _____
Signature

Print Name: _____

Date: _____

CONCURRING PARTY SIGNATURE PAGE

PROGRAMMATIC AGREEMENT
AMONG
FEDERAL HIGHWAY ADMINISTRATION,
WISCONSIN STATE HISTORIC PRESERVATION OFFICER,
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT ID #1060-27-00
WHS #13-0065

I-94 EAST-WEST CORRIDOR STUDY
(70th Street to 16th Street)
CITY OF MILWAUKEE
MILWAUKEE COUNTY

Concurring Party:

National Trust for Historic Preservation

By: _____
Signature

Print Name: _____

Date: _____

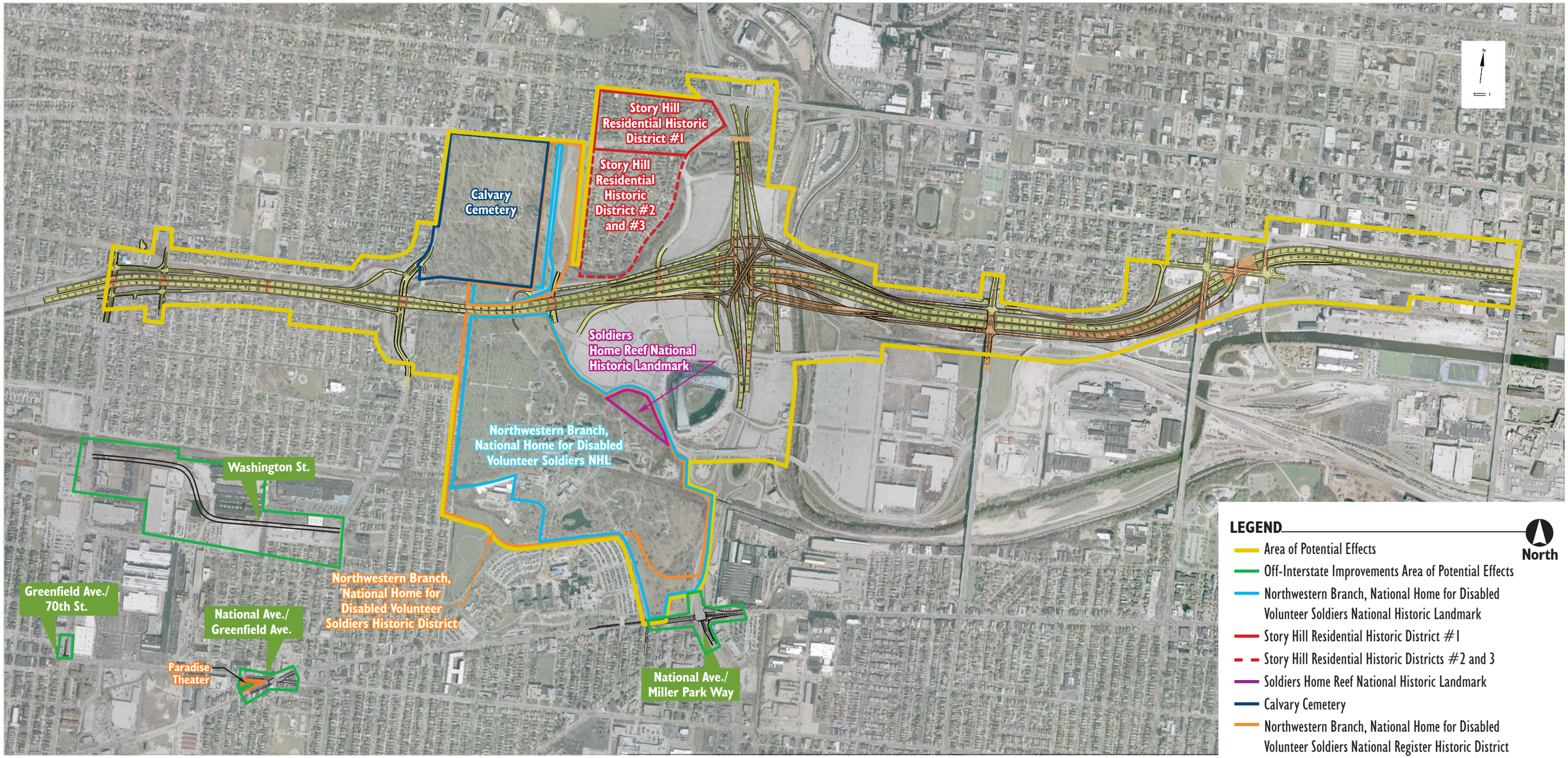
Attachment 1
Preferred Alternative

U.S. Department of Transportation
Federal Highway Administration

Off-Interstate Improvements for Preferred Alternative

TR031515104MKE 2-9_Off-interstate_Improvements_Pref_Altern_v3 06.22.15 sls

Attachment 2
Area of Potential Effects Map



U.S. Department of Transportation
Federal Highway Administration

Historic Properties Located in the Area of Potential Effect

TR0315151044MKE 3-35_Area_of_Potential_Effect_v12 12.18.15 sls

Economic Impact of the Proposed Hawley Road Interchange Closure

Prepared by
Wisconsin Department of Transportation
Bureau of Planning and Economic Development

February 4, 2015

Economic Impact of the Proposed Hawley Road Interchange Closure

This study aimed to answer the question: What is the economic impact to Milwaukee County of removing the Hawley Road Interchange on I-94?

The analysis produced the effects to two economic indicators: employment and output (Gross Regional Domestic Product, also known as GRDP). The 2013 economic sectoral data for Milwaukee County came from the IMPLAN economic impact analysis software. Additional geo-economic information was gathered from ReferenceUSA, and a survey was given to business owners in the study area, located in the Milwaukee vicinity between 70th Street to the west, 41/341 to the east, West State Street to the north, and West National Avenue to the south (see map attached). The survey let business owners give their opinions to predict consumer behavior, and to estimate the impact of the ramp closure on their revenue, customer base, and employment, and provide quantifiable data which was incorporated into the analysis. This survey does not account for construction and associated costs to modify the existing structures on I-94.

Data

The producer of IMPLAN, MIG Inc., provided the underlying data set for this analysis, which was derived from the Bureau of Economic Analysis, Bureau of Labor Statistics, and the US Census Bureau. This data set has six components: output, employment, value added, final institutional demand, inter-institutional transfers, and regional structural matrices. Value added amalgamates employee compensation, proprietary income, other property-type income, and indirect business taxes. Final demand includes household personal consumption expenditures; federal, state, and local government expenditures; federal, state, and local sales; inventory purchases; inventory sales; capital; and foreign exports.

An online survey was given to over 1,000 businesses in the study area, in which the businesses estimated how the potential ramp closure would affect their sales and patronage levels as well as additional travel time and distance to their business. Out of the 144 responses we received, only 108 were usable; the rest were blank. The survey showed that 64% of businesses believed the ramp closure would have no effect on their sales and revenue, and that 68% believed it would not affect their employment levels. The results were tabulated and implemented into the IMPLAN software for Milwaukee County, and two scenarios were created: the first an optimistic loss (the best case scenario), and the second a high-loss estimate.

The focus of the analysis was on change in revenue. The survey provided the basis for the first part of a two-pronged weighted average calculation for two separate impact estimates: 1. a low-impact estimate, and 2. a high-impact estimate.

For the low-impact estimate, the businesses' self-reported weighted-average loss of revenue was 2.98%, while the high estimate was 12.38%. The second part of the weighted average calculations came from the ReferenceUSA database, which provided estimates for business sales volumes. These figures were incorporated into the survey's revenue estimates, and the resulting revenue changes were fed into IMPLAN for the economic impact analysis.

Methodology

This study implements IMPLAN, an economic impact modeling software that performs Input-Output (IO) and Social Accounting Matrix analysis. In IMPLAN, the regional economy is divided into 440 sectors that are linked together through an input-output matrix, which takes into account an industry's economic footprint on every industry.

At the most basic level, the IO model is a network of linear equations that describe the distribution of an industry's products within an economy. Models are made using a transaction table, which include inter-industry transactions, value added, and final demand. The inter-industry transaction table tracks the movement of products and services from each sector to producers and to consumers. The rows of the transaction table represent the distribution of a producer's output across other sectors and to final demand. The columns of the transaction table represent the input an industry requires from other sectors to produce its own output and flows to value added.

The economic impact of a positive or negative change can be estimated in terms of total output (a vector, X) as a function of the IO coefficient matrix and the demand constant in the following equation:

$$X = [I - A]^{-1} \times d$$

Where the multiplier matrix, $[I - A]^{-1}$ is the proportion by which X changes as a result of changes in final demand, d.

This equation is derived by computing the marginal amount of input each industry needs to produce $1 of output. Each element of the inter-industry transaction table is divided by the total output of its corresponding industry. The quotient, a_{ij} is the input-output (IO) coefficient:

$$a_{ij} = z_{ij} / X_j$$

Where z_{ij} is the amount of output from industry "i" sold to industry "j" and X_j is the total output of industry "j."

The input-output coefficient is expressed in matrix form:

$$A = \begin{pmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & \ddots & \vdots \\ a_{n1} & \cdots & a_{nn} \end{pmatrix}$$

Total output can be alternatively written as:

$$X = AX + d$$

$$X - AX = d$$

$$[I - A] \times X = d$$

This leads to the original equation:

$$X = [I - A]^{-1} \times d$$

An exogenous shock (a change to the economy that comes from a source outside of the aggregate demand model) is calculated by multiplying the demand change by the multiplier matrix; the product *X* is the change in output.

The estimated direct loss to the economy is between $47,521 and $546,958.31. We performed the analysis for the sectors represented by the survey results (these included professional services, restaurants, education, health services, and wholesale and retail trade). In order to minimize the bias within the sectors, we applied a weighted average technique on the sector analysis. For example, employment within the food service industry is highly sensitive to changes in revenue, whereas employment in wholesale is less susceptible to change in revenue, by a factor of 2.42. By averaging the employment coefficient, we smoothed out the outliers of more volatile sectors while still taking them into account.

The bottom line calculations for changes in employment and revenue for Milwaukee County as a result of the ramp closure is the result of these cumulative calculations that take into account the best and worst case scenarios. The best minimizes the loss, and the worst maximizes it.

Results

The most commonly represented industries from the survey respondents were professional services at 40%, followed by health care and social assistance at 27%, 14% in retail and wholesale, 9% in educational services, 4% in government, 3% in recreation, and 2% in others which included food services. Given the small sample size of the completed surveys, the survey results did not necessarily accurately portray the business demographic in the study area. In order to create a more balanced sectoral profile, data on types of businesses in the geographical boundaries of the study was pulled from ReferenceUSA, and compared with data from IMPLAN.

Table 1: Survey results: changes in revenue, Revenue Loss Weight (RLW) Calculations

Changes in Revenue		**Low RLW**	**High RLW**
Increase by 26-50%	1.0%	0.004854	0.004854
Increase by 0-25%	1.0%	0.002427	0.002427
No change	64.1%	0	0
Decrease by 0-25%	23.3%	-0.019421	-0.038831
Decrease by 26-50%	6.8%	-0.017670	-0.038981
Decrease by over 50%	3.9%	-0.0023	-0.058252
Sum		-0.029833	-0.123783

Table 1 is the distribution of business owners' perception of how the ramp closure might impact their revenue, as well as the calculated low and high Revenue Loss Weights (RLW) of their revenue confidence. The weight calculations are derived from the confidence perception, which takes into account net revenue at the lowest and highest ends of each revenue interval.

Table 2: Survey results: changes in employment and patron volume

Changes in Employment		**Change in Patron Volume**	
Increase by 10-20%	1.0%	Increase by 26-50%	1.0%
Increase by less than 10%	1.0%	Increase by 0-25%	1.0%
No change	68.0%	No change	51.0%
Decrease by less than 10%	13.6%	Decrease by 0-25%	25.5%
Decrease by 10-20%	8.7%	Decrease by 26-50%	13.7%
Decrease by over 20%	7.8%	Decrease by over 50%	7.8%

Table 2 shows the business owners' perception on changes in employment as well as patron volume as a result of the interchange closure. These numbers were not directly incorporated into the IMPLAN analysis, which uses the revenue loss figures calculated from Table 1 to measure the impact on employment, labor income, value added, and output.

Table 3: Business demographics in the study area by sales volume and Sales Volume Weight (SVW) calculations

Low value	**High value**	**Weight**	**Low SVW**	**High SVW**
$0.01	$500,000	0.5024	$ 0	$251,200
$500,000	$1,000,000	0.206	$103,000	$206,000
$1,000,000	$2,500,000	0.1548	$154,800	$387,000
$2,500,000	$5,000,000	0.056	$140,000	$280,000
$5,000,000	$10,000,000	0.0321	$160,500	$321,000
$10,000,000	$20,000,000	0.0238	$238,000	$476,000
$20,000,000	$50,000,000	0.019	$380,000	$950,000
$50,000,000	$100,000,000	0.00357	$178,500	$357,000
$100,000,000	$500,000,000	0.002381	$238,100	$1,190,500
Average			**$1,592,900**	**$4,418,700**

The figures from Table 3 were derived from ReferenceUSA, which divides businesses into categories based on sales volume. The categories are under $500,000, $500,000 to $1 million, $1 million to $2.5 million, $2.5 million to $5 million, $5 million to $10 million, $10 million to $20 million, $20 million to $50 million, $50 million to $100 million, and $100 million to $500 million. The Sales Volume Weight (SVW) is calculated based on the percentage of businesses in each category. The low SVW was derived from the lowest point in each interval, and the high SVW is from the highest point in each interval. The averages of each SVW was calculated, and applied in the next step of the analysis.

Table 4: Survey revenue loss weight combined with average low and high weights

		Low Weight Direct Impact	High Weight Direct Impact
Low RLW	-0.029833	**-$47,521.00**	
High RLW	-0.123783		**-546,958.31**

Table 4 incorporates the low and high weights calculated from Tables 1 and 3. The Low Weight Direct Impact is the product of the low RLW from Table 1 and the average low SVW from Table 3, and the High Weight Direct Impact is the product of the High RLW from Table 1 and the Average High Weight from Table 3. These direct impacts were then fed into the IMPLAN software, and are thus referred to as the Direct Effect Output.

Table 5: IMPLAN analysis: low impact

	Employment	Labor Income	Total Value	Output (GRP)
Direct Effect	-0.4	-$19,600.27	-$28,587.49	-$47,521.00
Indirect Effect	-0.1	-$5,631.63	-$10,477.38	-$10,477.38
Induced Effect	-0.1	-$54,016.08	-$9,203.77	-$14,569.42
Total Effect	**-0.6**	-$33,500.16	-$44,465.79	**-$72,567.80**

Table 5 shows the result of the IMPLAN analysis using the low Direct Effect Output of -$47,521. This figure represents the direct loss (a negative exogenous shock, or leakage, to the regional economy). The indirect effects concern inter-industry transactions, as in suppliers. Induced effects measure the effects of the changes in household income (local spending on goods and services by people working to satisfy the direct and indirect effects). The total impact is the sum of direct, indirect, and induced effects. Additionally, the output is the sum of labor incomes and total values; however, these numbers do not reflect the perfect sum, due to formatting.

In this first, low-impact scenario, less than one job could be lost, with a total output loss of $72,567.80.

Table 6: IMPLAN analysis: high impact

	Employment	Labor Income	Total Value	Output (GRP)
Direct Effect	-4.6	-$270,714.83	-$274,197.50	-$546,958.31
Indirect Effect	-0.9	-$41,705.87	-$76,822.60	-$120,592.77
Induced Effect	-1.4	-$54,016.08	-$88,278.46	-$167,692.04
Total Effect	**-6.9**	-$366,436.78	-$439,298.56	**-$835,243.12**

Table 6 is the result of the IMPLAN analysis using the high Direct Effect Output of -$546,958.31. The variables and inter-industrial linkages are the same from Table 5; however, because of the multiplier effect, this scenario produces greater repercussions for the economy of Milwaukee County. In this case, approximately seven jobs could be lost, with a total output loss of $835,243.12.

Table 7: Net Impact on Milwaukee County

	Employment	Output (GRP)
Ramp Closure Impact	-7	-$835,243.12
Milwaukee County	577,213	$52,523,507,617
Percentage	-0.00121%	-0.00159%

As a result of closing the Hawley Road Interchange, up to seven jobs could be lost, which accounts for approximately 0.00121% of Milwaukee County's currently employed population. In terms of Gross Regional Domestic Product, up to $835,243.12 could be lost, which equates to approximately 0.00159% of Milwaukee County's total output.

Conclusion

The analysis produced two scenarios which offer a realistic range of impacts to employment and output. The first scenario is a low-impact estimate that shows that Milwaukee County may lose only 0.6 (1) jobs with a net GRDP impact of -$72,567.80. The second scenario is more conservative, and has a higher negative impact on the economy, with a loss of 6.9 (7) jobs, and a net GRDP impact of -$835,243.12. In terms of percentages, the seven jobs lost represent approximately 0.00121% of total employment in Milwaukee County, and the -$835,243.12 output loss equates to 0.00159% of Milwaukee County's economy.

The survey demonstrated an interesting phenomenon. Business owners who believe that customers would have to travel an additional, relatively short distance (less than one mile) are more pessimistic about the impact the ramp closure would have on their revenue and employment. However, business owners who think that customers would have to travel an additional, relatively longer distance (over 1.1 miles) are more neutral, as well as optimistic, about the impact the ramp closure would have on their revenue and employment.

Of the 25% of businesses that are relatively unaffected by distance (less than an additional 0.5 mile of travel), only 50% believe their revenue would not change, and 60% think that employment would not change as a result of the ramp closure. In the group most affected by the ramp closure (requiring over 2.5 miles of additional travel), 75% do not predict any changes in revenue or employment.

I-94/Hawley Rd Interchange Survey Area (Milwaukee County, WI)

Assessment of Additional Measures to Maximize the 8-Lane At-Grade Alternative's Ability to Meet Purpose and Need

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DATE: July 30, 2014

Purpose of the Analysis

The purpose of this analysis is to identify and discuss various modifications to the 8-lane at-grade (8LAG) alternative WisDOT previously developed, in an effort to vet the alternative's configuration. The alternative was developed during the initial alternatives development phase in late 2012, and has been modified and refined throughout the course of 2013.

Additional study of the 8LAG alternative continues because of the stark differences in construction cost, some impacts, and other purpose and need factors between it and a double-deck freeway (DD) configuration.

Design-year traffic operations on I-94 under the 8LAG alternative would meet level of service D in most locations, but would drop to level of service E along a short segment adjacent to the cemeteries. The 8LAG alternative would significantly improve safety on this segment of I-94 compared to the No-Build Alternative, thereby enhancing I-94's ability to serve as a key transportation route by reducing both congestion and crashes. Further, the 8LAG alternative would replace the existing deteriorating pavement. Overall, the 8LAG alternative would meet some aspects of the project's purpose and need objectives, though in most aspects at a level below what the DD alternative can provide. However, the 8LAG alternative has fewer environmental impacts, and is significantly less costly than is the DD alternative.

8-Lane At-Grade Alternative Development To Date

Several alternatives were evaluated for the I-94 East-West Corridor study. The alternatives were based on the regional transportation planning process carried out by the Southeastern Wisconsin Regional Planning Commission (SEWRPC) and recommendations made in SEWRPC's adopted *Regional Transportation System Plan for Southeastern Wisconsin: 2035* (SEWRPC 2006; updated and reaffirmed in June 2010). The regional transportation plan is designed to serve the land use plan and the forecast future travel demand derived from the population and employment growth and development pattern envisioned in the land use plan. The system planning and recommendation process began by considering and developing links and strategies, including non-capacity-expansion elements such as public transit, and bicycle and pedestrian facilities. Transportation systems management (TSM) and travel demand management (TDM) elements also were investigated and included in plan recommendations. Only following the implementation of these elements was capacity expansion on the arterial street and highway/freeway system considered to address traffic volume and congestion.

As noted, the 8LAG alternative initially was developed along with several other build and non-build alternatives in the second half of 2012. The initial alternatives development coincided with review of the purpose and need statement by participating and cooperating agencies and with public outreach on purpose and need. The purpose of the project, which drew no substantive comments from participating and cooperating agencies, is documented in detail in Section 1 of the preliminary Draft EIS, and summarized as follows:

- Maintain a key link in the local, state, and national transportation network.

- Address the obsolete design of I-94 to improve safety, which includes potentially replacing left-hand entrances and exits, improving sight distances, widening narrow shoulders, eliminating other roadside hazards, and providing proper weaving distances between exit and entrance ramps.
- Replace deteriorating pavement.
- Accommodate future traffic volumes at an acceptable LOS.

The need for the project is demonstrated by several factors, most notably:

- High existing crash rates
- Substandard existing freeway geometric deficiencies (typical section, horizontal and vertical alignment, ramp spacing and location, and others)
- Poor operations and increasing delay under both existing and projected future traffic volumes

Because of the Soldiers Home NHL and two private cemeteries adjacent to it, I-94 through the cemeteries consists of six 12-foot lanes, 1.5-foot inside shoulders in both directions, a 4-foot eastbound outside shoulder, and a 10-foot westbound outside shoulder. There is a barrier/wall outside the eastbound lane and a fence along the outside westbound lane. See Exhibits 1 and 2 for the existing typical section and for plan view dimensions and location. WisDOT and FHWA committed early on in the study that graves will not be disinterred from any of the cemeteries as a result of this project.

The AASHTO and WisDOT standard lane width is 12 feet and the standard shoulder width is 12 feet.

At its narrowest point, roughly 110 feet is available for the construction, clearance and footprint of I-94 between the cemeteries. Using this width of 110 feet, the study team developed 10 options for allocating space for lanes, shoulders, and barriers (Table 1). After reviewing them, the study team identified reasons for each being eliminated or retained. A 6-foot width for roadway curvature,[1] constructability, and the westbound outside barrier is included in all the options listed below. This leaves 104 feet for an at grade typical cross section. One of the ten options is the 8-lane at grade typical section with 8 11-foot lanes and 2-foot inside and outside shoulders (Option 3), which has been shown at public meetings and agency meetings through much of 2013 as the best option to maximize safety and traffic operations in the width available. It remains the one 8LAG alternative still under consideration.

The traffic operations were assessed on a 6-lane modernization alternative and an 8-lane modernization alternative to determine if they would operate at an acceptable LOS (D or better) in the design year peak hour assuming that all the regional plan's recommended transit projects were included. The results of the 6-lane alternative analysis indicated that several segments of I-94 would operate at LOS E and F, not working at an acceptable level of service.

[1] The freeway is curved through the cemetery segment. This takes up some of the available width because the roadway curve does not fit concentrically into the available space.

TABLE 1
Cemetery Area Cross Section Dimensions

Options		Reason Dropped
Option 1		
Eight 12-foot lanes	96 feet	
Median (two 3-foot shoulders and 2-foot single barrier)	8 feet	shoulders 25% of standard
Eastbound outside shoulder	1 foot	8% of standard.
Remaining width for westbound outside shoulder	-1.13 feet	does not fit footprint
Option 2		
Eight 12-foot lanes	96 feet	
Median (two 1-foot shoulders and 1-2-foot single barrier)	4 feet	shoulder 8% of standard
Eastbound outside shoulder	2 feet	shoulder 16% of standard
Remaining width for westbound outside shoulder	1.87 feet	shoulder 15% of standard
Option 3 (remains)		
Eight 11-foot lanes	88 feet	
Median (two 2-foot shoulders and two 2-foot barriers 2 feet apart)	10 feet	shoulder 16% of standard
Eastbound outside shoulder	2 feet	shoulder 16% of standard
Remaining width for westbound outside shoulder	3.87 feet	shoulders 32% of standard
Option 4		
Eight 11.5-foot lanes	92 feet	
Median (two 4-foot shoulders and 2-foot single barrier)	10 feet	shoulder 33% of standard
Eastbound outside shoulder	1 foot	shoulder 8% of standard
Remaining width for westbound outside shoulder	0.87 foot	shoulder 7% of standard
Option 5		
Eight 11.5-foot lanes	92 feet	
Median (two 3-foot shoulders and 2-foot single barrier)	8 feet	shoulder 25% of standard
Eastbound outside shoulder	2 feet	shoulders 16% of standard
Remaining width for westbound outside shoulder	1.87 feet	shoulder 15% of standard
Option 6		
Six 12-foot lanes	72 feet	6 lanes does not work operationally
Median (two 3-foot shoulders and 2-foot single barrier)	8 feet	shoulders 25% of standard
Eastbound outside shoulder	12 feet	
Remaining width for westbound outside shoulder	11.87 feet	

Option 7		
Six 12-foot lanes	72 feet	6 lanes does not work operationally
Median (two 8-foot shoulders and 2-foot single barrier)	18 feet	shoulders 67% of standard
Eastbound outside shoulder	8 feet	shoulders 67% of standard
Remaining width for westbound outside shoulder	5.87 feet	shoulder <50% of standard
Option 8		
Six 12-foot lanes	72 feet	6 lanes does not work operationally
Median (two 4-foot shoulders and two 2-foot barriers 2-foot apart)	14 feet	shoulders 33% of standard
Eastbound outside shoulder	10 feet	shoulders 83% of standard
Remaining width for westbound outside shoulder	7.87 feet	shoulder 65% of standard
Option 9		
Six 12-foot lanes	72 feet	6 lanes does not work operationally
Median (two 4-foot shoulders and 2-foot single barrier)	10 feet	shoulders 33% of standard
Eastbound outside shoulder	12 feet	
Remaining width for westbound outside shoulder	9.87 feet	shoulder 82% of standard
Option 10		
Six 12-foot lanes	72 feet	6 lanes does not work operationally
Median (two 6-foot shoulders and 2-foot single barrier)	14 feet	shoulders 50% of standard
Eastbound outside shoulder	10 feet	shoulders 83% of standard
Remaining width for westbound outside shoulder	7.87 feet	shoulders 65% of standard
Option 11		
6 permanent lanes	66 feet	
Median (two 12-foot shoulder/peak hour lane with 2-foot single barrier)	26 feet	Shoulder 16% of standard during peak hour
Eastbound outside shoulder	6 feet (4+2)	Shoulder 50% of standard
Westbound outside shoulder	6 feet (4+2)	Shoulder 50% of standard

Comparison of 8-Lane At-Grade to Purpose and Need

Safety

The desirable design criteria values presented in WisDOT's *Facilities Development Manual* fall in the middle to upper range of the AASHTO design criteria values. AASHTO guidance strongly recommends that middle to upper range values be used in most cases, and that the minimum design criteria values be used only under special circumstances. The following are some of the benefits of wider lanes, shoulders and clear zones:[2]

- Increased safety and comfort for the driver
- Decreased collision rates with increased lane, shoulder and clear zone widths as shown in studies
- Increased capacity of the highway
- Increased mobility on higher speed highways (freeways, expressways, higher order arterials) by increasing driver comfort when traveling at higher speeds

[2] Source: WisDOT, *Facilities Development Manual,* Procedure 11-15-1

- Increased room for driver to recover control of their vehicle and return to the roadway or at least achieve significant decelerations before striking a fixed object
- Increased room for the lateral placement of vehicles as speed, volume and percentage of heavy, wider vehicles increases
- Increased room to accommodate vehicle "off-tracking" along horizontal curves
- Increased room for bicycle and pedestrian accommodations
- Improvements for drainage, disabled vehicles, collision avoidance maneuvers, and structural support of the traveled way
- Shoulders provide space for enforcement activities (a minimum of 8 feet is required)
- Shoulders provide space for maintenance activities (including snow removal)

Safe and efficient traffic operations can be adversely affected by not providing adequate shoulder width. According to AASHTO and FHWA, 12 feet is preferred for both the lane width and shoulder width for the reasons noted above.[3]

According to the *Safety Prediction Methodology and Analysis Tool For Freeways and Interchanges* (prepared for National Cooperative Highway Research Program [NCHRP], Project No. 17-45) going from a 12-foot lane to a 10.5-foot lane would result in a 7.5 percent increase in the number of fatal + injury crashes. In addition, going from a 6-foot inside shoulder to a 2-foot inside shoulder would result in an 8 percent increase in the number of fatal + injury crashes. The ISATe analysis completed for the 8LAG Alternative supports this research. The crash frequency of Option 3 from Table 1 (11-foot lanes, 2-foot shoulders) was compared to the crash frequency of a full width typical section (12-foot lanes, 12-foot shoulders). Results indicate that Option 3 would have a 60 percent higher crash frequency due to the narrow lanes combined with the narrow shoulder. Nonetheless the project team believes that the 11-foot lanes and 2-foot shoulders is the best combination of lane and shoulder width in the cemetery segment. This is because narrowing the shoulder less than 2 feet to provide 12-foot lanes would increase the likelihood of striking the barrier wall with even a modest deviation from the lane. Conversely, narrowing lane width to less than 11 feet to increase shoulder width would be less safe than providing for 12-foot lanes.

Chapter 12 of AASHTO's *Highway Safety Manual* states that reducing clear distance from 5 feet to 2 can be expected to increase contact with that fixed object (i.e. the concrete barrier) by 100 percent (Table 12-20).

Reducing the outside shoulder width to a narrower width would eliminate safe storage for disabled vehicles and law enforcement/emergency services. AASHTO's *Highway Safety Manual* research on outside shoulder width on rural roads Chapter 12, Table 11-17 indicates that narrowing the right shoulder would have the following consequences:

- Narrowing from 8 feet to 4 would increase crashes by 9 percent.
- Narrowing from 8 feet to 2 would increase crashes by 13 percent.
- Eliminating the right shoulder would increase crashes by 18 percent.

WisDOT's ISATe analysis of the 8LAG alternative predicted that I-94 would expect to experience 30 percent more total crashes than would occur if a double deck alternative were constructed.

Capacity

The 8LAG would operate at LOS E in the design year peak hour. FHWA guidance calls for freeways to provide LOS C; however, in the *I-94 East-West Stadium Interchange Study* technical memorandum (August 31, 2012) from the consultant team to WisDOT, the team recommended (and FHWA agreed to) LOS D as a goal for the traffic operations on the project. In urban areas like Milwaukee County, the impacts resulting from achieving

[3] *AASHTO's A Policy on Geometric Design of Highways and Streets (GDHS), Chapter 4 Cross Section Elements.*

LOS C would be extensive and costly. In a further reflection of the tight urban corridor with significant occurrences of major event traffic (e.g., baseball games) in which the project is located, WisDOT and FWHA agreed to analyze LOS calculations on the 200th highest hour of traffic in a year, rather than the typical design standard 30th highest hour of traffic in a year. LOS E is described in the AASHTO's GDHS as "unstable flow, operating at capacity. Flow becomes irregular and speed varies rapidly because there are virtually no usable gaps to maneuver in the traffic stream and speeds rarely reach the posted limit. Vehicle spacing is about 6 car lengths, but speeds are still at or above 50 mph. Any disruption to traffic flow, such as merging ramp traffic or lane changes, will create a shock wave affecting traffic upstream. Any incident will create serious delays. Drivers' level of comfort becomes poor."

Traffic Operations

WisDOT assessed the traffic operations of the No-Build Alternative, a 6-lane modernization alternative, an 8-lane at-grade alternative, and an 8-lane double deck alternative. No 6-lane double deck alternative was evaluated because 6 lanes could be accommodated at grade through the cemetery segment with 12-foot lanes in each direction and one 10-foot shoulder in the westbound direction, as is in-place today.

The 6-lane at-grade alternative will operate at a LOS E and F at several locations.

The 8LAG will operate at a LOS E in the design year through the cemetery section only if all SEWRPC-identified TDM and TSM measures are implemented, if a doubling of transit service is realized, and only if the Hawley Road interchange is closed. In other words, traffic performance will be far worse for the 8LAG alternative is any or multiple of these other conditions are not met by the design year. As discussed elsewhere, there is inadequate space available to accommodate ramp tapers and gore areas for an eastbound on-ramp and/or a westbound off-ramp in this constrained location. See "Additional Elements Considered Beyond Those in the Regional Plan" section elsewhere in this memorandum for a discussion of partial interchange access at Hawley Road for the 8LAG alternative.

If the assumptions above are realized, it may be possible to obtain more a consistent level of service (i.e. LOS D where the average vehicle density is 25% less than the LOS E threshold) through the cemetery section if 4,400 vehicles per day, including 350 cars in the PM peak hour, were diverted off of the freeway and onto the adjacent roadway network. To obtain a mid-range LOS D with the 8LAG, 10,100 vehicles per day must be diverted for the combined eastbound and westbound directions, or about 800 vehicles in the peak hour (Table 2).

It should be noted that even though an acceptable level of service can possibly be achieved on the freeway mainline by diverting no less than 4,400 vehicles per day, the freeway corridor as a whole will be substantially less reliable in terms of overall operations and predictable travel times due to the increased effect that random influences (weather, incidents, etc.) will have on the 8LAG.

Most, if not all, of the diverted traffic would likely reroute to I-894, Greenfield Avenue, Blue Mound Road, Wisconsin Avenue, National Avenue and other parallel east-west arterials. This would increase congestion and have significant impacts to adjacent residents and businesses along these routes.

Under the 8LAG, it is possible that enough additional capacity could be provided on these arterials by eliminating on street parking, and/or implementing signal timing improvements, including FTMS and "smart-signal" technologies.

Table 2
Daily Vehicle Volume Diversion

		I-94 Eastbound			I-94 Westbound			Total	
		PM Peak Volume (veh/hr)		Estimated Daily	PM Peak Volume (veh/hr)		Estimated Daily		
Scenario	LOS	Total	Estimated Diversion	Diversion (veh)	Total	Estimated Diversion	Diversion (veh)	PM Peak (veh/hr)	Daily (veh)
8 LAG	"high" D	7,450	350	4,400	7,250	0	0	350	4,400
8 LAG	"mid" D	7,100	700	8,800	7,150	100	1,300	800	10,100
6 LN Mod	"low" D	5,000	2,800	35,000	5,050	2,200	27,500	5,000	62,500

If a 6-lane modernization concept is pursued, however, diverting 62,500 vehicles per day would likely require through capacity expansion on the arterial roads, resulting in significant right-of-way acquisition and the resultant strip-taking and residential and/or business relocation impacts associated with such acquisition.

Most of the focus for the 8LAG design has been on operations through the cemetery segment itself, especially eastbound during the 2040 PM peak hour, but it should be noted that operations in this area are directly related to, and driven by, the previous design of the downstream eastbound system exit ramp to USH 41/341. The exit ramp under the 8LAG alternative was designed as a tapered, single-lane exit, which would be over capacity during the design year PM peak hour and have upstream mainline impacts through the eastbound cemetery segment. As a result, the forecasted mainline LOS E in the eastbound PM peak hour was compounded by the exiting traffic at the USH 41/341 eastbound exit ramp. Based on traffic analysis of the exit ramp, the tapered design would require approximately 8,300 vehicles per day to divert from the exit ramp in order to operate at an acceptable level of service (Table 3).

TABLE 3
Daily Vehicle Volume Diversion on System Ramp

		PM Peak Volume (veh/hr)		Estimated Daily
Scenario	LOS	Total	Estimated Diversion	Diversion (veh)
8 LAG	D	1,050	1,000	8,300

However, as the 8LAG design has continued to be refined, the geometry of this system ramp, of the system on-ramp westbound, and its relation to the 68th-70th off-ramp, and other access elements have been modified in a manner to best “balance” the dimensions of various weaving lengths and right-of-way needs. As such, the eastbound system exit ramp to USH 41/341 has been redesigned in the 8LAG alternative as a 2-lane parallel exit, which provides additional capacity to accommodate the system ramp demand while avoiding impacts to the NHL’s northeastern corner.

It should be noted that the design change to the eastbound system ramp exit does not fix the mainline capacity constraint and resulting LOS E on I-94 that is inherent to the 8LAG alternative, but does help to eliminate the upstream operational impacts of the USH 41/341 exit ramp. In addition, it is an example of the project team’s continued efforts to “optimize” the 8LAG design to the greatest extent possible.

Elements assumed to be implemented with All Build Alternatives, Including the 8LAG Option

This section documents what elements and assumptions are included in SEWRPC’s Regional Transportation Plan. It is important to reemphasize that SEWRPC considers capacity expansion as a last resort, only if there is congestion that cannot be addressed by transit, TSM, TDM, and other noncapacity expansion strategies and elements. While most of the TSM measures have already been implemented, the transit and TDM measures have not, and will be difficult to implement by the design year based on current trends of transit service and funding availability and allocations.

The following elements are included in the Regional Transportation System Plan, in conjunction with 8 lanes on I-94 between 70th and 16th streets.

Public Transit Element

- Development of true rapid bus transit (doubling from levels in place in 2005)
- Development of express transit systems
- Expansion of transit service (increasing weekday vehicle-miles of service by 59 percent)

Actual transit service has dropped 20 percent since the 2006 plan was adopted, further widening the gap between current transit usage and the levels envisioned in the plan to address demand. This suggests that the doubling of 2005 transit levels may not occur, which would result in more traffic on I-94 than forecast.

Based on current transit usage in the I-94 corridor between the Zoo and Marquette interchanges, peak hour transit use would have to triple in order to divert enough vehicles off I-94 for the 8LAG to reach LOS D in the design year peak hour. Note that this is not merely tripling transit *service* but tripling transit *use*. It would be difficult to triple transit use among I-94 commuters when there is no travel time savings compared to using a car; there is no incentive for people to switch to transit. In the absence of some of the more dramatic TDM recommendations below like increased parking rates and/or reserved bus lanes on arterials that either increase costs for single-occupancy commuters or dramatically decrease travel times for transit users, a threefold increase in transit usage will remain elusive. Furthermore, transit service on I-94 is designed for downtown workers that commute from western Milwaukee or Waukesha counties. WisDOT's 2012 aerial origin-destination survey (SkyComp) determined that only 40 percent of vehicles on I-94 travelled all the way through the corridor (entered I-94 west of 84th Street and exited east of 25th Street, and vice versa). Even if one assumes that all of these vehicles represent downtown workers rather than other through traffic, the increased transit usage would need to come entirely from the subset of I-94 users that are downtown commuters.

For additional discussion of the transit element see Section 2.4.2 of the DEIS.

Bicycle and Pedestrian

- Paved and widened shoulders, widened outside travel lanes, bicycle lanes, or separate bicycle paths should be considered as each segment of the parallel urban arterial street system is resurfaced, reconstructed, or constructed
- Expanding off-street bicycle paths from 238 miles to a 575-mile system

In constrained urban environments like the City of Milwaukee, it is difficult to widen outside travel lanes or provide bicycle lanes. Furthermore, the number of bicycle and pedestrian trips is a very small percentage of trips in the region. The robust expansion of bike and pedestrian opportunities will not divert a noticeable amount of trips from I-94.

Transportation Systems Management

The majority of Transportation Systems Management measures have been implemented.

Freeway Traffic Management.

- Operational Control
  - Maintaining existing freeway system traffic detectors and installing additional detectors at 0.5-mile intervals
  - Installing ramp meters and expanding the ramp meter control strategy of varying vehicle release rates
- Advisory Information
  - Maintaining existing variable message signs and providing additional variable message signs on the freeway and surface arterials leading to the most heavily used on-ramps
  - Maintaining the regional traveler information system (511)

- Proposed Incident Management
  - Maintaining and expanding the network of closed circuit TV cameras which allow for the rapid detection of and appropriate response to an incident
  - Expanding the provision of enhanced reference markers to be placed at 0.1-mile intervals
  - Expanding freeway service patrols to aid in the rapid removal of disabled vehicles and assist in incident clearance

Surface Arterial Street and Highway Traffic Management.

- Improving and expanding coordinated traffic signal systems
- Implementing intersection improvements (adding right-and/or left-turn lanes or upgrading the type of traffic control at the intersection)
- Implementing curb-lane parking restrictions during peak traffic periods as needed
- Applying access management standards for the location, spacing and operation of driveways, median openings and street connections
- Expanding the advisory information network to include surface arterial street and highway travel

Parking Management and Guidance.

- Operational improvement projects for implementation based upon the transportation systems management recommendations

Travel Demand Management

Travel Demand Management (TDM) measures could have some impact on freeway volumes, individually or together they could possibly help raise LOS on this segment of I-94 to LOS D. But to be effective they must be implemented on a regional basis. TDM measures such as HOV lanes must be executed system wide, otherwise congestion will still be an issue adjacent to the project, and the efficiency to move transit vehicles, vanpools and carpools will not be realized.

TDM measures included in the regional transportation plan are:

- Preferential treatment for high-occupancy vehicles (reserved bus lanes along arterial streets and highways, transit priority signal systems, voluntary employer-provided preferential parking for those who carpool)
- Park-and-ride lots
- Transit pricing programs (annual transit pass program enhanced and expanded to employers)
- Personal vehicle pricing (employers begin charging for parking and increase user fees-motor fuel tax and vehicle registration fees)
- Aggressive promotion of transit use, bicycle use, ridesharing, pedestrian travel, telecommuting, and work-time rescheduling
- Transit information and marketing (websites with travel time information etc.)
- Detailed site-specific neighborhood and major activity center land use plans

Some of these measures have been implemented to varying degrees.

Arterial and Highway Expansion

- I-94, I-894, and I-94/43 (between the Mitchell and Marquette interchanges) expanded from 6 to 8 lanes
- Additional capacity on select arterials (217 route miles in the 7-county region)

Additional Operational Elements Considered Beyond Those in the Regional Plan

The following additional elements have been considered with the 8LAG but are not included in the Regional Plan.

Truck Restrictions During Peak Hours

The AM truck percentage for the I-94 corridor is roughly 6.4 percent and the PM truck percentage roughly 4.0 percent. Restricting truck traffic from this segment might improve LOS to D, by diverting roughly 320 trucks during the peak hour. This would cause issues on other parts of the freeway system and local arterials. It would have an adverse effect on businesses in the City of Milwaukee that would not be experienced by businesses outside the City.

Buses on Shoulders

This would require going to 3 lanes throughout the corridor because under the 8LAG there is no shoulder for buses to use. See Section 2 of the DEIS. There is not a continuous 12-foot shoulder on I-94 under any of the alternatives. Nor is there a 12-foot inside shoulder in the eastbound approach to the Marquette Interchange. This would need to be implemented corridor-wide in order to have it operate successfully. Providing the 12' shoulders throughout the I-94 corridor would be very costly and have significant human and natural environmental impacts.

Automatic On-Ramp Closures during peak hours

Closing the 68th Street eastbound on-ramp, the embedded interchange on-ramps, and/or the US 41 W-N/ W-S System ramp 6 to 8 hours each day may decrease traffic volumes on the west leg of the project and likely improve LOS on I-94. However, freeway volumes within the limits of the study area would likely remain the same, as the access closures would divert additional traffic (beyond what is potentially diverted due to the narrow cross-section; see previous section 8-Lane At-Grade Alternative Development to Date) to adjacent on-ramps via local arterials such as Greenfield Avenue, National Avenue, Bluemound Road, and Wisconsin Avenue. The regional travel demand model volumes on these arterials suggest that the model assumes future capacity expansion on portions of Greenfield and National Avenues through parking restrictions or other methods, but not the peak period closures in access to the freeway. In addition, closing some freeway ramps during peak hours would not meet driver expectations. The W-S ramp is also a main artery to Miller Park. Considering that most games begin at 7PM, closing off the ramp during peak hours means closing it when fans are arriving for a game. The closure of on-ramps is also contrary to the strong public and local government feedback to not eliminate any access to the freeway.

According to FHWA's *Ramp Management and Control Handbook* (January 2006), *Chapter 5.2.2,* 'Ramp closures change traffic patterns that have been established over a substantial period of time and therefore should be rarely considered for situations where another ramp management strategy may be successfully deployed.' Closures will have significant impact on the existing traffic patterns, and will result in traffic diverting to upstream and downstream ramps. The traffic problems that would occur at the closed ramp would be pushed to adjacent ramps through the corridor and potentially create new, unintended operational issues.

In addition, diverted traffic would move to the already stressed parallel local roads. Potential negative impacts of ramp closures include:

- Potential for traffic diversion.
- Promotion of longer trips.
- Increases in fuel consumption and emissions (for diverted trips).

    - Diverted vehicles are forced to take longer trips via the local street network to access adjacent service interchanges and as a result they incur longer travel times and an increase in fuel consumption and emissions
- Socio-economic changes (e.g., neighborhood and business impacts).
    - Additional traffic on the local street network due to ramp closures would likely necessitate strip taking of on-street parking to accommodate the additional demand, which effects businesses
    - Additional noise on local roadways due to the increase in traffic volumes
- Changes in local land values.
    - Loss of on-street or near-by parking for businesses
    - Potential loss of mobility and direct freeway access

Restrictive On-Ramp Metering Using Adaptive Dynamic Ramp Metering during Peak Hours A strategy related to the automatic on-ramp closure during peak hour strategy is the potential implementation of restrictive ramp metering during the peak hours using adaptive dynamic ramp metering systems to both manage the traffic demand entering I-94 and to discourage any local trips that both enter and exit I-94 within the project corridor limits. Similar to the automatic on-ramp closures, this may marginally decrease the traffic volumes on I-94, diverting those local trips to the local arterials, and potentially improving the LOS on I-94. Dynamic ramp metering uses active inputs in the form of volume, occupancy and queue length to an algorithm that changes ramp meter timing to aid in managing recurring congestion on I-94 created by high volumes of entering vehicles. This system would include installing sensors along the mainline and ramps and queue detectors on the adjacent local signalized intersections that would communicate back to the State Traffic Operations Center (STOC). Another key factor of this strategy is to provide sufficient length at the on-ramps to store the queues of entering vehicles without negatively impacting local arterial operations.

Lane Control System

Overhead lane-specific signals would denote a red "X" if travel in the lane is prohibited and a green arrow if travel is permitted or closing off a lane when an incident occurs). This would not increase capacity of I-94. It is designed to mitigate the adverse effect of incidents by informing drivers of upcoming lane closures. Closing a lane during off-peak hours would allow a shoulder to be provided on one side of the freeway but there would be no shoulder during peak hours, when it is most needed to avoid disruption to traffic from incidents.

Another option to installing the overhead lane-specific signals is to provide similar functionality through the installation of more frequent full-color; full-matrix dynamic message signs (DMS) either overhead or along I-94 that can warn drivers of changing traffic conditions, incidents or maintenance operations with a variety of written or graphical messages.

Queue Warning Systems

Advanced full-color; full-matrix DMS either overhead or along I-94 warning the driver of slower speeds and congested conditions ahead to reduce the probability of secondary and rear-end crashes by giving drivers more time to react to changing road conditions, with emphasizing additional signing in areas of limited sight distance. Queue sensors supporting the queue warning systems must be installed throughout the corridor with close spacing that would communicate to the STOC and recommends messages to be posted on the DMS to warn of the changing traffic conditions ahead. This would likely decrease capacity and operations on I-94 by reducing throughput but could reduce the likelihood of crashes.

Variable Speed Limits

Advanced overhead signs warning the driver of slower speeds and reducing speed during stop and go traffic to reduce the probability of a crash by giving drivers more time to react to changing road conditions. This would likely decrease capacity and operations on I-94 by reducing throughput but could reduce the likelihood of crashes. In 2009, Missouri Department of Transportation completed a study of variable speed

limits on the Missouri side of the I-270/I-255 loop around St. Louis a year after the variable speed limit signs were in place. Noticeable benefits were observed with respect to reduction in the number of crashes, but limited benefits were provided in terms of improvements to overall mobility and capacity along the corridor.

Managed Lanes

A challenge to implementing managed lanes, either buffer or barrier-separated, on this segment of I-94 is that over 60 percent of vehicles that travel I-94 between 70th and 16th streets are entering or exiting I-94 at one of the interchanges in the corridor. Managed lanes are usually, but not always, constructed along the median or inside lane of the freeway, typically to serve mid- to long-range commuter trips and through trips, rather than local trips. So, drivers that want to exit the freeway at one of the many service interchanges on I-94 in the study area would have to cross over two to three lanes of traffic to reach an exit ramp. Drivers entering the freeway that want to use the managed lanes would also have to weave across two to three lanes of traffic. This reduces the LOS on the freeway (NCHRP 2012). Weaving at the downstream end of the managed lanes also needs to be considered. As the managed lane ends and managed lane traffic begins to merge with traffic in the general purpose lanes, weaving would take place with traffic from the managed lane potentially moving at different speeds than the general purpose lanes. Like several other measures noted above, this would need to be implemented regionally to be effective. See Section 2.4.5.3 of the Draft EIS.

Half-Hawley Interchange

There is inadequate space available to accommodate ramp tapers and gore areas for an eastbound on-ramp and/or a westbound off-ramp at the Hawley Road Interchange due to the constrained location adjacent to the cemeteries, and WisDOT's and FHWA's determination to not impact graves in any of the adjacent cemeteries. An eastbound off-ramp and westbound on-ramp can be constructed, but would feature short and substandard weaves between the eastbound 68th Street on-ramp and eastbound Hawley Road off-ramp, and the westbound Hawley Road on-ramp and westbound 68th off-ramp. Additional engineering and traffic work is underway to investigate the viability of a half-diamond interchange in this location. Traffic LOS will be determined based on diversion forecasting of modified access to and from I-94 at Hawley Road, and geometrics will be developed for both an auxiliary lane configuration, and for a collector-distributor road configuration to address the weaving issues discussed above.

Safety Elements Considered

The following additional safety elements have been considered with the 8LAG.

Dynamic Message Signs (DMS)

DMS are electronic sign boards connected to the STOC used to display information on the highways. Operators are able to place messages on the DMS to alert drivers of incidents ahead, maintenance, snow removal operations, ramp or lane restrictions and other important information about current or future highway conditions. DMS would also be used to provide driver information such as travel times, construction zones and Amber alerts. The advanced warning provided by the DMS would encourage merging and lane changing ahead of a potentially restricted segment. DMS are operating in the state of Wisconsin, and will be evaluated with the 8LAG.

Ramp Gates at On-Ramps

Temporary ramp closures with a ramp gate is a strategy generally considered for safety benefits during construction, to perform maintenance activities, managing special events, when severe weather conditions are present or when travel on a roadway is unsafe, and if an incident has occurred on the freeway. Ramp gates are already operating in southeast Wisconsin, and will be evaluated with the 8LAG.

Solid Pavement Marking

The cemetery section contains an approximate 2800' radius in addition to the 11-foot lanes and 2-foot shoulders. Because of this, lane changing is not recommended within the segment. The use of a single 8-inch

solid white stripe between Mitchell Boulevard and Hawley Road would discourage weave maneuvers, likely decreasing the frequency of incidents.

Linear Delineation and Reflective Panels

Linear delineation and reflective panels can be placed along the barrier on the outside of the curve through the cemetery section. According to FHWA's *Safety Evaluation of Improved Curve Delineation* Techbrief dated August 2009, improved delineation will allow for drives to have better visibility when approaching curves by increasing visual cues, provide positive guidance, encourage drivers to decrease their speed into the curve and can be helpful during nighttime conditions.

Advanced Warning Signs

Signs can be used to warn drivers in advance of narrow lanes and shoulders. Advanced warning signs used in conjunction with some of the additional safety measures can improve the safety of the 8LAG alternative.

Conclusion

The 2006 regional transportation plan has aggressive transit assumptions, recommending a doubling of transit. However, actual transit service has declined 20 percent since the plan was adopted. Local, county, state, or special districts implement recommendations for the transportation facilities and systems they have jurisdiction over as they see fit and funding allows. History shows little success in implementing transit and other TDM/TSM measures listed above. The I-94 East/West study has incorporated such measures and assumptions into the design year traffic analysis, but if these elements are not implemented, additional volume and the resulting congestion can be expected on the freeway, not only by the design year but well in advance of that period. Many of these measures need to be implemented regionwide, yet there is no regionwide consensus, or mechanism in place, to execute them. Diverting traffic to parallel east-west arterials such as Greenfield and National Avenues has been included in this analysis. These strategies, including removing parking and introducing additional arterial traffic into neighborhoods and past business districts, are controversial in nature. Beyond the traffic and congestion implications, it can be expected that arterial crashes and crash rates would rise on these arterials.

The I-94 East West Stadium Interchange study falls within both a heavy daily urban commuter route and a highly used special event corridor. Because of these two factors, a LOS 'D' for the 200th-highest hourly volume, is the goal for traffic operations, rather than a LOS 'C'. By using a lower LOS, there is more of a risk for an incident to occur on the freeway. Building eight 11-foot lanes with 2-foot inside and outside shoulders will not provide any refuge for disabled vehicles, for law enforcement activities, or for maintenance activities including snow removal. The 8LAG alternative will operate at or near capacity in the design year on the west leg/cemetery section, creating traffic bottlenecks. Without a more acceptable typical section, including adequate through-lane capacity and standard-width traffic lanes and shoulders, any traffic incident will result in compounded operational delays and increased crash potential.

Deployment of all of the SEWRPC-recommended elements is needed with the 8LAG to achieve minimal LOS D in the design year. Additional measures may help alleviate some congestion, but do not address the substandard geometrics and typical section limitations, and are not included with the 8LAG alternative. As stated in the American Highway Users Alliance study of Unclogging America's Arteries (as referenced on FHWA's website), "A sound base infrastructure must already exist before transportation operations can be used. Only so much extra efficiency can be squeezed out of an already-stressed highway system."

Shortly after being sworn in last year, US DOT Secretary Anthony Foxx said "As I begin my tenure at DOT, I plan to focus on three key areas, the first of which should come as no surprise to anyone who knows this Department: *safety*. As it has been for Secretary LaHood, the dedicated DOT workforce, and DOT's many

partners and stakeholders, ensuring that America's transportation system is the safest in the world will be my top priority."[4]

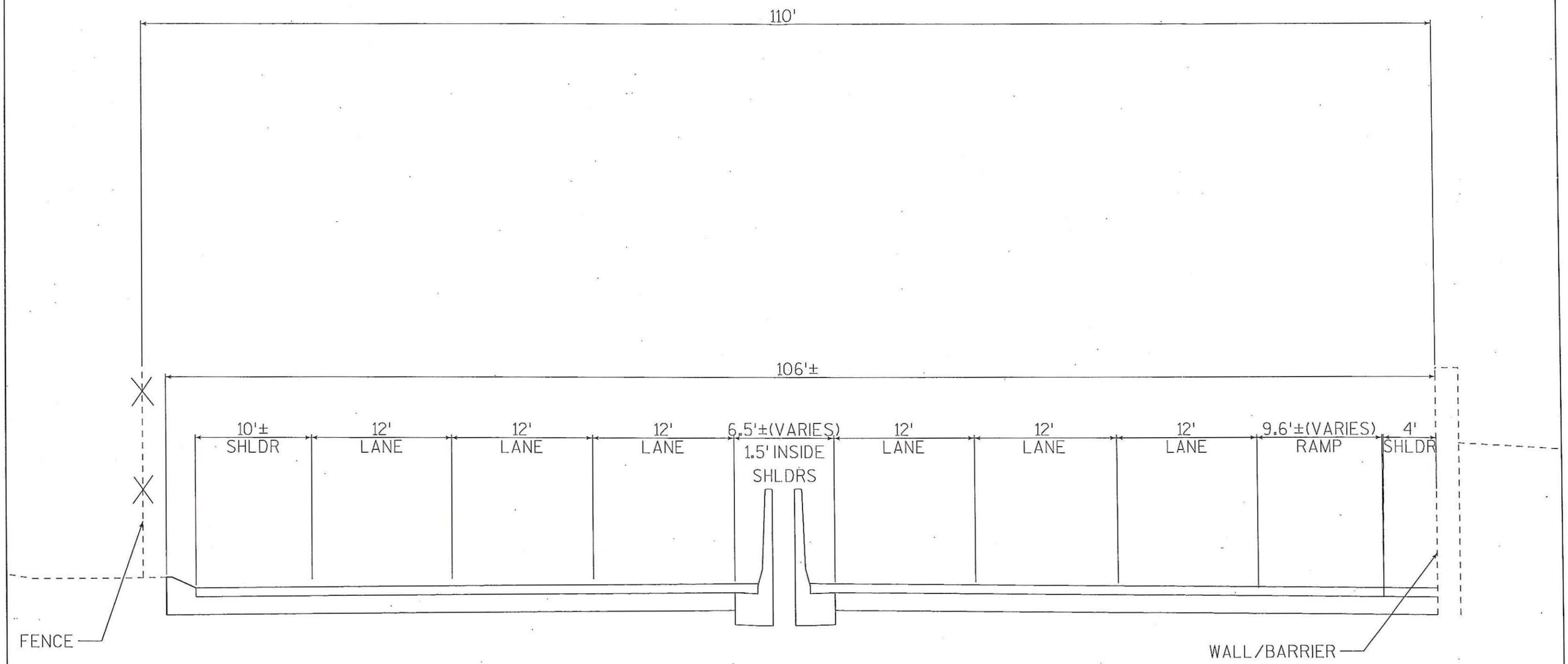
As part of the at-grade alternative, the Hawley Road and Mitchell Boulevard interchanges would be removed from I-94. By eliminating the interchanges, there would be no weaving traffic in this segment of the project. This would correct the existing deficient *ramp spacing* between Hawley Road and the 68th/70th Street interchange to the west and the Mitchell Boulevard interchange to the east. Additionally, eliminating the Mitchell Boulevard interchange would remove the *left-hand exit and entrance* to/from Mitchell Boulevard on eastbound I-94 and the *left-hand entrance* from Mitchell Boulevard to westbound I-94.

The best option to maximize safety and traffic operations in the width available for the 8-lane at grade typical section is the eight 11-foot lanes and 2-foot inside and outside shoulders, and remains the one 8LAG alternative still under consideration as a potential preferred alternative. The 8LAG has been evaluated with all possible scenarios, and all additional TDM and TSM measures would have to be implemented to improve operations. The combination of the 8LAG with TDM and TSM measures in the regional plan would not include any of the additional elements beyond the regional plan. Several of the measures would have to be implemented regionally to be effective. Closing on-ramps during peak hours could affect the development potential of the business corridors that it serves to the north and south of the freeway. It would also place greater pressure on the already strained adjacent interchanges and local roads. The increased traffic could diminish the business environments along these arterials by creating more conflicts between pedestrians and vehicles and increasing the potential for more vehicle collisions. Local stakeholders have expressed concerns that these corridors are already impacted by high traffic volumes and additional traffic congestion on local roads could discourage future business investment. Finally, further investigation is needed for the Half Hawley interchange.

Even though none of the additional elements are included with the 8LAG, all of the safety elements considered are incorporated. Some of these mitigation strategies for both lane and shoulder widths are aimed to enhance the driver's ability to stay within the lane. The roadside delineators can also help drivers see changes in roadway geometry. The DMS can provide advance warnings to drivers if a lane was closed or an incident had occurred. Furthermore, the ramp gates can be used to temporarily close a ramp for construction, to perform maintenance activities, to manage special events, when severe weather conditions are present or when travel on a roadway is unsafe, and if an incident has occurred on the freeway.

WisDOT and FHWA are retaining both the 8LAG and DD design alternatives throughout the balance of the NEPA phase. The contrasting engineering, performance, impact, and cost differences inherent in each alternative are in some cases significant, warranting additional study and stakeholder feedback opportunities as the Draft EIS, Final EIS, and ROD processes are undertaken over the next 12-16 months. No determination of a preferred alternative will be made until after the conclusion of the full DEIS availability period, and following consideration of stakeholder feedback, testimony, and additional engineering analyses.

[4] https://www.dot.gov/fastlane/moving-forward-safe-effective-and-strong-transportation



EXISTING I-94 TYPICAL SECTION

EXHIBIT 1

8 Lanes at grade
Dimensions of Substandard features

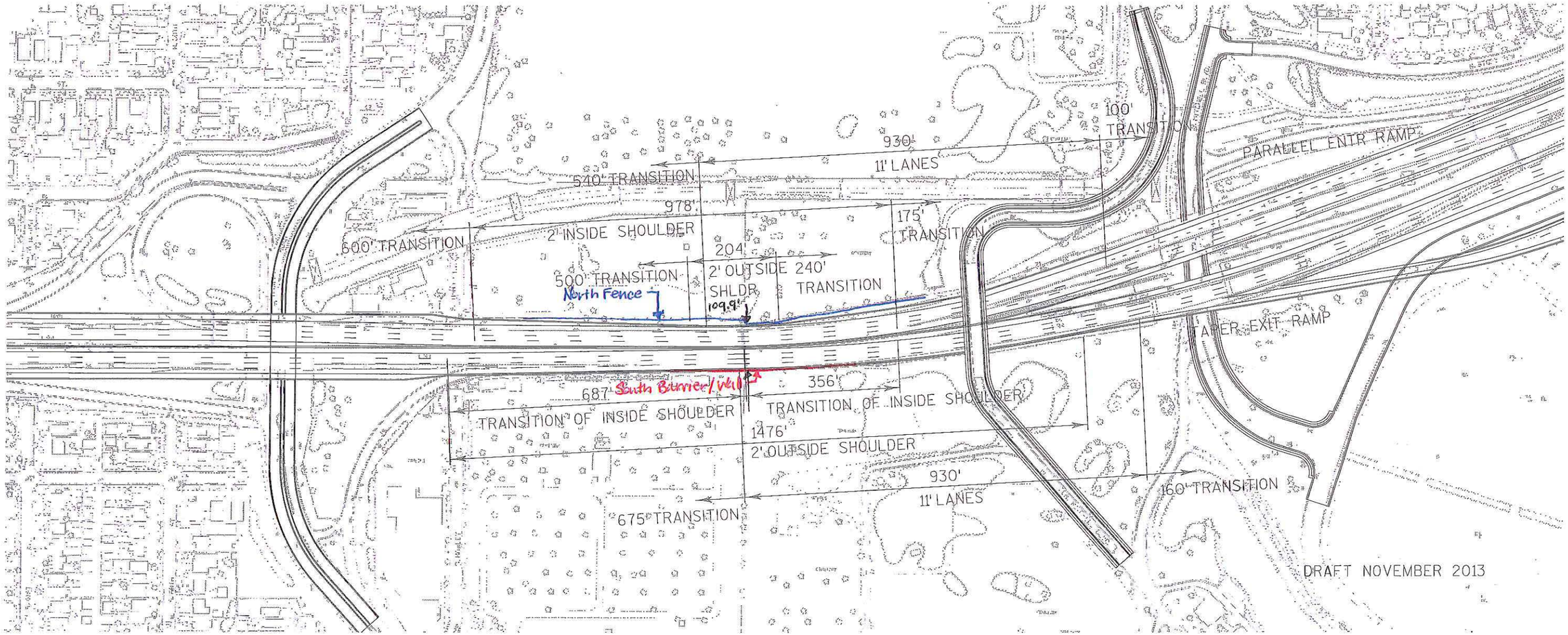


EXHIBIT 2

Archaeological Investigations
I-94 East-West and Stadium Interchange
70th Street to 25th Street
National Avenue to Lisbon Avenue
Milwaukee County
Project ID: 1060-27-00

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Disclaimer/Warranty Statement

This Archaeological Study was completed for CH2M Hill, Inc., on behalf of the Wisconsin Department of Transportation (WisDOT) and Federal Highway Administration (FHWA). Information contained in this report should be considered confidential and only used to comply with the requirements of the National Historic Preservation Act of 1966, Archaeological Resources Protection Act of 1979 as amended, or Wisconsin State Statute 44.40 and 157.70. The looting or destruction of historic properties may be subject legal fines, imprisonment, and or penalties.

EXECUTIVE SUMMARY/ABSTRACT

Preliminary Archaeological Investigations were conducted along the IH-94 corridor popularly referred to as the Stadium Interchange. Improvements need to be made in order to accommodate increased traffic, deteriorated pavement, and high crash rate along this corridor. It was the task of the archaeological investigation to examine the archaeological resources within the vicinity of this corridor to assist in future planning.

Background documents search into the Wisconsin Historic Preservation Database indicated that 6 archaeological sites were listed immediately adjacent to the exiting highway right of way. Three of these were prehistoric sites. Two of the three were also listed as burial sites. Field examination failed to detect any intact and exposed ground surfaces adjacent to the existing right of way. Another three of the six sites were historic cemeteries. All three of these cemeteries are active today. The original boundaries of all three of these cemeteries were located within the exiting right of way of IH-94. These boundaries were adjusted during the construction of IH-94 in the 1950s.

Historic records and oral interview suggest that two of the three cemeteries never actively interred human remains within the areas deeded to the State of Wisconsin for the construction of IH-94. Documents do suggest, however, that one site, the Wood National Cemetery (BMI-0026), removed at least 42 human graves from the future right of way of IH-94 in the 1950s. The only evidence of this move is a notation on a 1957 Wisconsin Department of Transportation drainage map. There is no evidence at this time that graves were covered over during the construction of IH-94.

It should be noted that the Wood National Cemetery is part of the Nation Home for Disabled Volunteer Soldiers National Historic Landmark and a contributing element in a National Register of Historic Places District. The other two cemeteries will be evaluated for eligibility to the National Register of Historic Places in attached to this document.

DESCRIPTION OF UNDERTAKING

This is a preliminary study. It has not yet been determined what improvements will be made on the existing corridor as outlined in Attachment 2.

PROJECT AREA and AREA OF POTENTIAL EFFECT

The area under investigation was the segment of IH-94 between 70th Street and 25th Street and the segment of USH 41 between National Avenue and Lisbon Avenue. It should be noted that all properties immediately adjacent to the exiting right of way are developed urban land. The only exception to this are the areas immediately adjacent to the existing right of way that are cemetery land.

CH2M-Hill provided ARI with project location information including a site sketch delineating the location of the proposed project area and supporting information.

PROJECT LOCATION INFORMATION

The project area is located in the following section, township and range:

Milwaukee County, Wisconsin
Milwaukee 7.5 Minute USGS Quadrangles
T7N, R21E, Sections 25, 26, 27, 34, 35, 36
Civil Township: Milwaukee
(**SEE ATTACHMENT 2**)

BACKGROUND DOCUMENTARY and LITERATURE SEARCH

Please see attached Archaeological Literature and Records Review (Form DT 1459).

AFFECTED ENVIRONMENT

It is necessary to understand the geomorphology and topography of the project area prior to conducting field investigations. Any such study necessitates a discussion of not only physiography, but also soils, drainage systems, and present land uses. These factors contribute to an understanding of what the prehistoric and historic landscape looked like at the time of site formation as compared to

the present landscape.

Physiographic setting

Paull and Paull (1977), following Martin (1965), have divided Wisconsin into four physical provinces. These are the Northern Highland, the Central Plain, the Western Upland, and the Eastern Ridges and Lowlands (see **ATTACHMENT 1**). The project area is located in the Eastern Ridges and Lowlands. This province is underlain by an extensive series of anticlines and synclines that express themselves most strongly in the Niagara cuesta and escarpment, which extends down the Door Peninsula and along a southerly course from the eastern shore of Lake Winnebago. The cuesta slopes gently towards the Lake Michigan basin, creating a divide between the Lake Michigan and Upper Fox River drainage basins.

The province has been affected by a series of glaciations. These include the intrusion of the Green Bay glacial lobe and the creation of ice-dammed glacial lakes ancestral to today's Lake Michigan and Lake Winnebago. As a result, this portion of the province is mantled with a complex series of ground, end, and lateral moraines, sheet till, outwash, and glacio-fluvial and glacio-lacustrine sediments. The project area is located within a broad vegetative zone dominated by a mesic deciduous forest regime typified by sugar maple, basswood, and white and black oak (Curtis 1959).

GROUND COVER

The field survey was then conducted during June, July and August 2012 by David J. Keene, Ph.D., RPA. The entire project area was urban streetscape there were no areas of undisturbed ground surface within the project area. The only exception to this were the areas now used as active cemeteries.

INVESTIGATION TECHNIQUE

Field methods consisted of an initial visual inspection of all areas. Shovel testing was not conducted there were no intact or exposed ground surfaces in the urban portions of the project area. Shovel testing was not conducted in the three active cemeteries.

RESULTS

Research into archaeological site files and historic documents suggest that

there are six archaeological sites within the boundaries of the proposed project area. Two prehistoric sites MI-0030(BMI-0158) and MI-0087(BMI-0159) prehistoric burials were discovered in both of these sites and both sites are not catalogued. One historic Indian village MI-0188, the Menominee Valley Village Site is located in the northern most portion of the project area. In addition there were three historic cemeteries recorded with the boundaries of the project area: BMI-0025, the Spring Hill Cemetery; BMI-0024, the Beth Hamedrosh Hagodel Anshe Sfard Cemetery; and, BMI-0026, the Wood National Cemetery were located immediately adjacent to the project corridor (see **Attachment 4**).

Concerning MI-0030 (BMI-0158; not catalogued) the Wisconsin Historic Preservation Database states:

> This site is located south of Blue Mound Road, at the former location of the Story Brothers Limestone Quarry-- now near the I-94/I-41 interchange. This site consists of a Native American cemetery discovered during gravel quarrying. MPM records indicate that a single burial and associated artifacts were found about 15 feet below the crest of the hill (Brown says five feet). It was badly disturbed by a charge of dynamite, and noted by workmen after some bones rolled down the hill. Copper artifacts were found with the remains.

At the time of this investigation the portions of this site located within the boundaries of this project area were completely disturbed by existing roadway, concrete, and surface parking facilities. There were no intact or exposed ground surfaces within project boundaries in order to conduct shovel testing. No testing permit was acquired for testing on this site since there were no exposed ground surfaces upon which to test. The portion of this site within the APE has been radically altered by previous construction activity (**Attachment 7**).

Concerning MI-0087(BMI-0159; not catalogued) the Wisconsin Historic Preservation Database states:

> This site is located at the western end of Park Hill Terrace, near Merrill Park. Burials were found while excavating a

> gravel pit at this location. No further information is available.

At the time of this investigation the portions of this site within the project APE were complete disturbed by previous road and residential construction activity. There were no intact or exposed ground surfaces. Consequently, there was no opportunity to conduct subsurface archaeological testing within the boundaries of this site (**Attachment 8**).

Concerning MI-0188 the Wisconsin Historic Preservation Database states:

> This site is located on the banks and bluffs of the Menominee River, from the Gettelman Brewery (44th and State Street) westward. This site consists of a village inhabited by several hundred Potawatomi and Menominee. A 1904 article specifies that the village as being composed of 250 wigwams or households. Update 2007: Site has either been destroyed by industrial development or was located further north on the bluffs north of the river.

At the time of this investigation the entire portion of the site within the boundaries of the project area are disturbed be modern industrial and commercial development.

Concerning BMI-0025, the Spring Hill Cemetery, the Wisconsin Historic Preservation Database indicates that this is a catalogued cemetery.

According to documents collected by the Museum Archaeology Program (Hamilton 2012) the original northern boundaries of the cemetery extended into the current right of way of IH-94. Right of way was purchased by the State of Wisconsin in the 1950s. According to Mr. Michael Schumann the current executive director, the cemetery was founded in 1876. Mr. Schumann has been associated with the cemetery since the 1960s. It is his opinion that prior to the construction of IH-94 no human graves were located in the northern portion of the cemetery. He has in his possession all plats of burials for the cemetery. It was the practice at Spring Hill to plat sections of the cemetery for graves as needed. The entire cemetery was not platted for graves at its founding.

There are no plats in the cemetery records for the northern portion of the cemetery that includes the current right of way of IH-94. At the time of our conversation there were in the process of completing the plat of the northern portion of the cemetery up to the boundary line as it runs along current west bound lanes of IH-94. That plat and other information can be found in **Attachments 9-11**.

Concerning BMI-0024, the Beth Hamedrosh Hagodel Anshe Sfard Cemetery, the Wisconsin Historic Preservation Database indicates that this is a catalogued cemetery.

This cemetery was established in 1924 and continues to be an active Jewish Orthodox Cemetery. It is recorded as a catalogued burial site in the Wisconsin Historic Preservation Database. The current southern boundaries of the cemetery run up directly against the right of way of west bound lanes of IH-94. Documents collected by the Museum Archaeology Program (Hamilton 2012) suggest that the original southern boundaries of the cemetery extended into the current right of way of IH-94. In the 1950s the State of Wisconsin purchased cemetery property for the proposed highway right of way. According the Rabbi Melech Lensky, the current executive director of the cemetery, there is no documentation in the cemetery records to suggest that there were ever graves in this portion of the cemetery or that any were ever moved for the construction of I-94.

A current plat of graves showing the location of all known graves and their relationship to the current alignment of IH-94 was provided by the cemetery (See **Attachments 12-14**).

Concerning **BMI-0026**, the Wood National Cemetery, the Wisconsin Historic Preservation Database lists this site as not catalogued. It is, however, both on the National Register of Historic Places and a contributing property in the National Home for Disabled Volunteer Soldiers National Historic Landmark. The human graves in this cemetery are protected by the Archaeological Resource Protection Act of 1970, as amended; the Native American Graves Protection

and Repatriation Act; and applicable section of Section 106 and 110 of the National Historic Preservation Act.

The Wisconsin Historic Preservation Database states:

> This cemetery is divided into three parcels. One small parcel lies north of I-94, east of the Beth Hamedrosh Cemetery (BMI-0024) and south of Calvary Cemetery (BMI-0023). The main parcel is south of I-94, east of Spring Hill Cemetery, extending from the interstate south to a railroad cut. A newer, third, section of the cemetery is located south of the railroad cut, extending southward to a VA hospital complex.
>
> This cemetery is a U.S. National cemetery containing nearly 40,000 interments. The cemetery was established in 1871 as Soldier Home Cemetery to inter the remains of soldiers who died under the care of the soldier's hospital. The cemetery was designed by Thomas Budd Van Home, who designed the Gettysburg National Cemetery. With respect to other National cemeteries, the Wood Cemetery is second in size only to Arlington. It became a National Cemetery in 1973. Those buried in the cemetery include four Medal of Honor recipients, members of the 54th Massachusetts Volunteer Infantry (made famous in the movie Glory), and veterans of conflicts ranging from the war of 1812 to the Iraq war.

Established in 1871as the Soldier Home Cemetery on the grounds of the National Asylum for Disabled Soldiers it was renamed “Wood Cemetery” in 1937 in honor of General George Wood. Currently the cemetery is located both north and south of IH94. A 1957 Grading and Drainage Plan prepared by the Wisconsin Department of Transportation outlines an area labeled “42 graves” under the current IH-94 right of way (see **Attachments 15-18**).

According to Al Richburg, Director Wood National Cemetery, no documentation appears to exist concerning the location of this removal/relocation. He said that, "the VA likely has no records of the number of graves that were moved when the freeway was built. At that time all records were on individual cards. To avoid possible confusion, those cards may have been destroyed and a new one created when graves were relocated."

Soldiers' Home Reef

One resource that is neither a standing structure nor an archaeological site, but is on the National Register of Historic Places and a National Historic Landmark is the Soldiers' Home Reef.

This geological feature is in the Menomonee River Valley near Milwaukee and was discovered by Increase A. Lapham in the 1830s. By the 1860s it was recognized that this feature was the remains of an ancient fossil reefs, making them the first ancient reefs described in North America and among the first described anywhere in the world.

Soldiers' Home Reef is a rock hill on the south bluff of the Menomonee River valley in the SE1/4, NW1/4. NE1/4, Section 35, T7N, R21E, Wauwatosa Township, Milwaukee 7.5' quadrangle, Clement J. Zablocki Veterans Affairs Center, Milwaukee, Milwaukee County, Wisconsin, approximately 300 feet south of the Milwaukee County Stadium. The boundary follows the north and east face of the reef for approximately 560 feet and then back about 250 feet from that face as shown in **Attachement 19**.

As a National Historic Landmark this feature cannot be disturbed by construction activity of any kind.

CONCLUSION

Background site search revealed that there were three previously reported prehistoric archaeological sites within or immediately adjacent to the project area as well as three active cemeteries. Field investigation indicates that there are no intact archaeological deposits in or immediately adjacent to the current I-94 corridor that will be affected by this project. Urban development with

commercial, residential, and infrastructure development appears to have destroyed any intact subsurface evidence of these sites.

The three cemeteries were also of some concern to planners. Research into the cemeteries indicates that two of the cemeteries; Spring Hill and Beth Hamedrosh Hagodel Anshe Sfard deeded some acreage to the Wisconsin Department of Transportation in the 1950s for the construction of IH-94. The acres deeded appear never to have contained human graves. In addition there is no indication that human graves were encountered on these acres during the construction of IH-94.

Wood National Cemetery on the other hand also deeded acres to the Wisconsin Department of Transportation in the 1950s, but documents suggest that 42 human graves were moved from these acres prior to the construction of IH-94.

At this time there is no evidence that human graves are located under the existing pavement of IH-94 on acreage deeded by these cemeteries. In addition there is no evidence that any human graves once under the care of these three cemeteries are no located outside the current legal property lines of these cemeteries.

Wood National Cemetery is on the National Register of Historic Places. Spring Hill Cemetery and Beth Hamedrosh Hagodel Anshe Sfard Cemetery are not. As part of this investigation an attempt was made to gather information on both of these cemeteries to determine if they are eligible for inclusion in the National Register of Historic Places. We found that they do not meet the criteria for eligibility as set for cemeteries by the National Register. Documentation is attached.

Bibliographic References Cited and Consulted

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ARCHAEOLOGICAL LITERATURE AND RECORDS REVIEW

Wisconsin Department of Transportation

DT1459 3/2003

PROJECT INFORMATION

Project ID	Highway/Street	County	SHSW Compliance Number
1060-27-00	I-94 East-West and Stadium Interchange)	Milwaukee	

Project Termini
70th Street to 25th Street & National Avenue to Lisbon Avenue

Township(s)	Town/Range	Sections
Milwaukee	T7N; R21E	23, 24, 25, 26, 27, 34, 35, 36

USGS Quadrangle(s)
Greensdale and Franksville

SOURCES RESEARCHED

☐ See Continuation Sheet

☒ OSA USGS Maps
☐ WI Land Economic Inventory (WLEI)
☒ Burial Sites Office
☒ Previous Surveys
☐ County History
☐ Archival Maps:
☒ CEB Atlas
☒ CEB Manuscripts

Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year

☐ Other

SITES IN PROJECT AREA

☒ See Continuation Sheet

Total Number of Sites	Prehistoric	Historic	Cemeteries/Burials
	3	4	5

Code	Type	Affiliation
#47 MI-0030	Cemetery/Burial/Not Catalogued	Old Copper
#47 MI-0087	Campsite/Village/Cemetery/Burial/Not Catalogued	Unknown Prehistoric
#47 BMI-0024	Cemetery/Burial/Catalogued	Historic EuroAmerican

SITES WITHIN ONE MILE OF THE PROJECT AREA

☒ See Continuation Sheet

Total Number of Sites	Prehistoric	Historic	Cemeteries/Burials
	3	4	3

Code	Type	Affiliation
#47 BMI-0023	Cemetery/Burial	Historic EuroAmerican
#47 BMI-0182	Cemetery Burial	Historic EuroAmerican
#47 MI-0395	Campsite Village	Late Archaic/Woodland

☒ Sites Reported in the Project Area ☒ Sites Reported Within One Mile ☐ No Sites Reported in the Project Area

Research Conducted by
David Keene

Date
5/1/2012

I certify that the literature search was done according to the Wisconsin Survey Guidelines.

David Keene
(Print Name of Archaeologist)

Archaeological Research, Inc.
(Print Name of Firm or Institution)

(Signature of Archaeologist)

August 2012
(Date)

SOURCES RESEARCHED (Continued)

Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year
Publisher	Year	Publisher	Year

SITES IN PROJECT AREA (Continued)

Code	Type	Affiliation
#47 BMI-0025	Cemetery/Burial/catalogued	Historic EuroAmerican
#47 BMI-0026	Cemetery/Burial/not catalogued	Historic EuroAmerican
#47 MI-0188	Campsite/Village	Historic Indian
#47 -		
#47 -		
#47 -		
#47 -		
#47 -		
#47 -		

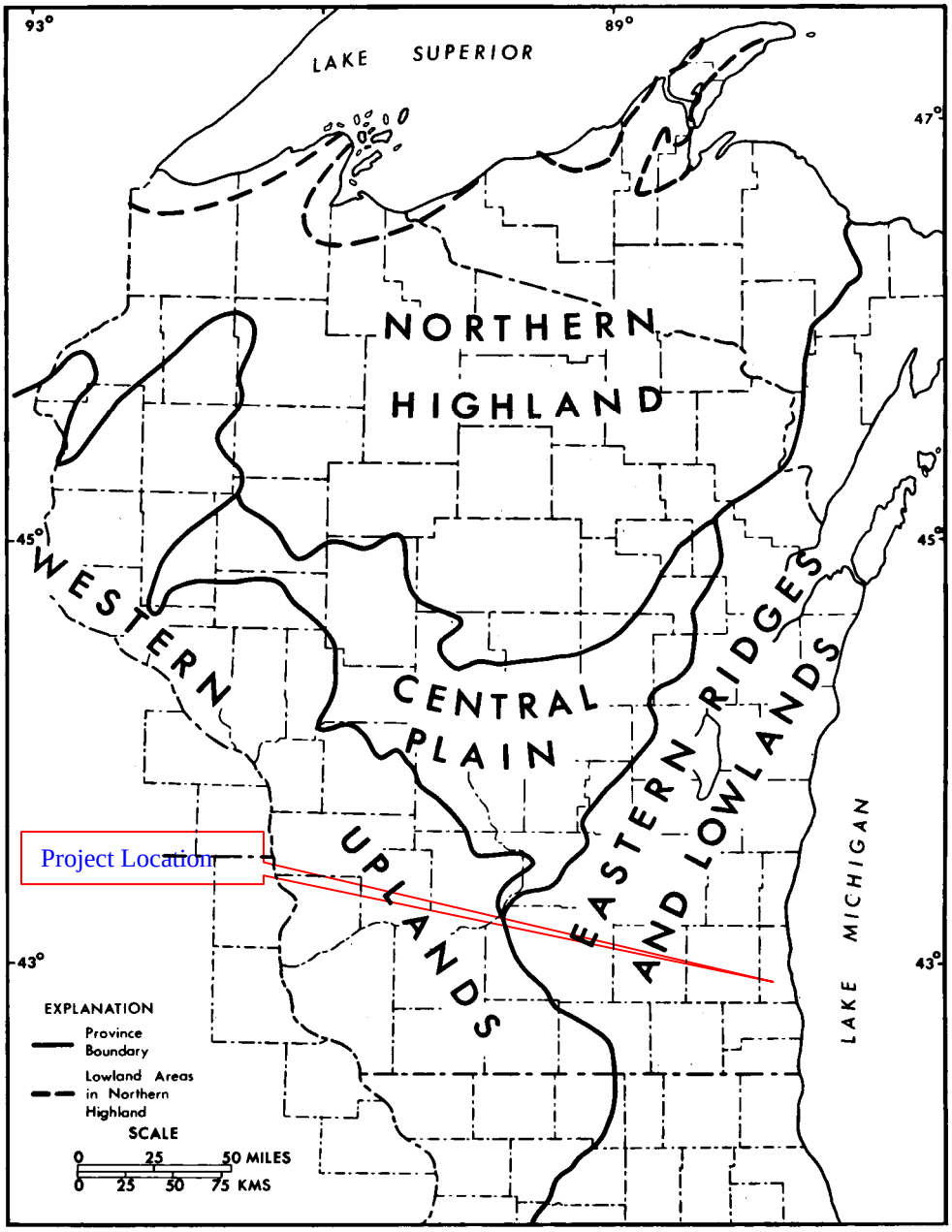
SITES WITHIN ONE MILE OF THE PROJECT AREA (Continued)

Total Number of Sites	Prehistoric	Historic	Cemeteries/Burials
	2	2	1

Code	Type	Affiliation
#47 MI-0397	Lithic Scatter/Military Site	Unknown Prehistoric/Historic EuroAmerican
#47 MI-0396	Lithic Scatter	Unknown Prehistoric
#47 BMI-0175	Cemetery/Burial	Historic EuroAmerican
#47 -		
#47 -		
#47 -		
#47 -		
#47 -		
#47 -		

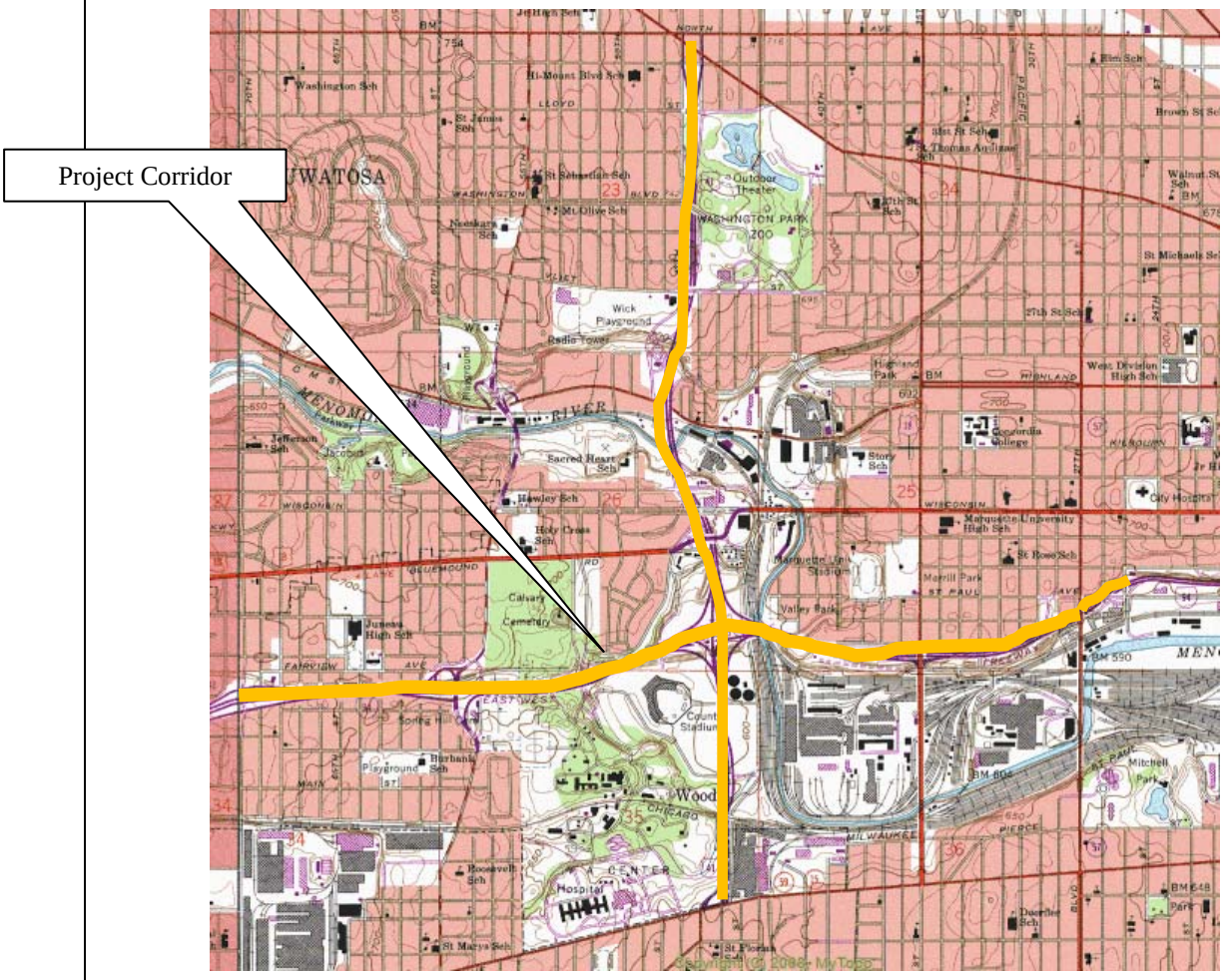
Project ID: 1060-27-00
I-94 East-West and Stadium Interchange
70th Street to 25th Street
National Avenue to Lisbon Avenue
Milwaukee County
Attachment No. 1

Attachment 1: Project Location Map



Project ID: 1060-27-00
I-94 East-West and Stadium Interchange
70th Street to 25th Street
National Avenue to Lisbon Avenue
Milwaukee County
Attachment No. 2

Attachment 2: Project Location Map



Archaeological RESEARCH, INC.

Milwaukee County, Wisconsin
Milwaukee 7.5 Minute USGS Quadrangles
T7N,R21E, Sections 23, 24, 25, 26, 27, 34, 35, 36
Civil Township: Milwaukee

Attachment 3. Project Location in relationship to cemeteries

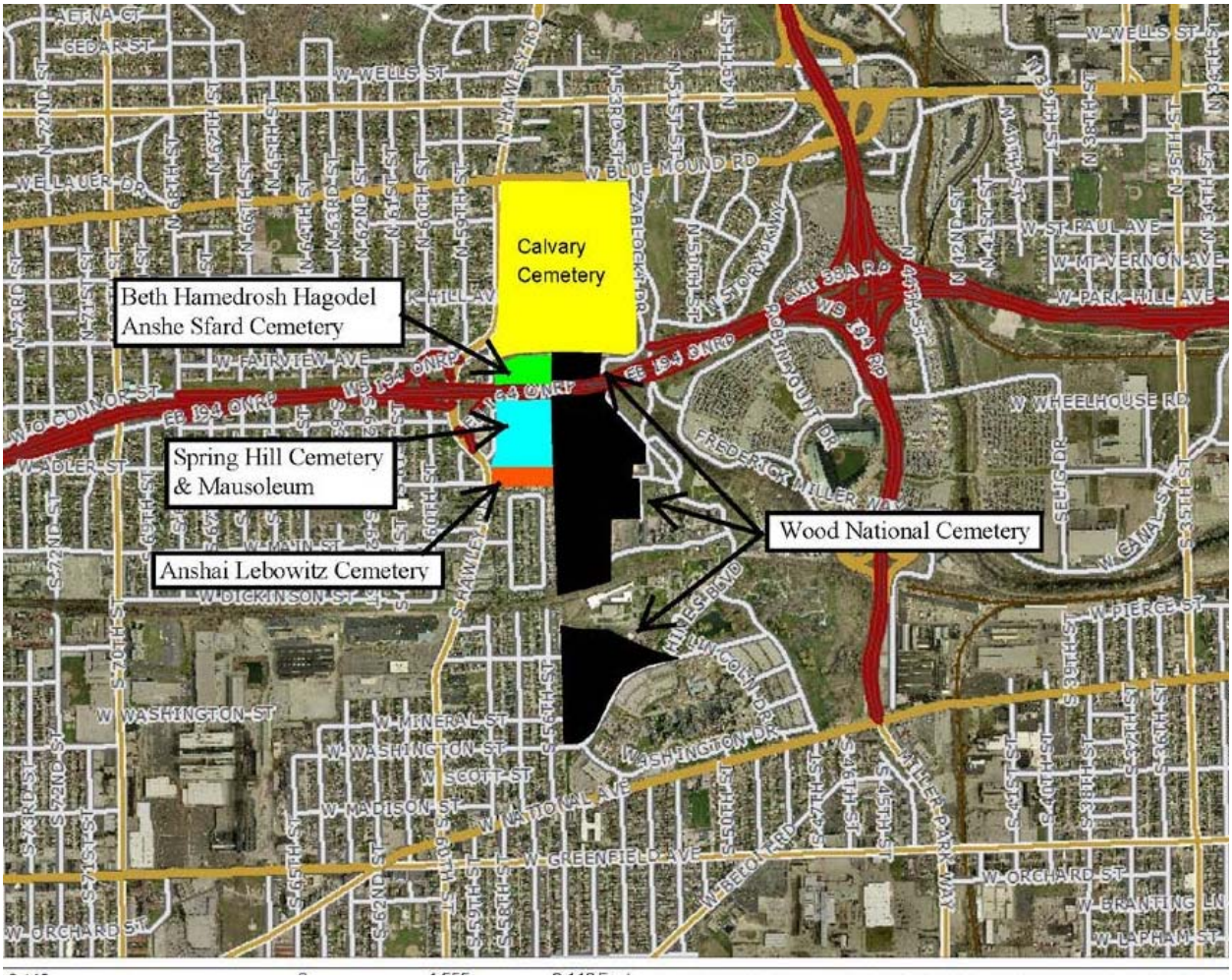
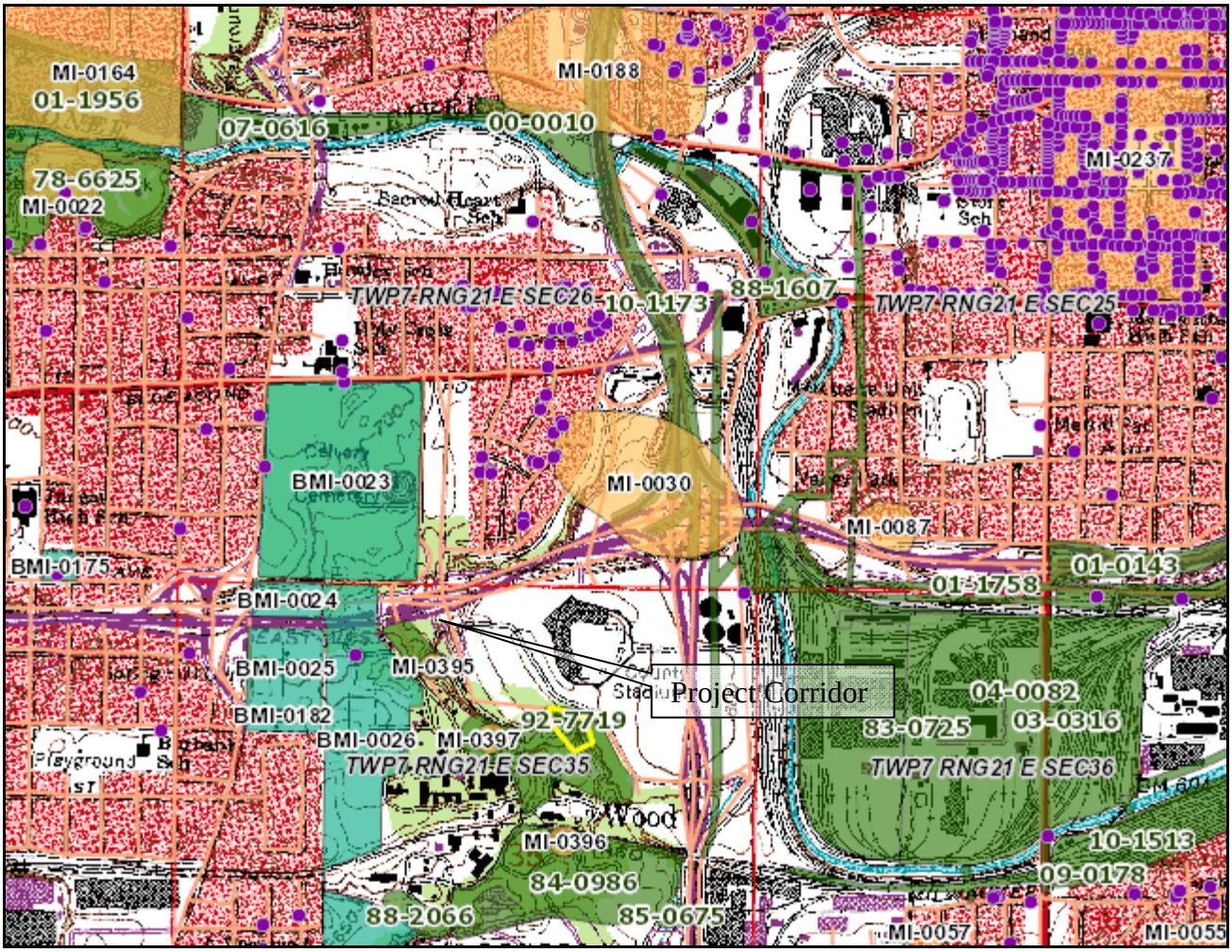


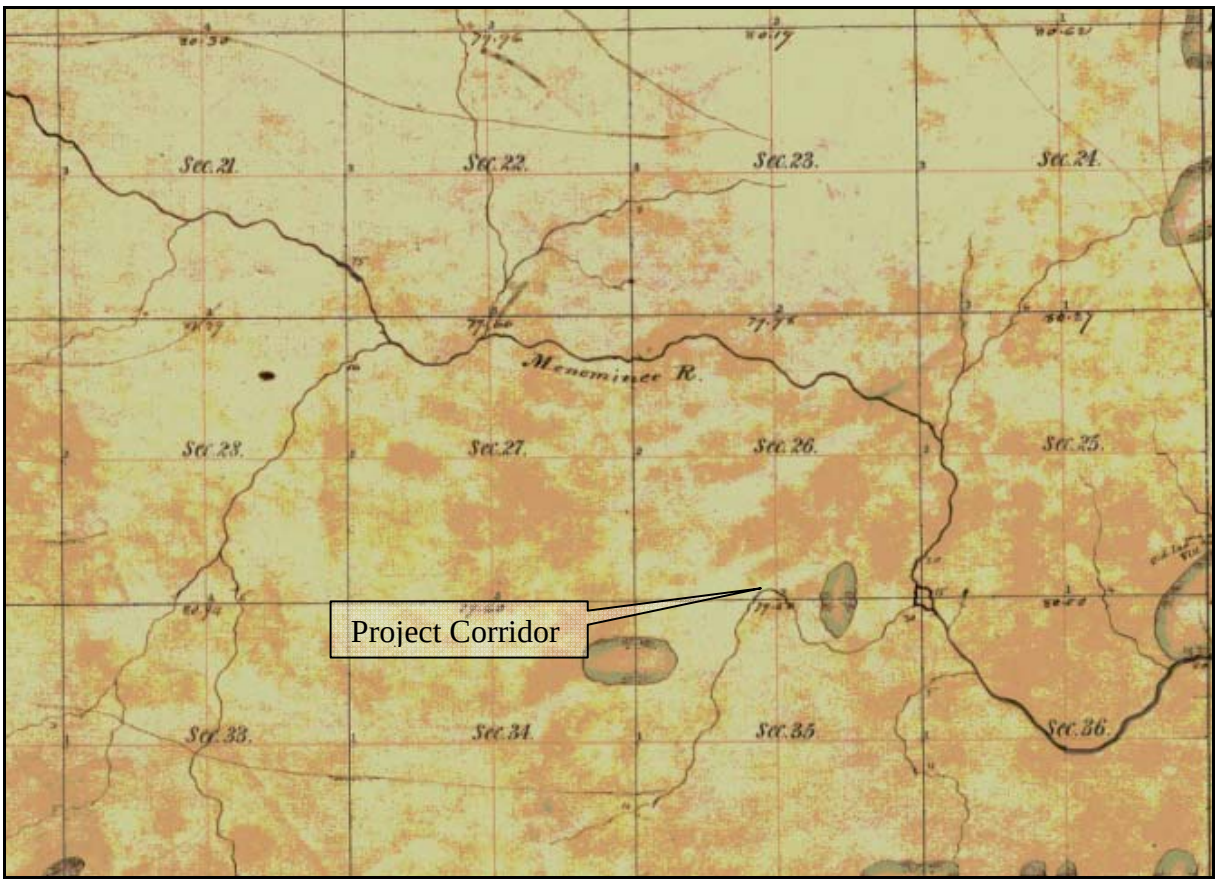
Image provided by Museum Archaeology Program State Historical Society of Wisconsin

Attachment 4. Archaeological Sites within and near the project area



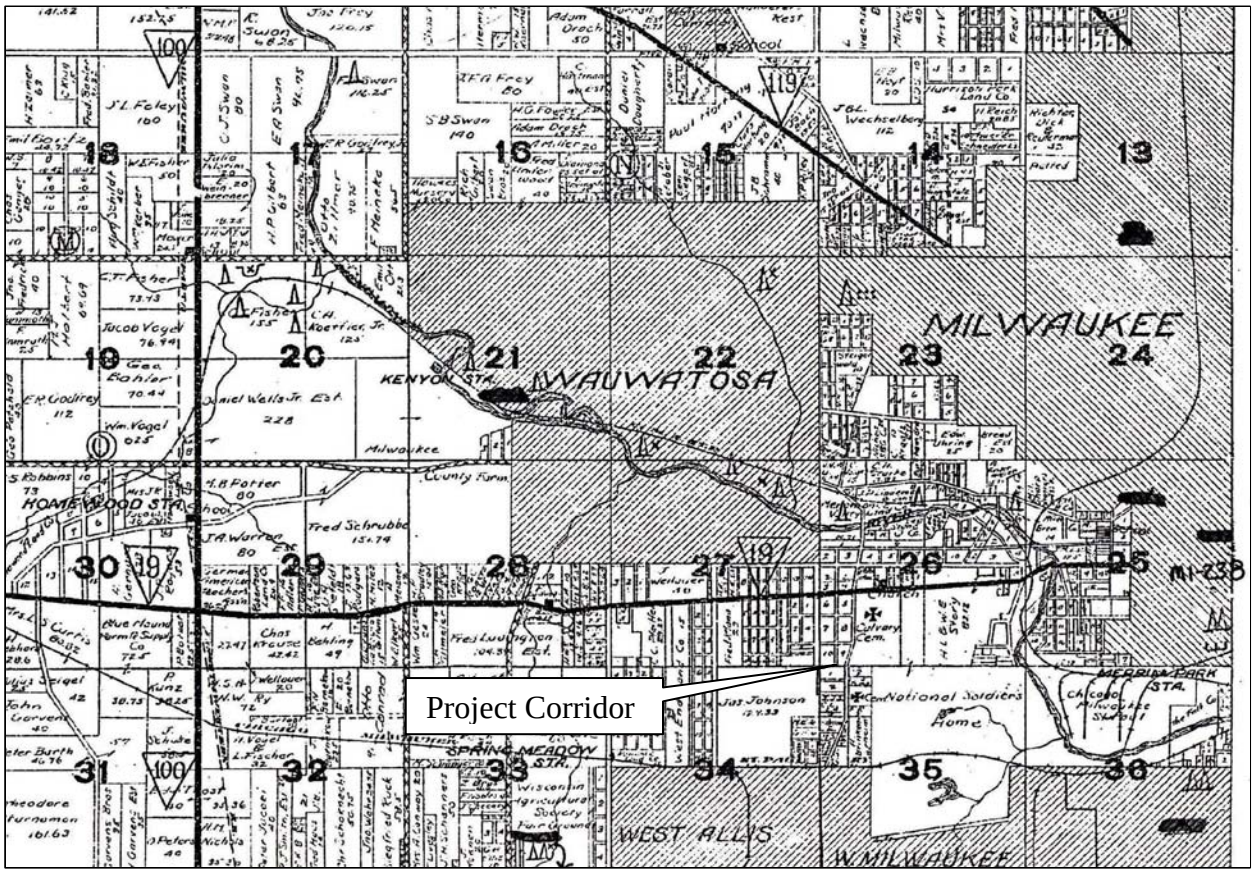
Source: Wisconsin Historic Preservation Database

Attachment 5. 1836 Public Land Survey showing project area



Source: Wisconsin Historic Preservation Database

Attachment 6. Charles Brown Atlas



Source: Charles E. Brown Archaeological Atlas of Wisconsin

Attachment 7. Photo within the boundaries of MI-0030

This photo is taken from the northwest quadrant of the intersection of IH-94 and USH 41. Note asphalt parking surface and expressway in the background.

Attachment 8. Photo taken within the boundaries of MI-0087

View to the east. Note the fence and the trees are the IH-94 right of way. The ground surface in this photo is approximately 80 feet higher that the road surface of IH-94 just a few feet south of the fence and tree line shown here.

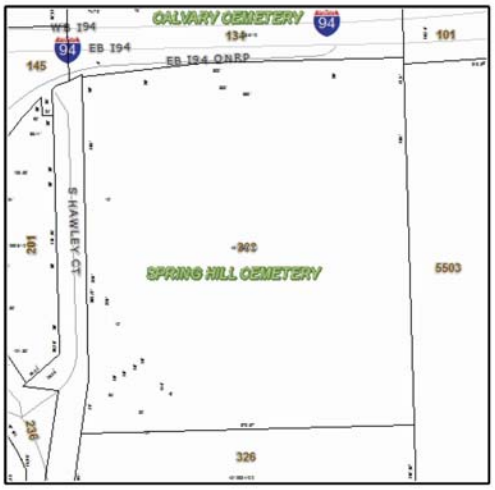
Attachment 9. Spring Hill Cemetery County

Milwaukee County Land Information Parcel Report

TAXKEY: 4219935110

Report generated 7/12/2012 7:19:46 PM

Parcel location within Milwaukee County



Selected parcel highlighted

Parcel Information

TAXKEY: 4219935110

Record Date: 08/26/1969

Owner(s): TRUSTEES OF GILEAD LODGE NO 41 B'NAI B'RITH

Address: 308 S HAWLEY CT

Municipality: Milwaukee

Acres: 21.04

Assessed Value: $330,000

Parcel Description: OTHER

Zoning Description:

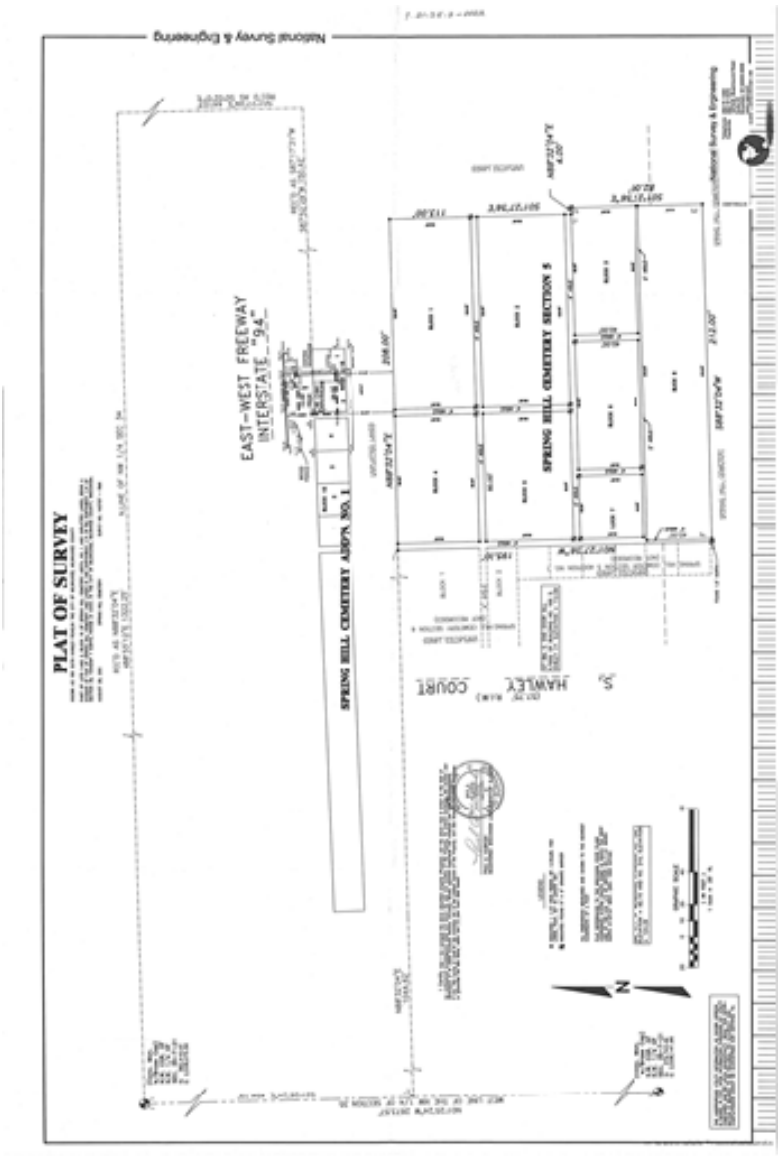
Legal Description: LANDS IN NW 1/4 SEC 35-7-21 COM E LI S HAWLEY RD & 190.65' NLY OF E & W 1/8 LI OF SD 1/4 SEC-TH E TO N & S 1/8 LI OF SD 1/4 SEC-TH N ALG SD LI TO S LI OF X-WAY-TH W & WLY ALG S LI OF X-WAY TO E LI S HAWLEY CT -TH S & SLY ALG E LI SD RD & CT TO BEG

Parcel photo

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Milwaukee County Legal Description and tax parcel information

Attachment 10. Spring Hill Cemetery Plat of Survey



This is the most current plat of survey showing burial blocks within Spring Hill Cemetery. Northern most block against the right of way retaining wall is newly platted.

Attachment 11. Spring Hill Cemetery

This is the retaining wall that separates Spring Hill Cemetery from IH-94.

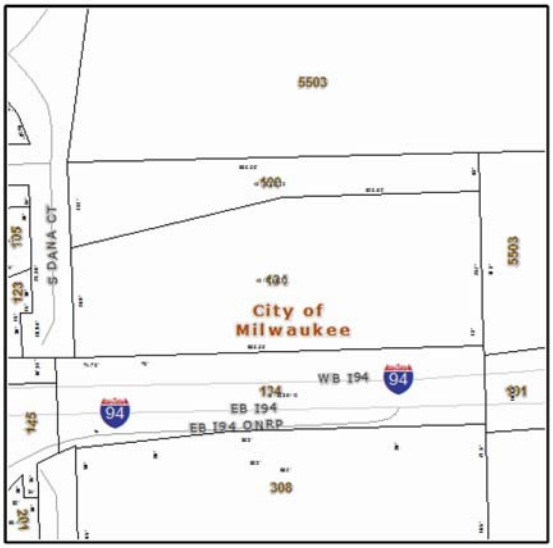
Attachment 12.Beth Hamedrosh Hagodel Anshe Sfard Cemetery

Milwaukee County Land Information Parcel Report

TAXKEY: **4219938000**

Report generated 7/12/2012 6:05:13 PM

Parcel location within Milwaukee County



Selected parcel highlighted

Parcel Information

TAXKEY: 4219938000

Record Date: 03/12/1976

Owner(s): BETH HAM HAG ANSHE SFARD
C/O MELECH LENSKY

Address: 134 S DANA CT

Municipality: Milwaukee

Acres: 6.42

Assessed Value: $102,400

Parcel Description: OTHER

Zoning Description:

Legal Description: LANDS IN NW 1/4 SEC 35-7-21 LANDS BOUNDED N BY SEC LINE- E & S BY 1/8 SEC LINE & W BY CTR LINE OF S HAWLEY RD S 237' OF N 300' ON E LI BY S 169' OF N 300' ON E LI OF STR

Parcel Photo Not Available

Parcel photo

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Milwaukee County Legal Description and tax parcel information

Attachment 13. Beth Hamedrosh Hagodel Anshe Sfard Cemetery

Current Plat of Cemetery showing burial blocks 1961.

Attachment 14. Beth Hamedrosh Hagodel Anshe Sfard Cemetery

Fence separating the cemetery from IH-94 right of way.

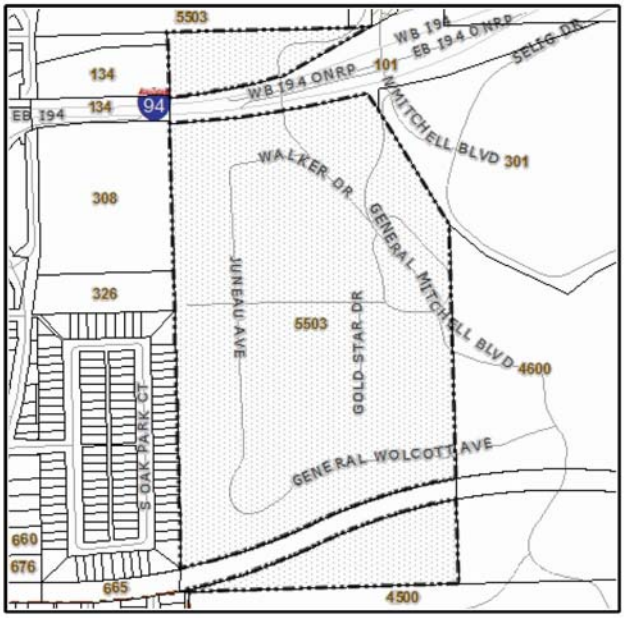
Attachment 15. Wood National Cemetery

Milwaukee County Land Information Parcel Report

TAXKEY: 4219933000

Report generated 7/12/2012 8:23:51 PM

Parcel location within Milwaukee County



Selected parcel highlighted

Parcel Information

TAXKEY: 4219933000

Record Date: 03/12/1976

Owner(s): SOLDIERS HOME

Address: 5503 W BLUE MOUND RD

Municipality: Milwaukee

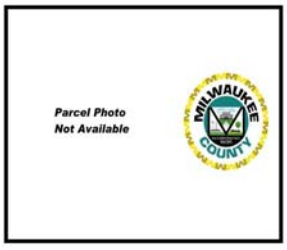
Acres: 136.74

Assessed Value: $1,280,000

Parcel Description: FEDERAL

Zoning Description:

Legal Description: LANDS IN SW 1/4 SEC 26 & NW 1/4 SEC 35-7-21 E 1/2 OF 1/4 SEC EXC (100' RY ROW ACROSS SLY PART & ELEC ROW EASEMENT IN NE COR) & PART DEEDED TO MILW COUNTY IN NLY PART FOR STADIUM & EXPRESSWAY

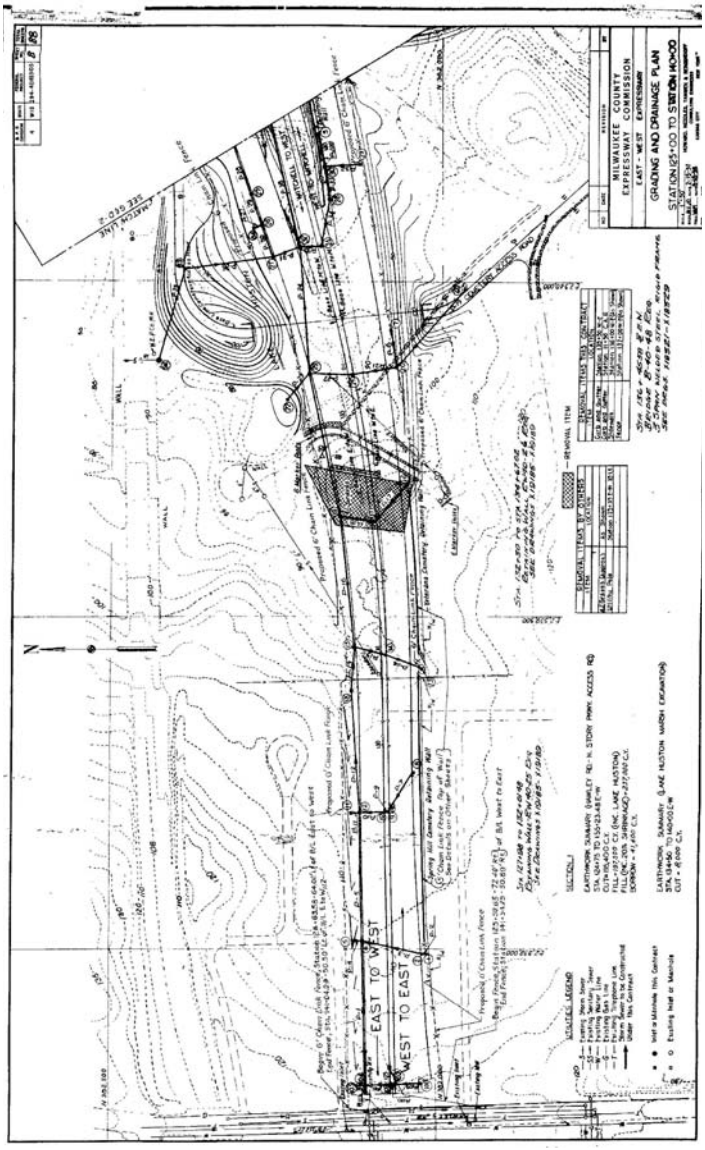


Parcel photo

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Milwaukee County Legal Description and tax parcel information.

Attachment 16. Wood National Cemetery



This illustration provided by the Wisconsin Department of Transportation shows the as- built boundaries of IH-94 in 1958. It also documents an area from which 42 graves were removed prior to construction.

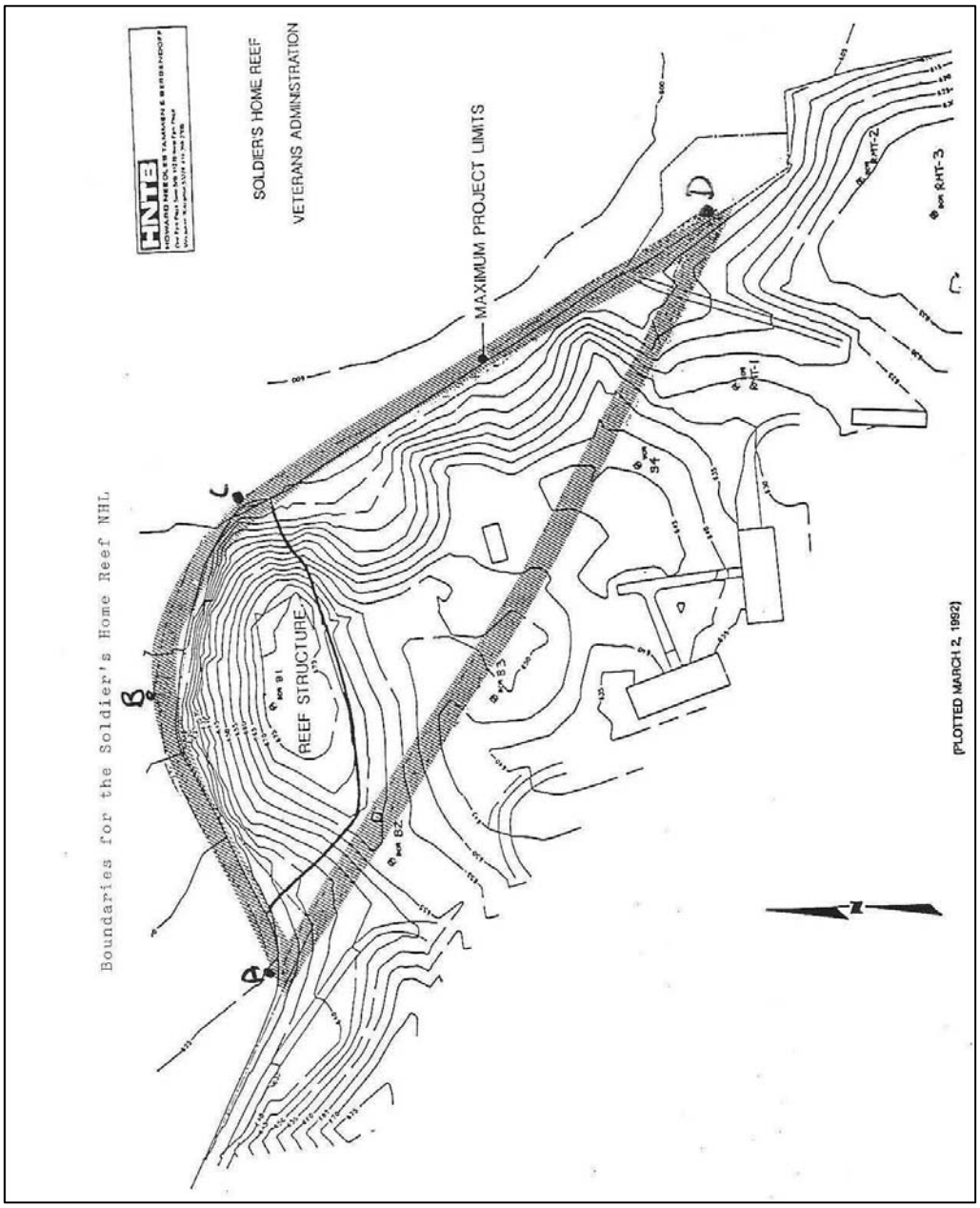
Attachment 17. Wood National Cemetery

View to the west from inside the Wood National Cemetery showing the retaining wall which separates the cemetery from IH-94. This is the approximate location from where the 42 graves were removed.

Attachment 18. Wood National Cemetery

View to the east from inside Wood National Cemetery showing the fence line that separates the cemetery from IH-94

Attachment 19. Soldier's Home Reef



Soldiers' Home Reef: Veterans Administration," by Howard, Needles, Tammen & Bergendoff

Wisconsin ASI Update Form

Fill in the following information as it is presently recorded: County Milwuakee

Site # 47-MI-0188 ASI # 3581 Burial Site # _____

Site Name Menominee Valley Village Town/Range/Sec.T7N., R21E., Section 22 and 26

USGS Quad NameMilwuakee

Please refer to the ASI form and provide the appropriate headings for the correction or new information. Examples of headings are: QUARTER SECTIONS, USGS MAP, and SITE DESCRIPTION. Provide a justification or reference for any new information. When appropriate, attach a sketch map and copy of USGS quad depicting map changes.

HEADING(S) AND NATURE OF CORRECTION/UPDATE: Location Description

Testing and examining the portion of the site within the proposed expansion boundaries of the IH-94 East/West Project suggests that there are no intact archaeological deposits adjacent to the existing highway.

InvestigatorDavid Keene Affiliation Archaeological Research, Inc. Date September 2012
Update submitted by:
Name David Keene Affiliation Archaeological Research, Inc. Date January 2013

****

(Leave this section blank-- for SHSW office use) HP-00-000 (rev. --/--/2000)

CHK'D☐ GIS Entry ☐ GIS Entry Checked ☐ ENTER_____ ENTRY CHK'D ☐

Wisconsin ASI Update Form

Fill in the following information as it is presently recorded: County Milwuakee

Site # 47-MI-0087 ASI # 3586 Burial Site # BMI-0159

Site Name Park Hill Terrace Gravel Pit Burial Town/Range/Sec.T7N., R21E., Section 25

USGS Quad NameMilwuakee

Please refer to the ASI form and provide the appropriate headings for the correction or new information. Examples of headings are: QUARTER SECTIONS, USGS MAP, and SITE DESCRIPTION. Provide a justification or reference for any new information. When appropriate, attach a sketch map and copy of USGS quad depicting map changes.

HEADING(S) AND NATURE OF CORRECTION/UPDATE: Location Description

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InvestigatorDavid Keene Affiliation Archaeological Research, Inc. Date September 2012
Update submitted by:
Name David Keene Affiliation Archaeological Research, Inc. Date January 2013

****

(Leave this section blank-- for SHSW office use) HP-00-000 (rev. --/--/2000)

CHK'D☐ GIS Entry ☐ GIS Entry Checked ☐ ENTER_____ ENTRY CHK'D ☐

Wisconsin ASI Update Form

Fill in the following information as it is presently recorded: County Milwuakee

Site # 47-MI-0030 ASI # 3589 Burial Site # BMI-0158

Site Name Story Burials Town/Range/Sec.T7N., R21E., Section 26

USGS Quad NameMilwuakee

Please refer to the ASI form and provide the appropriate headings for the correction or new information. Examples of headings are: QUARTER SECTIONS, USGS MAP, and SITE DESCRIPTION. Provide a justification or reference for any new information. When appropriate, attach a sketch map and copy of USGS quad depicting map changes.

HEADING(S) AND NATURE OF CORRECTION/UPDATE: Location Description

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InvestigatorDavid Keene Affiliation Archaeological Research, Inc. Date September 2012
Update submitted by:
Name David Keene Affiliation Archaeological Research, Inc. Date January 2013

****

(Leave this section blank-- for SHSW office use) HP-00-000 (rev. --/--/2000)

CHK'D☐ GIS Entry ☐ GIS Entry Checked ☐ ENTER_____ ENTRY CHK'D ☐

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: ___Beth Hamedrosh Hagodel Anshe Sfard_
Other names/site number: _____
Name of related multiple property listing**:**

_____

(Enter "N/A" if property is not part of a multiple property listing

2. Location

Street & number: _134 S Dana Court_____
City or town: Milwaukee__ State: Wisconsin_____ County: _Milwaukee___
Not For Publication: ☐ Vicinity: ☐

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets _XX__ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___national __X_statewide ___local

Applicable National Register Criteria:

___A ___B ___C ___D

_____

Signature of certifying official/Title: **Date**

_____

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

_____

Signature of commenting official: **Date**

_____

Title : **State or Federal agency/bureau or Tribal Government**

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:) _____

Signature of the Keeper | Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private:	[X]
Public – Local	[ ]
Public – State	[ ]
Public – Federal	[ ]

Category of Property

(Check only **one** box.)

Building(s)	[ ]
District	[ ]
Site	[X]
Structure	[ ]
Object	[ ]

Number of Resources within Property
(Do not include previously listed resources in the count)

Contributing	Noncontributing	
_____	_____	buildings
_____	_____	sites
_____	_____	structures
_____	_____	objects
_____	_____	Total

Number of contributing resources previously listed in the National Register _____

---

6. Function or Use
Historic Functions
(Enter categories from instructions.)
_ FUNERARY/cemetery
_
_____
_____
_____
_____
_____

Current Functions
(Enter categories from instructions.)
_ FUNERARY/cemetery___
_____
_____
_____
_____
_____

7. Description

Architectural Classification
(Enter categories from instructions.)
N/A

Materials: (enter categories from instructions.)
Principal exterior materials of the property: N/A

Narrative Description
(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

The Beth Hamedrosh Hagodel Anshe Sfard Cemetery is located on the north side of IH-94 in Milwaukee. It is bounded on the west by S. Dana Court, on the north by a utility corridor and on the east by the Wood National Cemetery. This cemetery was established in 1924 and continues to be an active Jewish Orthodox Cemetery. As an active cemetery the grounds, graves, and grave markers are well maintained. Grave and grave markers from the earliest to the most recent burials are well cared for and can clearly be seen throughout the cemetery.

Narrative Description

Beth Hamedrosh Hagodel Anshe Sfard Cemetery (1924) is located within a cluster of cemeteries which include the Anshai Lebowitz Cemetery, Wood National Cemetery (1871), Spring Hill Cemetery (1876), and Calvary Cemetery (1857). All of these cemeteries are active today and undergo regular maintenance. Each of these cemeteries reflects the beliefs and heritage of its constituents. Beth Hamedrosh Hagodel Anshe Sfard Cemetery was established in 1924 by Congregation Beth Hamedrosh Hagadol, one of the oldest congregations in Milwaukee, which was organized in 1892 by the consolidation of Anshe Jacob with Moses Montefiori Gemeinde. Much like the Anshe Lebowitz Cemetery mentioned above this cemetery contains large

gravestones which give the appearance of crowded graves. It is an active cemetery, well kept, with very little evidence of regular visitors.

The Anshe Lebowitz cemetery to the south is a Conservative Jewish Cemetery with ties to the Russian Jewish Immigrant Community in Milwaukee. Many of the grave stones are large and very close together with a crowded look. It has the look of a cemetery well cared for but not often visited. According to Jewish Burial Customs described in literature provided by the various Jewish mortuary chapels, "Judaism teaches that mourners should not show excessive grief and should avoid deifying the deceased. To this end, cemetery visitation should not be too frequent." (http://jewish-funeral-home.com/Jewish-burial-customs.html)

The Wood National Cemetery to the east of Spring Hill is a military cemetery. As is typical of American Military Cemeteries throughout the United States the stone grave markers are all of the same size and color. Graves are all evenly spaced. There are monuments interspersed throughout the cemetery and the entire cemetery is covered with well mowed and even cut domestic grass. Sections are well marked and periodic markers direct visitors to graves sites.

Spring Hill Cemetery is just south of Beth Hamedrosh Hagodel Anshe Sfard Cemetery before the construction of Interstate Highway 94 in the 1960s is an Orthodox Jewish Cemetery. Spring Hill Cemetery was established 1876 by the Gilead Lodge 41 of B'nai Brith which continues to operate the cemetery to this day. Though predominately a Jewish (Reformed) cemetery it was established and remains nondenominational. It is very much a modern cemetery in look and practice with well-kept graves and mowed lawns very much in the character of modern cemeteries.

Just north of the Beth Hamedrosh Hagodel Anshe Sfard Cemetery is Calvary Catholic Cemetery. It is the oldest cemetery in this cluster and began burials in 1857. The earliest burials in this cemetery were transferred from other cemeteries being vacated as a result of urban development. This cemetery started as a 55 acre burial area and has grown to encompass over 77 acres. One of the highest points in Milwaukee, Chapel Hill, is located within the boundaries of this cemetery. Grave spacing and size of grave markers vary in this cemetery. Early graves are often adjacent to newer graves. There is also considerable variability in size and ornateness of tombstones. Some with religious motifs others with purely secular designs. There are also a number of chapels, mausoleums, and support structures in this cemetery.

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- [ ] A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] B. Property is associated with the lives of persons significant in our past.
- [ ] C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [ ] D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark “x” in all the boxes that apply.)

- [ ] A. Owned by a religious institution or used for religious purposes
- [ ] B. Removed from its original location
- [ ] C. A birthplace or grave
- [x] D. A cemetery
- [ ] E. A reconstructed building, object, or structure
- [ ] F. A commemorative property
- [ ] G. Less than 50 years old or achieving significance within the past 50 years

Areas of Significance
(Enter categories from instructions.)

Period of Significance

Significant Dates

Significant Person
(Complete only if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

This cemetery does not meet special criteria for significance.

Special Requirements Criteria Considerations:

Criteria Considerations A: *A religious property is eligible if it derives its primary significance from architectural or artistic distinction or historical importance.*

There are no distinctive or architecturally distinctive features in this cemetery. It has the look and feel of just about any 20th century cemetery in the Midwest. Nor is its founding or history uniquely distinct from that of other cemeteries in the region.

Criteria Consideration B: *A property removed from its original or historically significant location can be eligible if it is significant primarily for architectural value or if it is the surviving structure most importantly associated with a historic person or event.*

This does not apply to Beth Hamedrosh Hagodel Anshe Sfard.

Criteria Consideration C: *A birthplace or grave of a historical figure is eligible if the person is of outstanding importance and if there is no other appropriate site or building directly associated with his or her productive life.*

This cemetery does not contain a unique concentration of prominent individuals in the history of Milwaukee.

Criteria Consideration D: *A cemetery is eligible if it derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events.*

This cemetery does not contain a unique concentration of prominent individuals in the history of Milwaukee.

Criteria Consideration E: *A reconstructed property is eligible when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived.*

This does not apply to Beth Hamedrosh Hagodel Anshe Sfard.

Criteria Consideration F: *A property primarily commemorative in intent can be eligible if design, age, tradition, or symbolic value has invested it with its own historical significance.*

There are no design features or particular historic events associated with cemetery to give it its own historic significance.

Criteria Consideration G: *A property achieving significance within the last fifty years is eligible if it is of exceptional importance.*
There are not events or features of this cemetery dating to the last fifty years that contribute to its significance.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Bruce, William George
1922 History of Milwaukee City and County. S.J. Clarke Publishing Company, Milwaukee (Three Volumes).

Gurda, John
2009 One People, Many Paths: A History of Jewish Milwaukee. Jewish Museum of Milwaukee.

Hamilton, Kelly
2012 Original Construction of the IH-94 E-W Expressway and Impacts to the Wood National Cemetery, Beth Hamedrosh Hagodel Anshe Sfard Cemetery, and Spring Hill Cemetery and Mausoleum. Museum Archaeology Program, State Historic Society of Wisconsin, Madison.

Online Resources:

Jewish Museum of Milwaukee (http://www.jewishmuseummilwaukee.org/history/timeline/index.php)

Jewish Virtual Library (http://www.jewishvirtuallibrary.org/index.html)

Wisconsin Historic Society: Jews in Wisconsin (http://www.wisconsinhistory.org/dictionary/index.asp?action=view&term_id=11484&term_type_id=1&term_type_text=people&letter=J)

Jewish Funerals and Burial Customs (http://jewish-funeral-home.com/Jewish-burial-customs.html)

Previous documentation on file (NPS):

____ preliminary determination of individual listing (36 CFR 67) has been requested
____ previously listed in the National Register
____previously determined eligible by the National Register
____designated a National Historic Landmark
____ recorded by Historic American Buildings Survey #_____
____recorded by Historic American Engineering Record # _____
____ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

____ State Historic Preservation Office
____ Other State agency
____ Federal agency
____ Local government
____ University
____ Other
Name of repository: _____

Historic Resources Survey Number (if assigned): _____

---

10. Geographical Data

Acreage of Property ___6.5_____

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates
Datum if other than WGS84:_____
(enter coordinates to 6 decimal places)

1. Latitude: Longitude:

2. Latitude: Longitude:

3. Latitude: Longitude:

4. Latitude: Longitude:

Or
UTM References
Datum (indicated on USGS map):

[ ] NAD 1927 or [X] NAD 1983

1. Zone: 16	Easting:	419772	Northing: 4764749
2. Zone: 16	Easting:	419772	Northing: 4764689
3. Zone: 16	Easting:	419947	Northing: 4764689
4. Zone: 16	Easting :	419947	Northing: 4764769

Verbal Boundary Description (Describe the boundaries of the property.)
This cemetery is bounded on the north by a Utility Corridor, on the east by Wood National Cemtery, on the south by IH-94, and on the west by S. Dana Court.

Boundary Justification (Explain why the boundaries were selected.)

---

11. Form Prepared By

name/title: David Keene
organization: Archaeological Research, Inc.
street & number: 6907 University Avenue #161
city or town: Middleton state: Wisconsin zip code: 53562
e-mail dkeene@arch-res.com
telephone: (608)836-8677
date:

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: ___Spring Hill Cemetery_
Other names/site number: _____
Name of related multiple property listing**:**

_____

(Enter "N/A" if property is not part of a multiple property listing

2. Location

Street & number: _166 S. Hawley Court,_____
City or town: Milwaukee__ State: Wisconsin_____ County: _Milwaukee___
Not For Publication: ☐ Vicinity: ☐

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets _XX__ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___national __X_statewide ___local

Applicable National Register Criteria:

___A ___B ___C ___D

_____

Signature of certifying official/Title: **Date**

_____

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

_____

Signature of commenting official: **Date**

_____

Title : **State or Federal agency/bureau or Tribal Government**

Spring Hill Cemetery — Milwaukee, Wisconsin
Name of Property — County and State

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:) _____

_____

Signature of the Keeper — Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private:	X
Public – Local	
Public – State	
Public – Federal	

Category of Property

(Check only **one** box.)

Building(s)	
District	
Site	X
Structure	
Object	

Spring Hill Cemetery — Name of Property
Milwaukee, Wisconsin — County and State

Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
		buildings
		sites
		structures
		objects
		Total

Number of contributing resources previously listed in the National Register _____

---

6. Function or Use

Historic Functions

(Enter categories from instructions.)

FUNERARY/cemetery

Current Functions

(Enter categories from instructions.)

FUNERARY/cemetery

7. Description

Architectural Classification
(Enter categories from instructions.)
__N/A_____
_____
_____
_____
_____
_____
_____

Materials: (enter categories from instructions.)
Principal exterior materials of the property: _____N/A_____

Narrative Description
(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

Spring Hill Cemetery is located immediately southeast of the intersection of Interstate Highway 94 and S Hawley Road. The site is approximately 21 acres in size and presently has about 8000 interred there. It was established in 1876 and remains an active cemetery today. As an active cemetery the grounds, graves, and grave markers are well maintained. Grave and grave markers from the earliest to the most recent burials are well cared for and can clearly be seen throughout the cemetery. Recently, a Mausoleum has been constructed on the northern boundary of the cemetery just south of Interstate Highway 94.

Narrative Description

Spring Hill Cemetery (1876) is located within a cluster of cemeteries which include the Anshai Lebowitz Cemetery, Wood National Cemetery (1871), Beth Hamedrosh Hagodel Anshe Sfard Cemetery (1924), and Calvary Cemetery (1857). All of these cemeteries are active today and undergo regular maintenance. Each of these cemeteries reflects the beliefs and heritage of its constituents. Spring Hill Cemetery was established 1876 by the Gilead Lodge 41 of B'nai Brith which continues to operate the cemetery to this day. Though predominately a Jewish (Reformed) cemetery it was established and remains nondenominational. It is very much a modern cemetery in look and practice with well-kept graves and mowed lawns very much in the character of modern cemeteries.

The Anshe Lebowitz cemetery immediately to the south is a Conservative Jewish Cemetery with ties to the Russian Jewish Immigrant Community in Milwaukee. Many of the grave stones are large and very close together with a crowded look. It has the look of a cemetery well cared for but not often visited. According to Jewish Burial Customs described in literature provided by the various Jewish mortuary chapels, "Judaism teaches that mourners should not show excessive grief and should avoid deifying the deceased. To this end, cemetery visitation should not be too frequent." (http://jewish-funeral-home.com/Jewish-burial-customs.html)

The Wood National Cemetery to the east of Spring Hill is a military cemetery. As is typical of American Military Cemeteries throughout the United States the stone grave markers are all of the same size and color. Graves are all evenly spaced. There are monuments interspersed throughout the cemetery and the entire cemetery is covered with well mowed and even cut domestic grass. Sections are well marked and periodic markers direct visitors to graves sites.

The Beth Hamedrosh Hagodel Anshe Sfard Cemetery which was on the north border of Spring Hill Cemetery before the construction of Interstate Highway 94 in the 1960s is an Orthodox Jewish Cemetery. It was established in 1924 by Congregation Beth Hamedrosh Hagadol, one of the oldest congregations in Milwaukee, which was organized in 1892 by the consolidation of Anshe Jacob with Moses Montefiori Gemeinde. Much like the Anshe Lebowitz Cemetery mentioned above this cemetery contains large gravestones which give the appearance of crowded graves. It is an active cemetery, well kept, with very little evidence of regular visitors.

Just north of the Beth Hamedrosh Hagodel Anshe Sfard Cemetery is Calvary Catholic Cemetery. It is the oldest cemetery in this cluster and began burials in 1857. The earliest burials in this cemetery were transferred from other cemeteries being vacated as a result of urban development. This cemetery started as a 55 acre burial area and has grown to encompass over 77 acres. One of the highest points in Milwaukee, Chapel Hill, is located within the boundaries of this cemetery. Grave spacing and size of grave markers vary in this cemetery. Early graves are often adjacent to newer graves. There is also considerable variability in size and ornateness of tombstones. Some with religious motifs others with purely secular designs. There are also a number of chapels, mausoleums, and support structures in this cemetery.

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

[X] A. Property is associated with events that have made a significant contribution to the broad patterns of our history.

[ ] B. Property is associated with the lives of persons significant in our past.

[ ]

C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

☐ D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

☐ A. Owned by a religious institution or used for religious purposes

☐ B. Removed from its original location

☐ C. A birthplace or grave

☒ D. A cemetery

☐ E. A reconstructed building, object, or structure

☐ F. A commemorative property

☐ G. Less than 50 years old or achieving significance within the past 50 years

Areas of Significance
(Enter categories from instructions.)

Period of Significance

Significant Dates

Significant Person
(Complete only if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

This cemetery does not meet special criteria for significance.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

Special Requirements Criteria Considerations:

Criteria Considerations A: *A religious property is eligible if it derives its primary significance from architectural or artistic distinction or historical importance.*

There are no distinctive or architecturally distinctive features in this cemetery. It has the look and feel of just about any 20th century cemetery in the Midwest. Nor is its founding or history uniquely distinct from that of other cemeteries in the region.

Criteria Consideration B: *A property removed from its original or historically significant location can be eligible if it is significant primarily for architectural value or if it is the surviving structure most importantly associated with a historic person or event.*

This does not apply to Spring Hill Cemetery.

Criteria Consideration C: *A birthplace or grave of a historical figure is eligible if the person is of outstanding importance and if there is no other appropriate site or building directly associated with his or her productive life.*

This cemetery does not contain a unique concentration of prominent individuals in the history of Milwaukee.

Criteria Consideration D: *A cemetery is eligible if it derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events.*

This cemetery is not associated with any single or collection of significant historic events.

Criteria Consideration E: *A reconstructed property is eligible when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived.*

This does not apply to Spring Hill Cemetery.

Criteria Consideration F: *A property primarily commemorative in intent can be eligible if design, age, tradition, or symbolic value has invested it with its own historical significance.*

There are no design features or particular historic events associated with cemetery to give it its own historic significance.

Criteria Consideration G: *A property achieving significance within the last fifty years is eligible if it is of exceptional importance.*

There are not events or features of this cemetery dating to the last fifty years that contribute to its significance.

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Bruce, William George
1922 History of Milwaukee City and County. S.J. Clarke Publishing Company, Milwaukee (Three Volumes).

Gurda, John
2009 One People, Many Paths: A History of Jewish Milwaukee. Jewish Museum of Milwaukee.

Hamilton, Kelly
2012 Original Construction of the IH-94 E-W Expressway and Impacts to the Wood National Cemetery, Beth Hamedrosh Hagodel Anshe Sfard Cemetery, and Spring Hill Cemetery and Mausoleum. Museum Archaeology Program, State Historic Society of Wisconsin, Madison.

Online Resources:

Jewish Museum of Milwaukee
(http://www.jewishmuseummilwaukee.org/history/timeline/index.php)

Jewish Virtual Library (http://www.jewishvirtuallibrary.org/index.html)

Wisconsin Historic Society: Jews in Wisconsin
(http://www.wisconsinhistory.org/dictionary/index.asp?action=view&term_id=11484&term_type_id=1&term_type_text=people&letter=J)

Jewish Funerals and Burial Customs (http://jewish-funeral-home.com/Jewish-burial-customs.html)

Previous documentation on file (NPS):

____ preliminary determination of individual listing (36 CFR 67) has been requested
____ previously listed in the National Register
____previously determined eligible by the National Register
____designated a National Historic Landmark
____ recorded by Historic American Buildings Survey #_____
____recorded by Historic American Engineering Record # _____
____ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

____ State Historic Preservation Office
____ Other State agency
____ Federal agency
____ Local government
____ University
__X__ Other
Name of repository: _____

Historic Resources Survey Number (if assigned): _____

---

10. Geographical Data

Acreage of Property ____21_____

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates
Datum if other than WGS84:_____
(enter coordinates to 6 decimal places)

1. Latitude: Longitude:
2. Latitude: Longitude:
3. Latitude: Longitude:
4. Latitude: Longitude:

Or
UTM References
Datum (indicated on USGS map):

[ ] NAD 1927 or [X] NAD 1983

1. Zone: 16	Easting: 419763	Northing: 4764645
2. Zone: 16	Easting: 419763	Northing: 4764469
3. Zone:	Easting: 419929	Northing: 4764469
4. Zone:	Easting : 419929	Northing: 4764645

Verbal Boundary Description (Describe the boundaries of the property.)
The cemetery is bounded on the north by IH-94, on the east by Wood National Cemetery, on the south by the Anshai Lebowitz Cemetery, and on the west by S Hawley Court.

Boundary Justification (Explain why the boundaries were selected.)

---

11. Form Prepared By

name/title: David Keene
organization: Archaeological Research, Inc.
street & number: 6907 University Avenue #161
city or town: Middleton state: Wisconsin zip code: 53562
e-mail dkeene@arch-res.com
telephone: 608-836-8677
date: January, 2013

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log

Name of Property:

City or Vicinity:

Spring Hill Cemetery | Milwaukee, Wisconsin
Name of Property | County and State

County: State:

Photographer:

Date Photographed:

Description of Photograph(s) and number, include description of view indicating direction of camera:

1 of ___.

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).
Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management. U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

BIBLIOGRAPHY OF ARCHAEOLOGICAL REPORT FORM

WHS/SHSW # ____ COUNTY Milwaukee County

AUTHORS: David Keene

REPORT TITLE: Archaeological Investigations, I-94 East-West and Stadium Interchange, 70th Street to 25th Street, National Avenue to Lisbon Avenue, Milwaukee County, Project ID 1060-27-00

DATE OF REPORT (MONTH AND YEAR): January 2013

SERIES/NUMBER: ____

PLACE OF PUBLICATION: Middleton, Wisconsin

LOCATIONAL INFORMATION [LEGAL DESCRIPTION OF SURVEY AREA (T-R-S)]
T7N., R21E., Section 25, 26, 27 and 34, 35, 36
U.S.G.S. QUAD MAP(S): Milwaukee, Wisconsin

SITE(S) INVESTIGATED: 6
ACRES INVESTIGATED: AGENCY # ____

INVESTIGATION TECHNIQUES COMPLETED (Check all that apply.)

☐ Avocational Survey	☐ Chance Encounter	☐ Controlled Surface Collection
☐ Faunal Analysis	☐ Floral Analysis	☐ Geomorphology
☐ Historical Research	☐ Interview/Informant	☐ Land Use History
☒ Literature Background Research	☐ Major Excavation	☐ Mechanical Stripping
☐ Monitoring	☐ Osteological Analysis	☒ Phase I-Surface Survey
☐ Phase II	☐ Phase II-Corridor Only	☐ Phase III
☐ Phase III-Corridor Only	☐ Records/Background	☐ Records/Background (Pred. Model)
☐ Remote Sensing	☒ Shovel Testing/Probing (Inten)	☐ Soil Core
☐ Surface Survey (Intensive)	☐ Test Excavation	☐ Traditional Knowledge
☐ Vandalism	☒ Walk Over (Reconnaissance)	☐ Unknown
☐ Other: _____		

ABSTRACT: ☒ Included in report ☐ Written in space below

2013

I-94 East-West Corridor Study Environmental Justice Plan & Preliminary Analysis

August 2013

Executive Summary

Environmental Justice

The Wisconsin Department of Transportation (WisDOT) recognizes the importance of implementing environmental justice into project development efforts. The key regulations and policy directives behind environmental justice assessment requirements are Title VI of the Civil Rights Act of 1964 and Executive Order 12898 issued by President Clinton in 1994.

Title VI of the Civil Rights Act of 1964[1] prohibits intentional discrimination, as well as disparate impact discrimination, that results when a facially neutral policy has disparate impacts on protected population groups. To clarify and amplify the nondiscrimination requirements of Title VI, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" in 1994.

Presidential Executive Order on Environmental Justice 12898 directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and/or low-income populations to the greatest extent practicable by law. The Executive Order states, to the extent practicable and permitted by law, that neither minority nor low-income populations may receive disproportionately high or adverse effects[2] as a result of a proposed project. The order requires that representatives of low-income **or** minority populations that could be affected by the project be given the opportunity to be included in the impact assessment and public involvement process.

Federal Highway Administration (FHWA) guidance, "Addressing Environmental Justice in Environmental Assessments/Environmental Impact Statements," outlines the elements and steps to be followed when preparing an EIS and requires the following steps:

- Identify existing minority or low-income population.
- Explain coordination with, access to information, and participation of environmental justice populations.
- Identify disproportionately high and adverse effects (if applicable) on environmental justice populations.

If the high and adverse impacts are found to be borne disproportionately by low-income and minority populations, an analysis must examine mitigation measures, offsetting benefits, and impacts of other system elements in accordance with FHWA Order 6640.23A, Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1998).

[1] Title VI states that "[n]o person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

[2] Disproportionately high and adverse effect on low-income and minority populations is defined in FHWA Order 6640.23A as (1) is predominately borne by a minority population and/or a low-income population; or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population. Adverse effects are defined in FHWA Order 6640.23A as the totality of significant individual or cumulative human-health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness, or death; air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion, or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of FHWA programs, policies, or activities.

Environmental Justice Plan and Preliminary Analysis

The *I-94 East-West Corridor Study Environmental Justice Plan and Preliminary Analysis* reflects WisDOT's interest in environmental justice for all stakeholders affected by or interested in the planning and implementation of the I-94 East-West Corridor Study. The purpose of this document is twofold. The document presents:

- Existing demographic information present in the I-94 East-West Corridor study area
- A plan for assessing environmental justice data and impacts, and a plan for engaging environmental justice populations in the study area

This document provides a preliminary environmental justice population analysis through identifying existing environmental justice populations in the study corridor. The next step is to analyze adverse or beneficial impacts to minority or low-income populations in those areas compared to non-minority or low-income populations. These impacts (both direct and indirect) will be documented thoroughly in the I-94 East-West Corridor Study Draft Environmental Impact Statement (Draft EIS).

WisDOT used data available from the United States Census Bureau to identify potential environmental justice populations in the I-94 East-West Corridor study area. A series of maps and tables provide an overview of the various social and economic groups present in the study corridor. The preliminary environmental justice analysis includes 4 study bands to identify potential environmental justice populations in the study corridor:

- Within a 1,000 foot corridor of centerline I-94
- Within a 0.5-mile corridor
- Within a 1-mile corridor
- Travel dispersion corridor (outline based on how far away from I-94 one must go before taking a route other than I-94 to reach a destination outside of the study area)

WisDOT obtained 2000 and 2010 demographic information for each corridor noted above. To serve as a point of comparison, demographic information from the following entities was obtained:

- State of Wisconsin
- Milwaukee County
- Aggregate of the four municipalities that are in the project area: Cities of Milwaukee, Wauwatosa, and West Allis and the Village of West Milwaukee
- City of Milwaukee
- City of Wauwatosa
- City of West Allis
- Village of West Milwaukee

Preliminary analysis on the presence of low-income, minority, and other populations within these specific geographic proximities is found in this document. There are environmental justice populations found throughout the I-94 East-West Corridor and concentrated within certain regions of the study area. This document identifies these areas while the Draft EIS will discuss specific impacts to these environmental justice populations.

Within the travel dispersion corridor, 1-mile corridor, 0.5-mile corridor, and 1,000-foot corridor of I-94, minorities made up 47.4 percent, 42.5 percent, 38.5 percent, and 36.5 percent of the population in 2010, respectively. Thus, the areas closer to I-94 contain a lesser percentage of minority population than areas further away from I-94. The minority population in Milwaukee County grew 15.4 percent between 2000 and 2010, to 39.4 percent. The travel dispersion corridor minority population grew 5.4 percent between 2000 and 2010 while within study area communities, minority population has experienced differing

annual levels of growth from 10 percent in the City of Milwaukee (55.2 percent total minority population) to approximately 119 percent in the City of West Allis (13.3 percent total minority population).

In the travel dispersion corridor in 2010, approximately 27 percent of the population is considered Hispanic or Latino[3] of any race, while 25 percent of the population is African American. The African American population in the travel dispersion corridor is similar to that in Milwaukee County (27 percent); however, the percentage of Hispanic or Latino population in the study area is double that of the percentage in Milwaukee County (13 percent). In Milwaukee County, the largest minority population is African American at 26.8 percent of the population.

Based on 2010 Census data, the mean household income in the travel dispersion corridor was lower than the mean household income for Milwaukee County and all the individual communities within the study area. The percentage of persons living in poverty is greater in the travel dispersion corridor (31.0 percent) than it is in Milwaukee County (19.3 percent), City of Milwaukee (26.2 percent), West Allis (11.8 percent), Wauwatosa (4.9 percent), and West Milwaukee (16.7 percent).

Outreach

Additionally, this document lists the neighborhood and community groups, businesses, business organizations, churches, and schools the project team will reach out to as part of this study. Project staff will contact and arrange to meet with these stakeholders to inform them of the study, solicit information and input on the study, and to equip them with information regarding Public Information Meetings and other opportunities for their membership to provide input about the project. Post-meeting follow-up will include database additions for mailed and electronic newsletters to keep them informed of the project status and timeline.

[3] Population by race was taken from data indicating race alone or in combination with other races (Table P9 from SF1). As a result of these categories not being mutually exclusive, the population obtained by summing all of the racial categories may exceed the total population for any given area. It should also be noted that 'Hispanic' is an ethnic group and not a race category, and is expressed separately from race in the data. Thus, Hispanic persons are also White, Black, etc., in addition to being Hispanic. Total minority population was calculated as the sum of all non-white race groups, plus Hispanics indicating their race as 'White.'

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1 Purpose and Goals of the Environmental Justice Plan and Preliminary Analysis

This *I-94 East-West Corridor Environmental Justice Plan and Analysis* identifies and describes environmental justice populations and stakeholders within the I-94 East-West Corridor. A plan is provided as to conduct analysis to determine if there are disproportionately high and adverse effects of the project being borne by environmental justice populations. The results of this detailed analysis will be presented in the I-94 East-West Corridor Draft EIS.

1.1 Environmental Justice Background

The key regulations and policy directives behind environmental justice assessment requirements are Title VI of the Civil Rights Act of 1964 and Executive Order 12898 issued by President Clinton in 1994.

Title VI of the Civil Rights Act of 1964[4] prohibits intentional discrimination, as well as disparate impact discrimination, which results when a facially neutral policy has disparate impacts on protected population groups. To clarify and amplify the non-discrimination requirements of Title VI, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" in 1994.

Presidential Executive Order on Environmental Justice 12898 directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and/or low-income populations to the greatest extent practicable by law. The Executive Order states that, to the extent practicable and permitted by law, neither minority nor low-income populations may receive disproportionately high or adverse impacts as a result of a proposed project. The order also requires that representatives of any low-income or minority population that could be affected by the project be given the opportunity to be included in the impact assessment and public involvement process.

FHWA guidance on "Addressing Environmental Justice in Environmental Assessments/Environmental Impact Statements" outlines the elements and steps to be followed when preparing an EIS and requires the following steps:

- Identification of existing populations.
- Identification of coordination, access to information, and participation.
- Identification of disproportionately high and adverse effects.

As part of the Draft EIS WisDOT and FHWA will complete an environmental justice analysis to determine whether the proposed project has the potential to incur disproportionately high and adverse effects[5] upon minority or low-income populations.[6] If the high and adverse impacts are found to be borne

4 Title VI states that "(n)o person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

5 Adverse effects are defined in FHWA Order 6640.23A as the totality of significant individual or cumulative human-health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to the following: bodily impairment, infirmity, illness, or death; air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion, or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of FHWA programs, policies, or activities.

6 Disproportionately high and adverse effect on low-income and minority populations is defined in FHWA Order 6640.23 as follows: (1) is predominately borne by a minority population and/or a low-income population; or (2) will be suffered by the minority population and/or

disproportionately by low-income and minority populations, an analysis must examine mitigation measures, offsetting benefits, and impacts of other system elements in accordance with FHWA Order 6640.23A, *Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, issued in 2012.[7]

In addition, FHWA issued a memorandum in December 2011 providing guidance on the process to address environmental justice during the NEPA review, including documentation requirements. The memorandum supplements FHWA Technical Advisory 6640.8A, which provides guidance for documenting the potential social, economic, and environmental impacts considered in the selection and implementation of highway projects. The memorandum notes that environmental justice discussion in environmental documents should include the following:

- Identifying existing minority and low income populations.
- Explain coordination with, access to information, and participation of environmental justice populations.
- Identify disproportionately high and adverse effects (if applicable) on environmental justice populations

1.2 Purpose of Environmental Justice Plan and Preliminary Analysis

The *I-94 East-West Corridor Study Environmental Justice Plan and Preliminary Analysis* identifies a set of goals, recommended target audiences, and proposed deliverables. The plan also defines criteria to identify and communicate with minority persons and low-income persons located within the study area, as well as strategies to assess and mitigate potential impacts on those populations. Analysis will include close coordination with public outreach efforts and will document communication between WisDOT and leaders, groups, and individuals representing minority groups within the study area. Information, results of analyses, and feedback received from stakeholders will be documented and provided to the study team throughout the process.

1.3 Goals

Specific goals of the *I-94 East-West Corridor Study Environmental Justice Plan and Preliminary Analysis* include:

- Identifying and locating minority populations and/or low-income populations within the study area[8].
- Conducting outreach and building open lines of communication to engage minority and low-income stakeholders in discussion to identify interests, questions, concerns, and obtain feedback into the proposed project design.

The Environmental Justice analysis includes an outreach component and thus becomes closely tied with the Public Involvement effort.[9] The I-94 East-West study team anticipates that the efforts outlined in this plan will enhance the Public Involvement process and encourage interested parties to share ideas, expectations, and concerns for the project and future WisDOT projects, resulting in the best possible integrity of the project and well-being of all stakeholders.

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low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

[7] FHWA Order 6640.23A cancels FHWA Order 6640.23 which was issued in 1998.

[8] Minority populations and low-income populations are two distinct population categories. Executive Order 12898 applies to both categories independent of one another.

[9] See Appendix #4: I-94 East-West Corridor Study Public Involvement Plan

Results of this plan and preliminary analysis will assist the study team in determining if potential disproportionately high and adverse human health and environmental impacts may occur as a result of the I-94 East West Corridor project. This plan and preliminary analysis will be included as part of the Draft EIS on the CD in the back of that document.

2 Preliminary Analysis

2.1 Environmental Justice Populations

In order to meet specific requirements outlined in Executive Order 12898, WisDOT will conduct a preliminary analysis of the various demographic groups located near the study corridor and will include focused communication through grassroots outreach in the following general demographic groups. To determine the presence of minority and low-income populations in the study area, WisDOT used localized census tract, block group, and block data, supplemented by the study team's extensive public involvement program and other relevant data sources.

Minority – a person who is:

- Black/African American (having origins in any of the black racial groups of Africa)
- Hispanic or Latino (of Mexican, Puerto Rican, Cuban, South American, or other Spanish culture or origin, regardless of race)
- Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands)
- American Indian or Alaska Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition)
- Hawaiian Native or other Pacific Islander (people having origin in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islanders)
- Caucasian and any combination of the above (EJ, Title VI[10], Executive Order 12898)

Low-income – is defined as a household income at or below poverty guidelines. For example, in 2012, a family of four with two children under the age of 18 would be considered in poverty if the family's total income was less than $23,283 (U.S. census Bureau 2013)[11].

- Other indicators of low-income:
  - Child lunch vouchers (Executive Order 13045)[12]
  - Section 8 Housing

Other population groups not protected under the Executive Order or Environmental Justice but potentially affected by the proposed action:

- Persons with disabilities (Americans with Disabilities Act Amendment Act)[13]
- Elderly (Age Discrimination Act)[14]

[10] See Appendix #5: Title VI

[11] Income data is collected by the American community Survey (ACS). The ACS tracks local economic conditions annually rather than on a decennial basis like the U.S. Census. The U.S. Department of Health and Human Services (HHS) annually publishes poverty guidelines to determine financial eligibility for certain programs. The HS guidelines are a simplification of the U.S. Census Bureau's poverty thresholds for use for administrative purposes; for instance, determining financial eligibility for certain federal programs. According to the HHS guideline, in 2013 a household containing four persons was considered to be living in poverty if the total income of the family was less than $23,550. See Appendix #3 Census 2010 Definition of Subject Characters.

[12] See Appendix #6: Executive order 13045

[13] See Appendix #7 Americans with Disabilities Act – Amendment Act

[14] See Appendix #8: Age Discrimination Act

- Limited English Proficiency (Executive Order 13166)[15]
- Children
- Persons with zero vehicle ownership

2.2 Environmental Justice Analysis Areas

The I-94 East-West Corridor study area includes approximately 3.5 miles of I-94 freeway corridor from 70th Street (west limit) to 16th Street (east limit) (**Exhibit 1**). The study area also includes one system interchange (Stadium interchange) and five service interchanges along I-94 (the 68th/70th Street split diamond, Hawley Road, Mitchell Boulevard, 35th Street, and 25th/26th/28th Street).

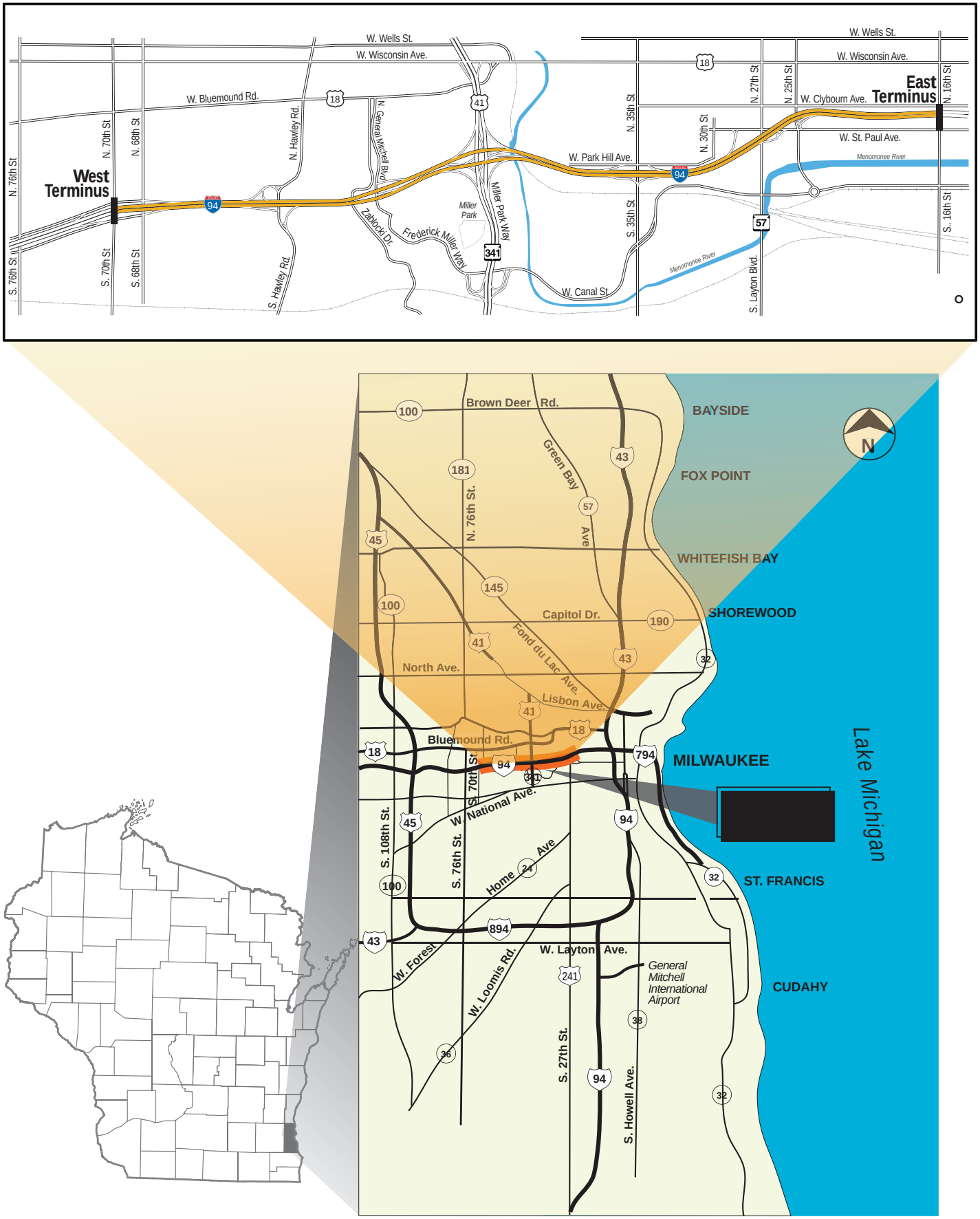
The preliminary environmental justice analysis includes four study bands to identify potential environmental justice populations in the study corridor:

- Within a 1,000 foot corridor of centerline I-94
- Within a 0.5-mile corridor
- Within a 1-mile corridor
- Travel dispersion corridor (outline based on how far away from I-94 one must go before taking a route other than I-94 to reach a destination outside of the study area)

Exhibit 2 shows the location of the study bands listed above.

This represents an initial look at demographic composition of the study area. Additional demographic data may be required, or the same data may be gathered for a larger area after the project's area of effect is better understood. This will be determined during initial outreach to environmental justice groups and as the initial range of alternatives are developed and evaluated.

[15] See Appendix #9: Executive Order 13166



U.S. Department of Transportation
Federal Highway Administration

Exhibit 1
Project Location Map

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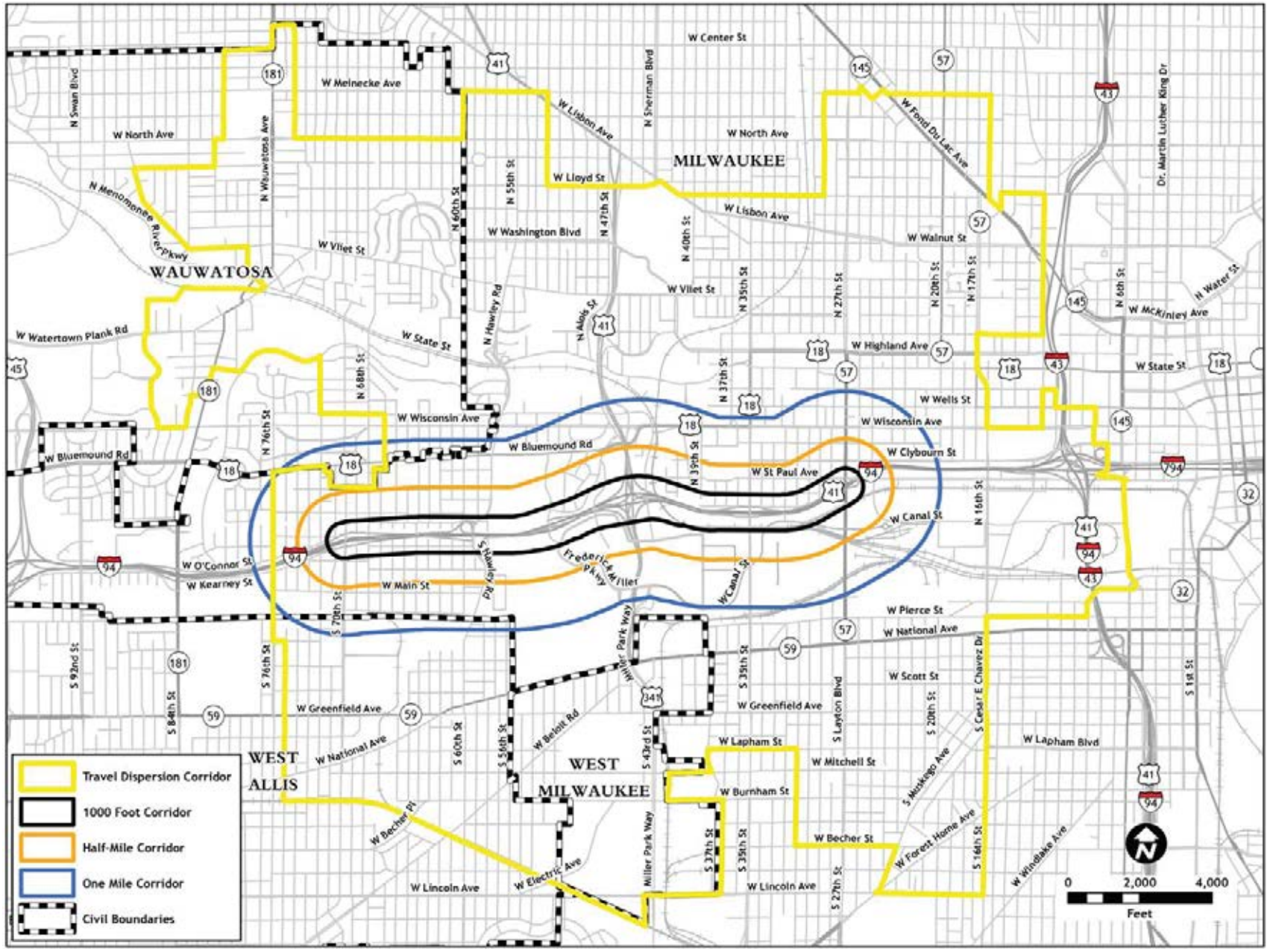

U.S. Department of Transportation
Federal Highway Administration

Exhibit 2
I-94 Corridor Study Areas

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3 Proposed Methodology

The I-94 East-West Corridor Study is surrounded by many different and distinct communities, neighborhoods, and organizations, thus the pool of stakeholders is large and diverse. Census information will initially be analyzed to determine stakeholder make-up and best identify and assess their needs. WisDOT's preliminary analysis will include but not be limited to identifying the following within the project limits:

- Low-income stakeholder census blocks
- Low-income rental property locations
- Minority populations
- Businesses
- Preferred contact person at each identified local government
- Churches
- Schools
- Cemeteries
- Community Organizations

Analysis will include a demographic profile of stakeholders, including 2010 census data and American Community Survey (ACS) data and documentation of issues and concerns raised by various stakeholders. In order to reasonably analyze the project data, all areas within the project area will be considered. Stakeholders who are not located directly within the limits designated for analysis may be identified through the Public Involvement process. Due to the interconnectedness between the Environmental Justice and Public Involvement, the Environmental Justice analysis may incorporate considerations of issues raised as part of the Public Involvement effort where appropriate.

While the primary objective of the Environmental Justice analysis is to assess the disproportionate impacts to certain populations resulting from proposed actions, it is important that the analysis also provides information on low-income and minority populations so that alternatives which address recurring community-wide problems can be developed. This approach includes both a qualitative and quantitative process of gathering stakeholder input on the potential impacts of alternatives identified during the EIS process, as well as data gathering using various demographic and economic data resources available at the regional, state, and federal levels.

The Environmental Justice Analysis will be completed in five phases. Phase I will identify and describe the stakeholders by defining a study area and gathering information about the people and organizations within it. Phase II will identify socio-economic factors present, beyond quantifiable data, within the study area. Phase III will identify and assess issues concerning Environmental Justice using public involvement feedback and calculating impacts for each alternative. Phase IV will analyze the effect of those impacts on minority and/or low income populations, and if those impacts are adverse, if they are proportionate or disproportionate to those experienced by the general public. Phase V links the Environmental Justice Analysis to public involvement efforts so that all stakeholders including minority and/or low income populations have the opportunity to participate in the EIS process.

This document will address Phase I (identify and describe stakeholders within the I-94 East-West Corridor); while the other four phases will be completed as part of the EIS process and discussed in the Draft EIS.

Phase I – Identify and describe stakeholders within the I-94 East-West Corridor

1. Develop a base map of the defined limits of the Environmental Justice study area.

2. Overlay the base map with the recommended initial distance of one mile radius around the study area to identify the range of potential schools, churches, residences, and other stakeholders within the Environmental Justice study area.
3. Determine the presence and estimate the size of the minority populations and/or low-income populations within the study limits.
4. Identify and give a brief demographic description of the minority populations and/or low-income populations within the Environmental Justice corridor limits and initial one mile radius.
5. Where appropriate, identify and give a brief description of communities within study limits.
6. Where appropriate, develop a community profile to include applicable and/or appropriate:
   - Neighborhood boundaries
   - Demographic information
   - Economic Data
   - Other pertinent data

Areas of interest to the Environmental Justice analysis will be identified through part of the PI team's outreach specialists and socioeconomic analysis efforts. These efforts include identification and consideration of the location and nature of neighborhoods and residents within the study limit, a brief overview of the local social history of the communities within the area, and the land use plans.

Phase II – Identify and define the socio-economic factors of communities along the corridor

Pursuant to WisDOT's policy and procedures, analysis of the socio-economic factors requires an analysis that extends beyond quantifiable aspects to non-quantifiable aspects such as a community's values and history.

Analysis of socio-economic factors will be addressed as part of the environmental impact statement and will include from this effort, but not to be limited to: neighborhood and community cohesion, regional economic impacts, and public and private development plans.

Phase III - Identify and assess issues, concerns of Environmental Justice and stakeholder populations within the corridor study area

1. Using information gathered from Public Involvement and information collected above, WisDOT will identify and describe issues of concern or controversy within the minority communities and low-income communities.
2. Using the range of alternatives, data collected, issues identified, and described effects to minority populations and low-income populations resulting from the reasonable alternative developed and presented at the public information hearings.

Phase IV – Analysis of impacts to minority populations and/or low income populations

Assess whether effects to the minority populations and/or low-income populations are beneficial or adverse.

Review considerations:

- Are the effects proportionate or disproportionate to those experienced by the general population?
  1. What are the effects?
  2. Direct
  3. Indirect

4. Cumulative

- Are there any disproportionately high or adverse effects?
    1. Predominantly borne by minority or traditionally underserved populations
    2. What are the comparative effects experienced by minority or low-income populations and are they more severe or greater in magnitude than the adverse effects suffered by non-minority and/or non-traditionally underserved?
- Are any of the minorities or low-income populations protected under the Title VI of the 1964 Civil Rights Act (which prohibits discrimination on the basis of race, color, or country of origin)?
- Consider the Age Discrimination Act or Americans with Disabilities Act as noted in the Environmental Justice Impact Evaluation.
- Provide data, support, and brief analysis for consideration in the development of the EIS Review discussion of the potential mitigation and enhancement efforts to address disproportionately high and adverse effects to Environmental Justice populations.

Phase V –Environmental Justice link to Public Involvement

The Environmental Justice component is closely related to Public Involvement on the I-94 East-West Corridor Study project, as the study's communication efforts will strive to ensure the full and fair participation of minority populations and low-income groups to provide input to the project team. A variety of successful tools and methods for achieving maximized public involvement from all parties have been developed through previous mega-project studies in the Southeast Region including those completed as part of the Marquette Interchange Project, I-94 North-South Freeway Project, and Zoo Interchange Project. Public Involvement continues to serve a vital role to educate citizens about the transportation development process and increase the likelihood of implementation of an alternative through informed consent from all groups.

4 Environmental Justice Preliminary Analysis

4.1 Terminology

Below is an example of actual data as it will be presented throughout this document.

A.

Black/African American	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
B. Total Population	253,764	237,761	28,311	2,076	495	2,199	618	428	428	242,464	736	1,952	5,844	29,852
C. % of population	26.78%	39.98%	30.96%	4.47%	3.30%	3.64%	5.89%	10.05%	10.05%	34.35%	20.60%	21.90%	28.30%	24.64%

Source: 2010 Census

A. The headings refer to areas to be researched. For example, the *Half-Mile Corridor* heading refers to just the population that is located within a half-mile corridor around I-94.

B. The *Total Population* row refers to the population of the group represented in the table. In this example, the African American or Black population within a half-mile corridor around I-94 is 1,952.

C. The *Percentage by Race Type* is the percentage of the total population that the value in the *Population* column represents. For example, 21.9% of the population within a half-mile corridor around I-94 is African American or Black.

The terminology used in this document is intended to have the same definitions used in the census. Terms used such as "Hispanic", "family", and "poverty" have the same meaning as used in the census.[16]

The following tables describe demographic and economic data provided in the 2010 Census and ACS. For race and ethnicity categories, Census blocks were the geographic entity used. For economic categories Census tracts were used as they are the smallest geographic entity used to report economic data. The following exhibits and tables display actual counts and percentages of select populations within each Census geographic entity (either block or tract).

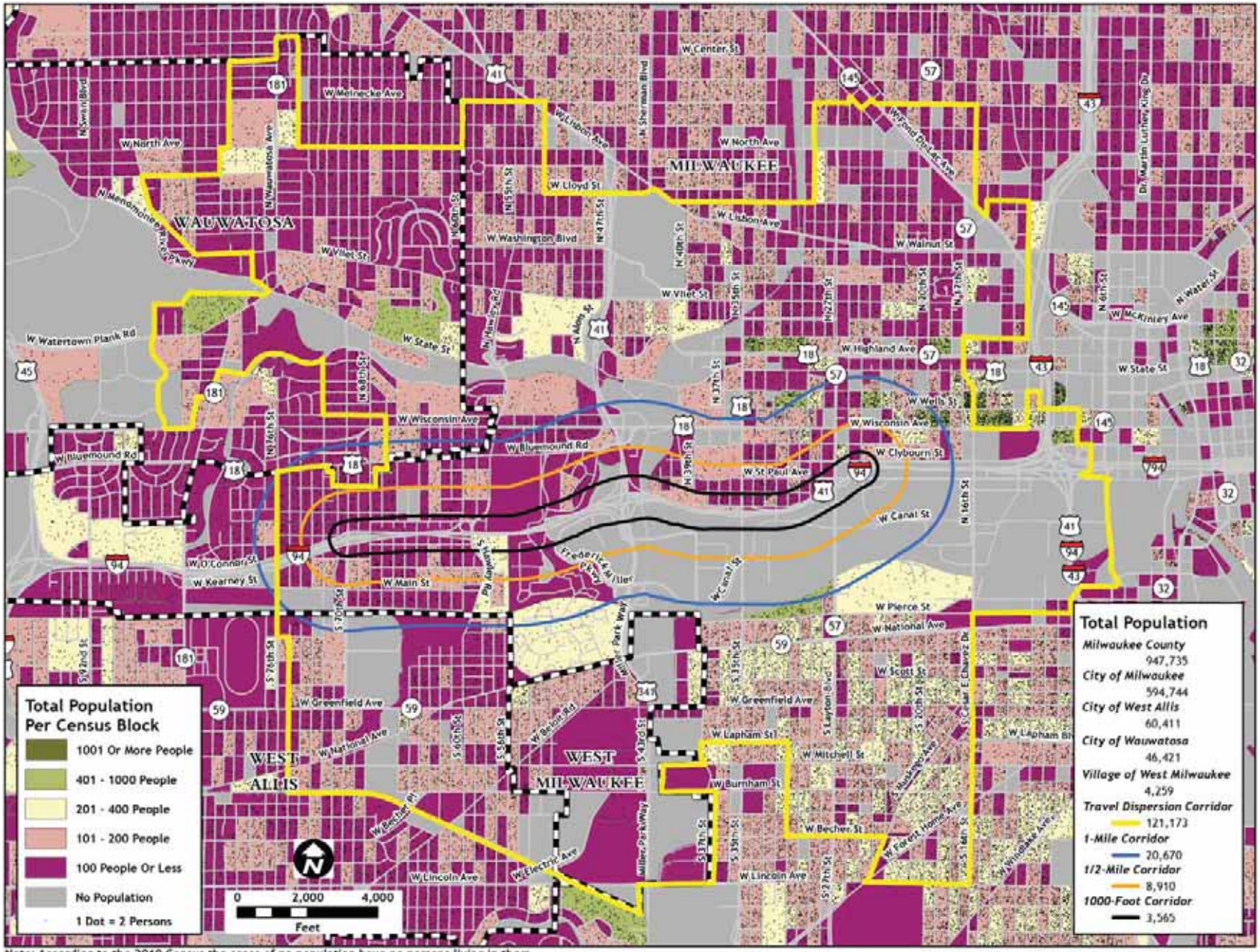
4.2 General Population

Exhibit 3 shows the total population of each census block within the travel dispersion corridor (travel dispersion corridor on the map). The blocks with the most population are located along Highland Avenue, Wells Street, Wisconsin Avenue near Marquette University, located north of I-94 and east of the Stadium Interchange. Also, due to its industrial nature, the Menomonee Valley, south of I-94 and east of the Stadium Interchange, has no population. **Exhibit 3** illustrates the areas without population in grey.

4.3 Race and Ethnicity

Population by race was taken from data indicating race alone or in combination with other races (2010 Census Table DP-1 from SF1). As a result of these categories not being mutually exclusive, the population obtained by summing all of the racial categories may exceed the total population for any given area. It should also be noted that 'Hispanic' is an ethnic group and not a race category, and is expressed separately from race in the data. Thus, Hispanic persons are also White, Black, etc., in addition to being Hispanic. Total minority population was calculated as the sum of all non-white race groups.

[16] See Appendix #3: Census 2010 Definition of Subject Characteristics



Note: According to the 2010 Census the areas of no population have no persons living in them.

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Exhibit 3
Total Population In I-94 Corridor

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Demographics within the four bands, 1,000 foot, 0.5 mile, 1.0 mile, and travel dispersion corridor have been identified and compared to the demographics and economics of the surrounding cities, Milwaukee County, and the State of Wisconsin. The data depicted on the following pages represent various sub-groups of the population.

Race and Ethnicity Summary	State of Wisconsin	Milwaukee County	City of Milwaukee	City of Wauwatosa	City of West Allis	Village of West Milwaukee	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
White/Caucasian Total Population & Percentage by Race Type	4,902,067 86.2%	574,656 60.6%	266,270 44.8%	41,593 89.6%	52,396 86.7%	2,954 69.4%	2,262 63.4%	5,478 61.5%	11,892 57.5%	63,722 52.6%
Black or African American Total Population & Percentage by Race Type	359,148 6.3%	253,764 26.8%	237,761 40.0%	2,076 4.5%	2,199 3.6%	428 10.1%	736 20.6%	1,952 21.9%	5,844 28.3%	29,852 24.6%
American Indian or Alaska Native Total Population & Percentage by Race Type	54,526 1.0%	6,808 0.7%	4,692 0.8%	139 0.3%	648 1.1%	37 0.9%	44 1.2%	90 1.0%	223 1.1%	1,335 1.1%
Asian Total Population & Percentage by Race Type	129,234 2.3%	32,422 3.4%	20,847 3.5%	1,289 2.8%	1,231 2.0%	138 3.2%	167 4.7%	383 4.3%	702 3.4%	5,850 4.8%
Hawaiian Native or other Pacific Islander Total Population & Percentage by Race Type	1,827 0.0%	363 0.0%	241 0.0%	28 0.1%	19 0.0%	2 0.1%	2 0.1%	4 0.0%	13 0.1%	53 0.0%
Hispanic Total Population & Percentage by Race Type	336,056 5.9%	126,039 13.3%	102,985 17.3%	1,450 3.1%	5,770 9.6%	1,098 25.8%	498 14.0%	1,327 14.9%	2,655 12.8%	32,593 26.9%
Other Race Alone Total Population & Percentage by Race Type	135,687 2.4%	51,429 5.4%	44,647 7.5%	296 0.6%	2,155 3.6%	519 12.2%	210 5.9%	571 6.4%	1,156 5.6%	15,447 12.8%
Two or More Races Total Population & Percentage by Race Type	104,317 1.8%	28,293 3.0%	20,286 3.4%	1,000 2.2%	1,763 2.9%	181 4.3%	144 4.0%	432 4.9%	840 4.1%	4,914 4.1%

4.3.1 White/Caucasian Population

The following table provides data on the White/Caucasian population in and near the I-94 East-West Corridor study area.

White	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	574,656	266,270	39,002	41,593	13,603	52,396	8,163	2,954	2,954	363,213	2,262	5,478	11,892	63,722
% of population	60.63%	44.77%	42.65%	89.60%	90.80%	86.73%	77.86%	69.36%	69.36%	51.46%	63.40%	61.50%	57.50%	52.59%

The following chart provides a visual representation of the White/Caucasian Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

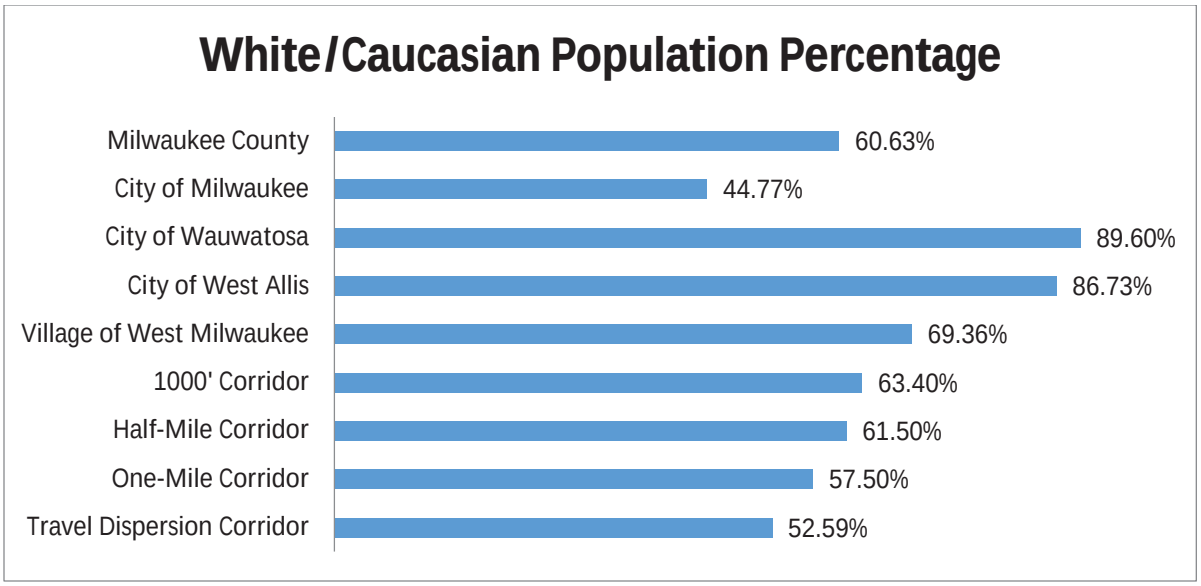
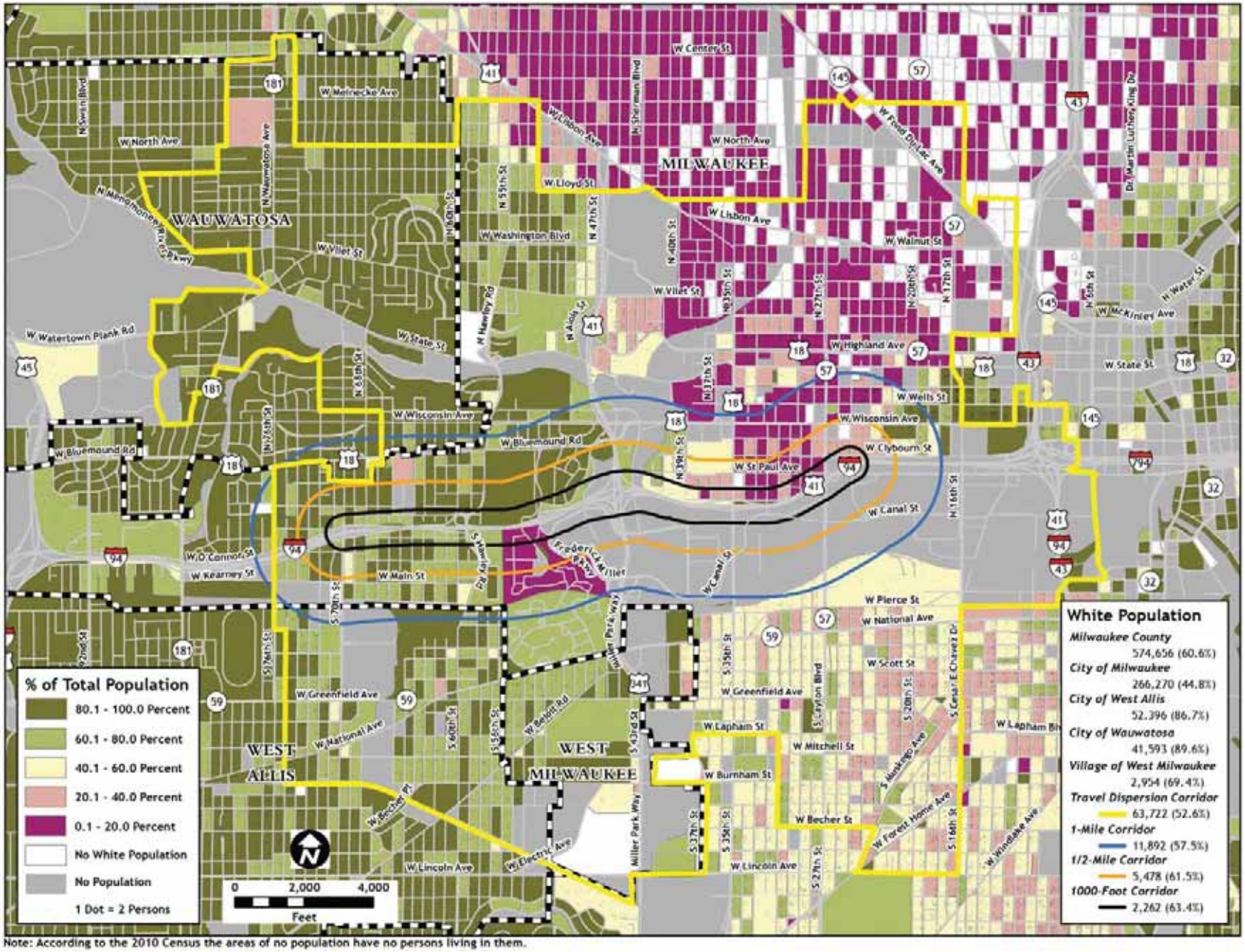


Exhibit 4 illustrates where white populations live within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 61 percent of the population identifies themselves as White/Caucasian. Most of the census blocks within the travel dispersion corridor containing 60.1 to 100.0 percent whites are located west of US 41 on both sides of I-94.



Note: According to the 2010 Census the areas of no population have no persons living in them.

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Exhibit 4
White Population Alone In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_4_WhitePopulationAlone_v4.ai 08.12.13 mjl

4.3.2 Minority Population

The following table provides data on the total minority population in and near the I-94 East-West Corridor study area.

Minority	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	373,079	328,474	52,447	4,828	1,378	8,015	2,321	1,305	1,305	342,622	1,303	3,432	8,778	57,451
% of population	39.37%	55.23%	57.35%	10.40%	9.20%	13.27%	22.14%	30.64%	30.64%	48.54%	36.50%	38.50%	42.50%	47.41%

The following chart provides a visual representation of the Minority Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

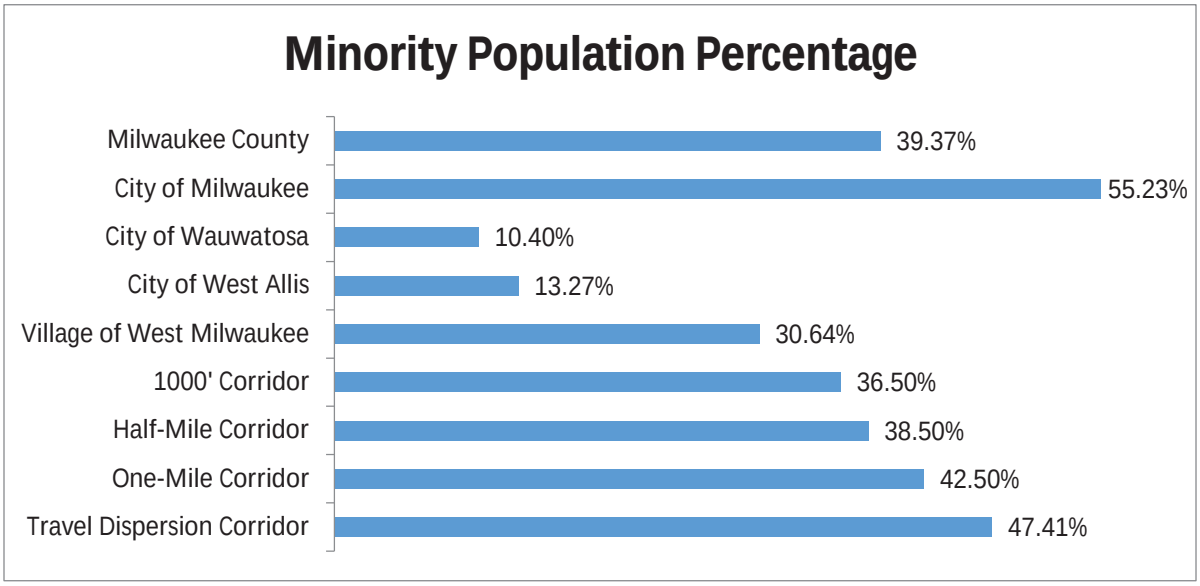

Exhibit 5 illustrates where minority populations live within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 39 percent of the population identifies themselves as Minority. Most of the census blocks containing 60.1 percent to 100.0 percent minorities are located east of US 41 and north of I-94. Most of the blocks in the area east of WIS 341(Miller Park Way) and south of I-94 contain 40.1 to 60.0 percent minorities.

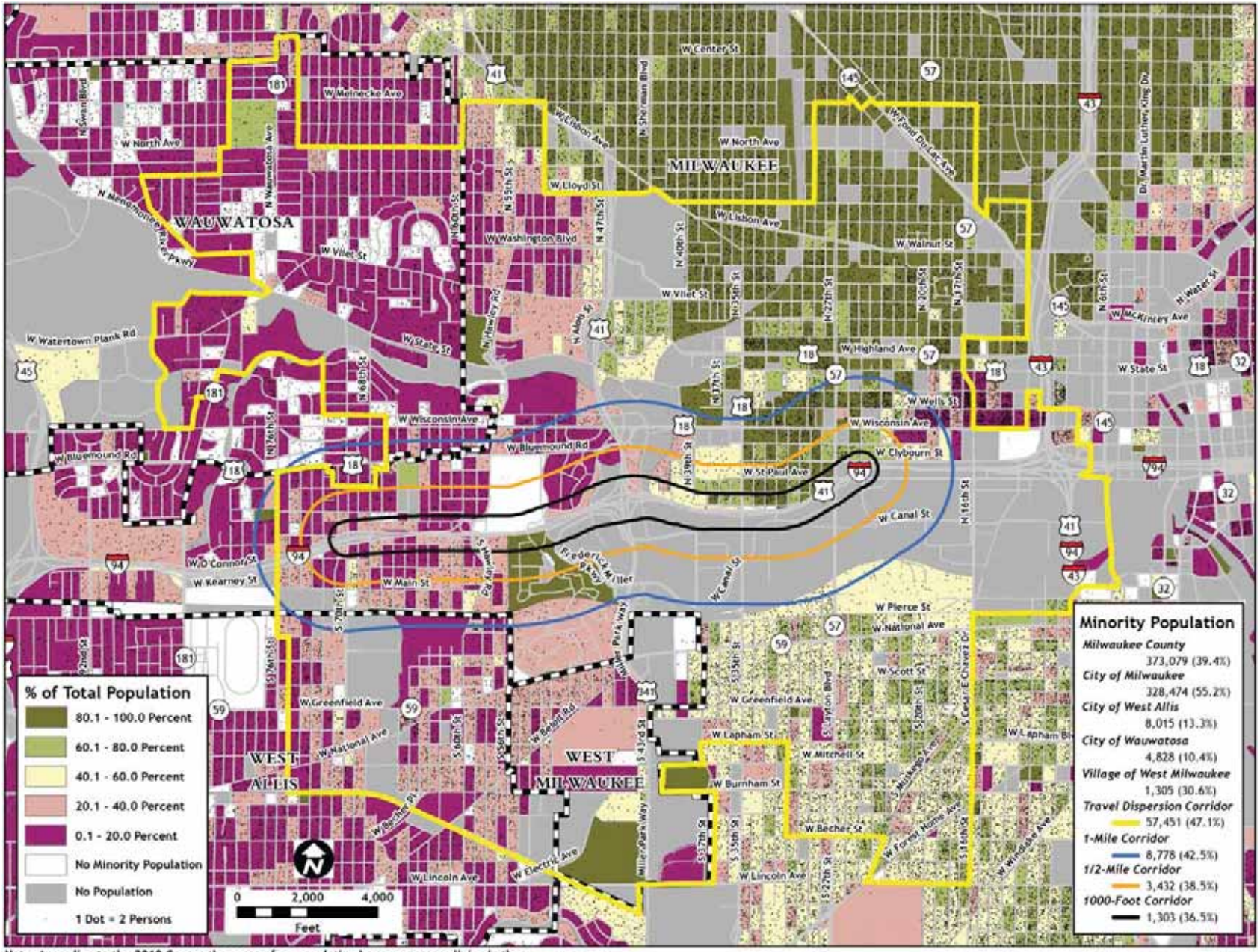

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Exhibit 5
Minority Population In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_5_MinorityPopulation_v5.ai 08.12.13 mjl

4.3.3 Black or African American Population

The following table provides data on the Black/African American population in and near the I-94 East-West Corridor study area.

Black/African American	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	253,764	237,761	28,311	2,076	495	2,199	618	428	428	242,464	736	1,952	5,844	29,852
% of population	26.78%	39.98%	30.96%	4.47%	3.30%	3.64%	5.89%	10.05%	10.05%	34.35%	20.60%	21.90%	28.30%	24.64%

The following chart provides a visual representation of the Black or African American Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

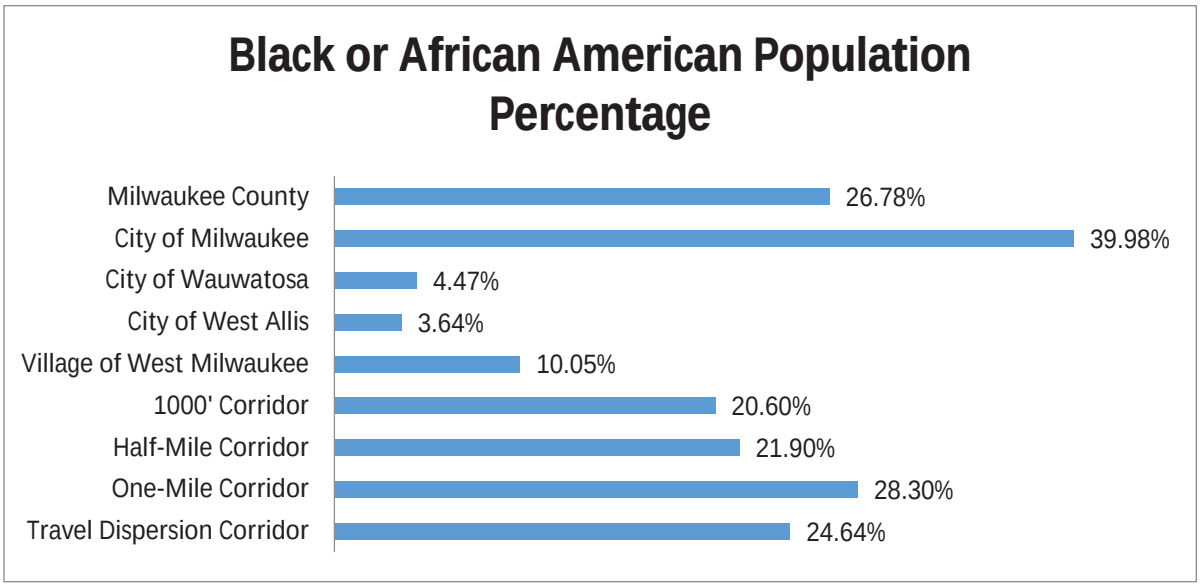
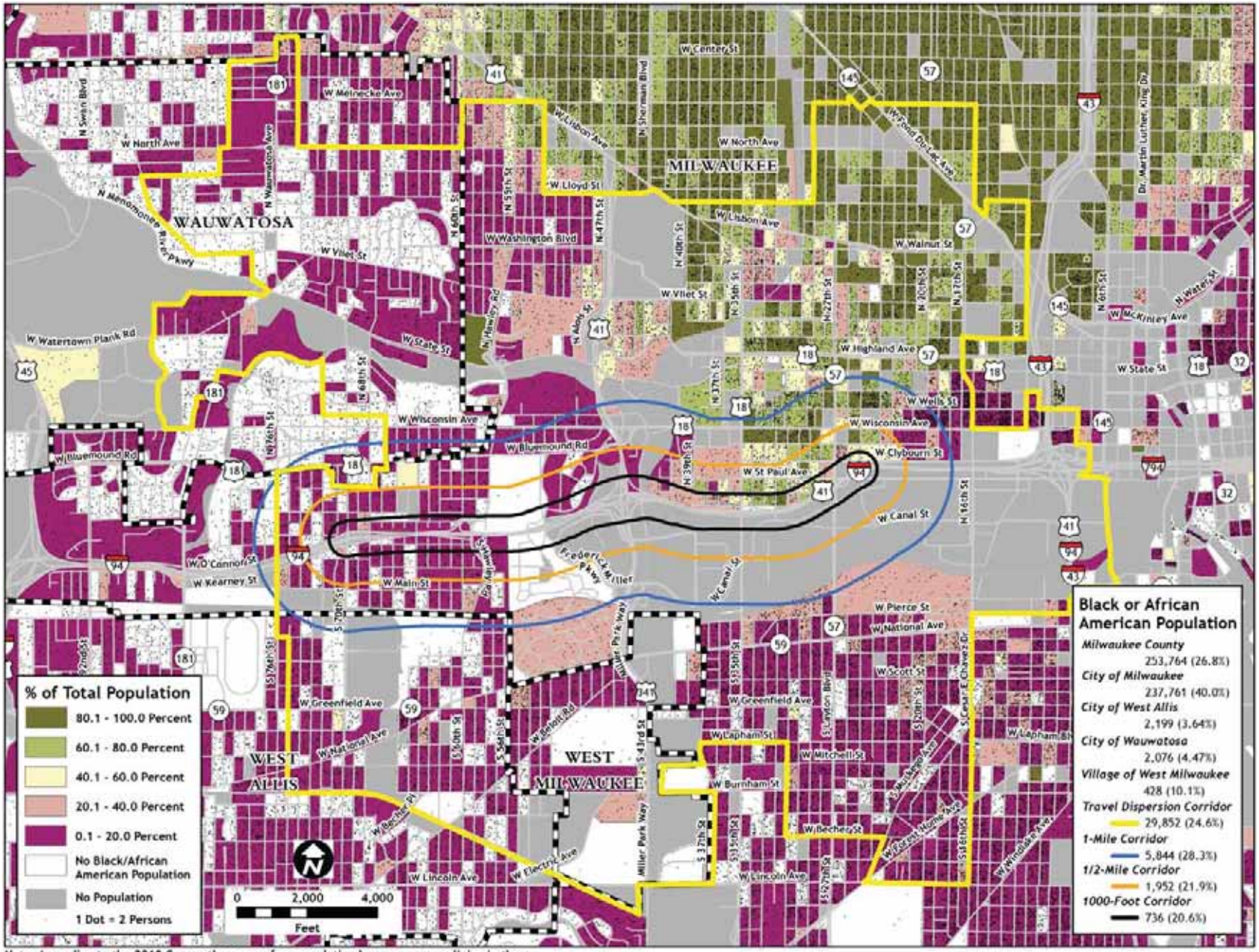


Exhibit 6 illustrates where Black or African American populations live within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 22 percent of the population identifies themselves as Black or African American. Most of the census blocks containing 60.1 percent to 100.0 percent Blacks or African Americans are located east of US 41 and north of I-94.



Note: According to the 2010 Census the areas of no population have no persons living in them.

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Exhibit 6
Black or African American Population Alone In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_6_BlackAfricanPopulation_v4.ai 8.12.13 mjl

4.3.4 American Indian or Alaska Native Population

The following table provides data on the American Indian or Alaska Native population in and near the I-94 East-West Corridor study area.

American Indian or Alaskan Native	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	6,808	4,692	1,078	139	50	648	170	37	37	5,516	44	90	223	1,335
% of population	0.72%	0.79%	1.18%	0.30%	0.33%	1.07%	1.62%	0.87%	0.87%	0.78%	1.23%	1.01%	1.08%	1.10%

The following chart provides a visual representation of the American Indian or Alaska Native Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

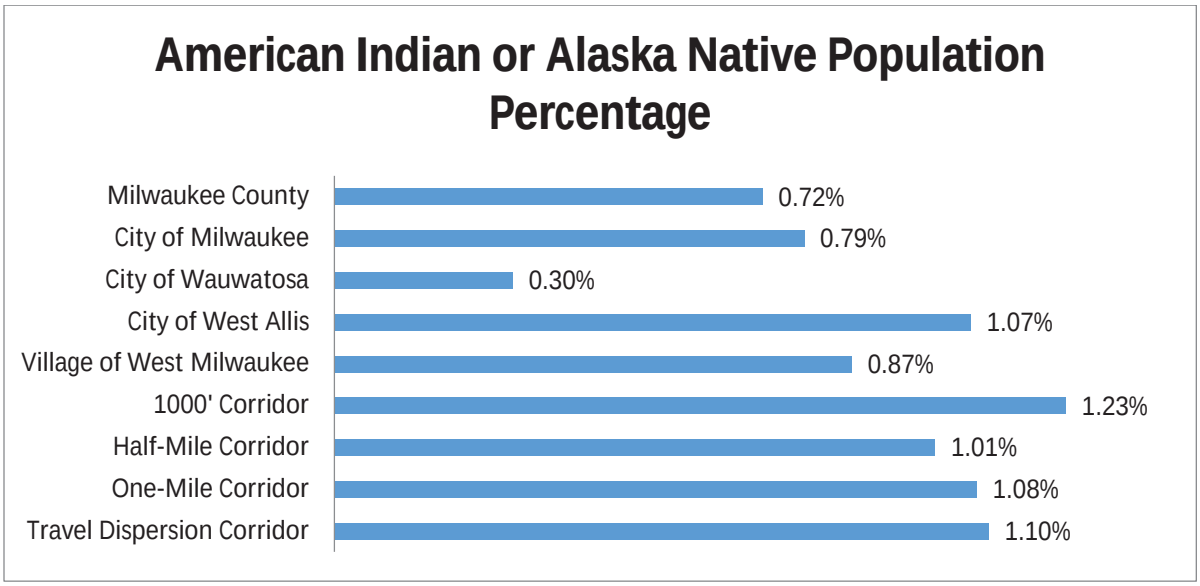

Exhibit 7 illustrates where American Indian or Alaska Native populations live within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 1 percent of the population identifies themselves as American Indian or Alaska Native. There are no blocks where American Indian or Alaska Native populations make up more than 20.0 percent of the population; however, generally, there are more blocks containing 0.1 to 20.0 percent south of I-94.

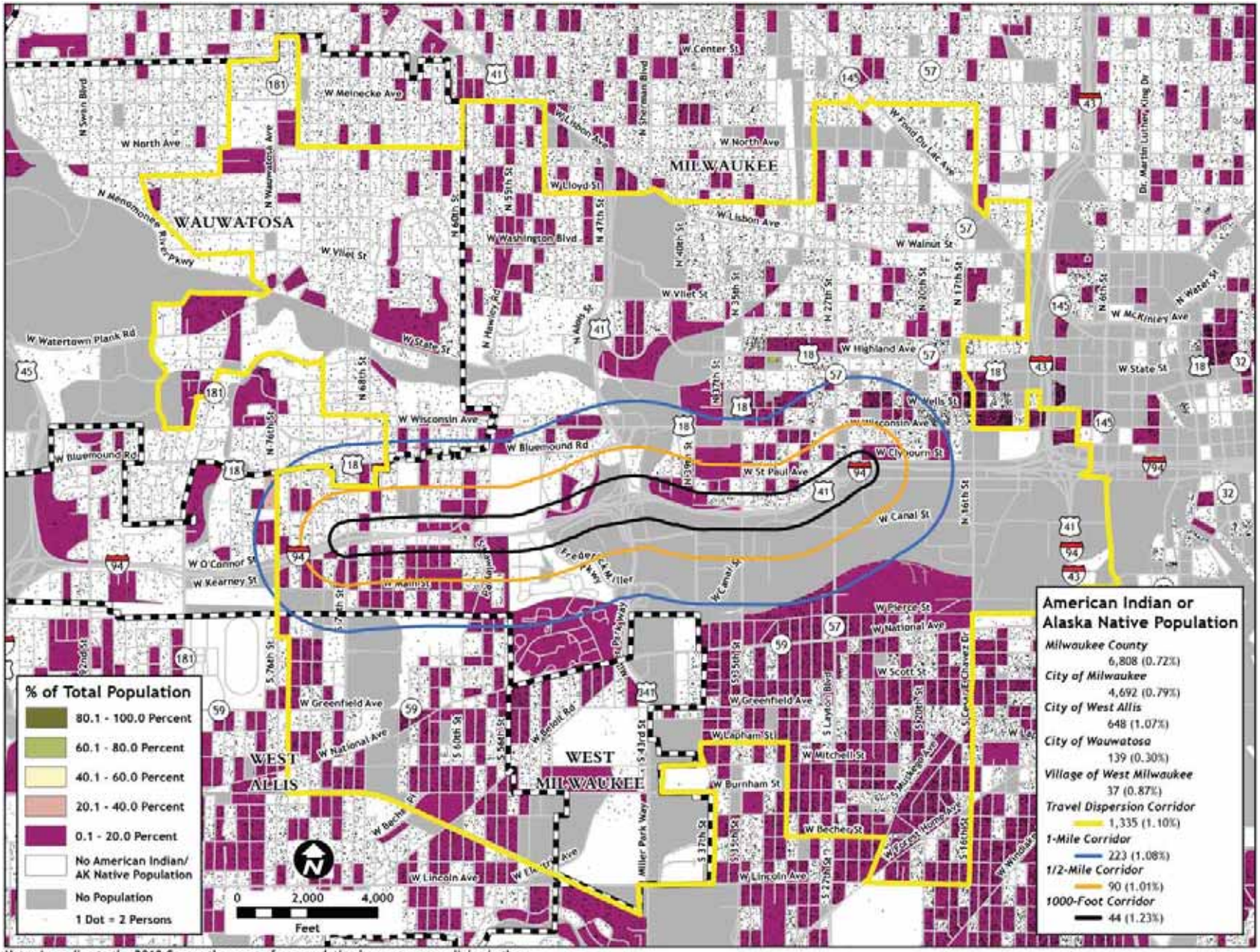

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Exhibit 7
American Indian or Alaskan Native Population Alone In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_7_AmericanIndianPopulation_v4.ai 08.12.13 mjl

4.3.5 Asian Population

The following table provides data on the Asian population in and near the I-94 East-West Corridor study area.

Asian	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	32,422	20,847	5,116	1,289	407	1,231	189	138	138	23,505	167	383	702	5,850
% of population	3.42%	3.51%	5.59%	2.78%	2.72%	2.04%	1.80%	3.24%	3.24%	3.33%	4.68%	4.30%	3.39%	4.83%

The following chart provides a visual representation of the Asian Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

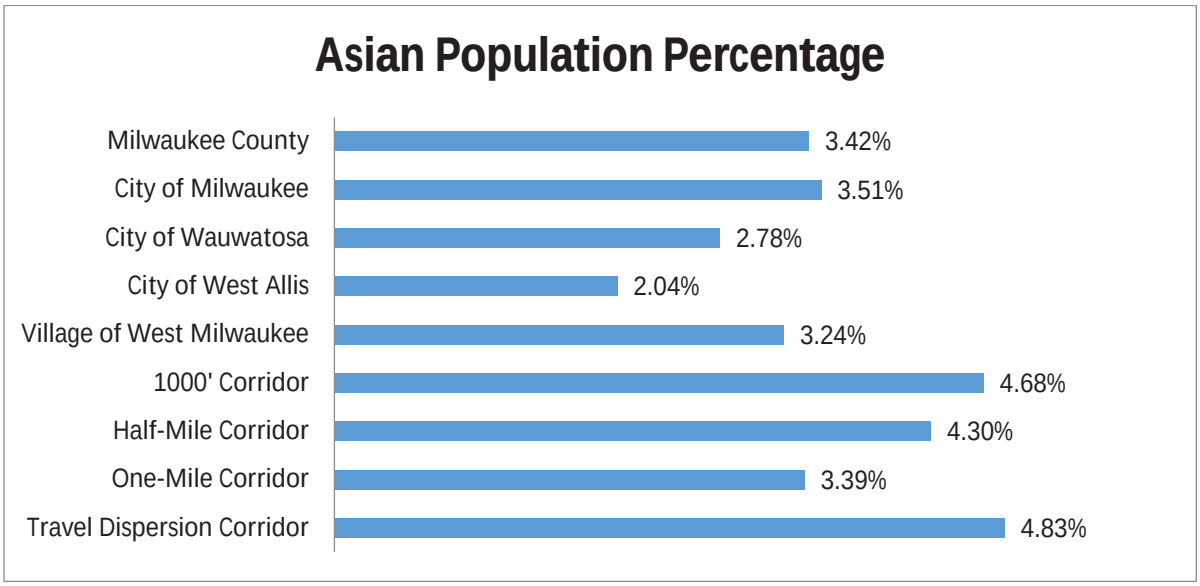

Exhibit 8 illustrates where American Asian populations live within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 4 percent of the population identifies themselves as Asian. Asian populations are generally evenly spread throughout the corridor and in most cases make up less than 20.1 percent of each block. There is a population cluster of multiple blocks with populations over 40.1 percent located south of Lisbon Avenue and north of Vliet Street between 35th Street and 27th Street.

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Exhibit 8
Asian Population Alone In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_8_AsianPopulationAlone_v4.ai 08.12.13 mjl

4.3.6 Hispanic or Latino Population

The following table provides data on the Hispanic or Latino population in and near the I-94 East-West Corridor study area. It should be noted that 'Hispanic' is an ethnic group and not a race category, and is expressed separately from race in the data. Thus, Hispanic persons are also White, Black, etc., in addition to being Hispanic. Total minority population was calculated as the sum of all non-white race groups, plus Hispanics indicating their race as 'White.'

Hispanic or Latino Alone	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	126,039	102,985	29,221	1,450	455	5,770	1,819	1,098	1,098	111,303	498	1,327	2,655	32,593
% of population	13.30%	17.32%	31.95%	3.12%	3.04%	9.55%	17.35%	25.78%	25.78%	15.77%	14.00%	14.90%	12.80%	26.90%

The following chart provides a visual representation of the Hispanic or Latino Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

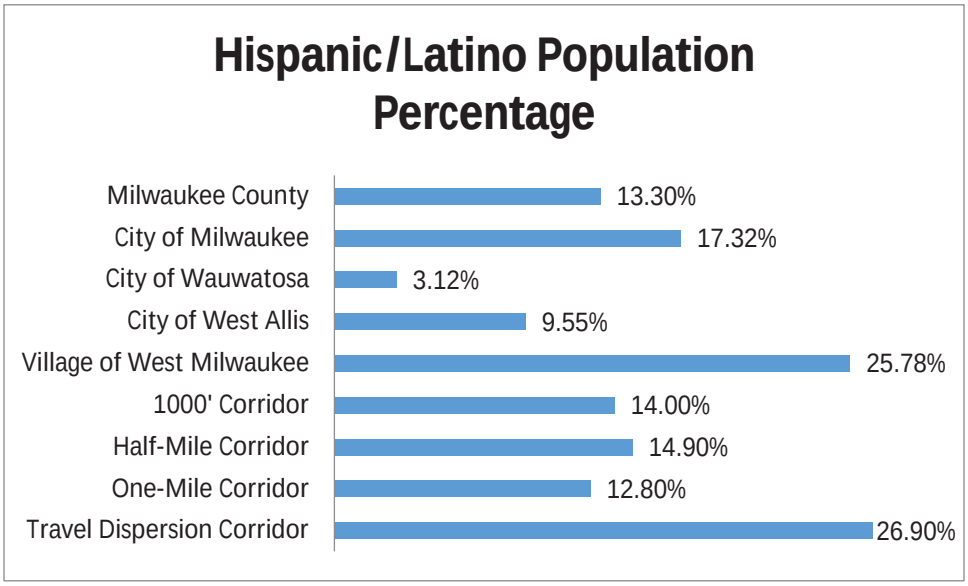
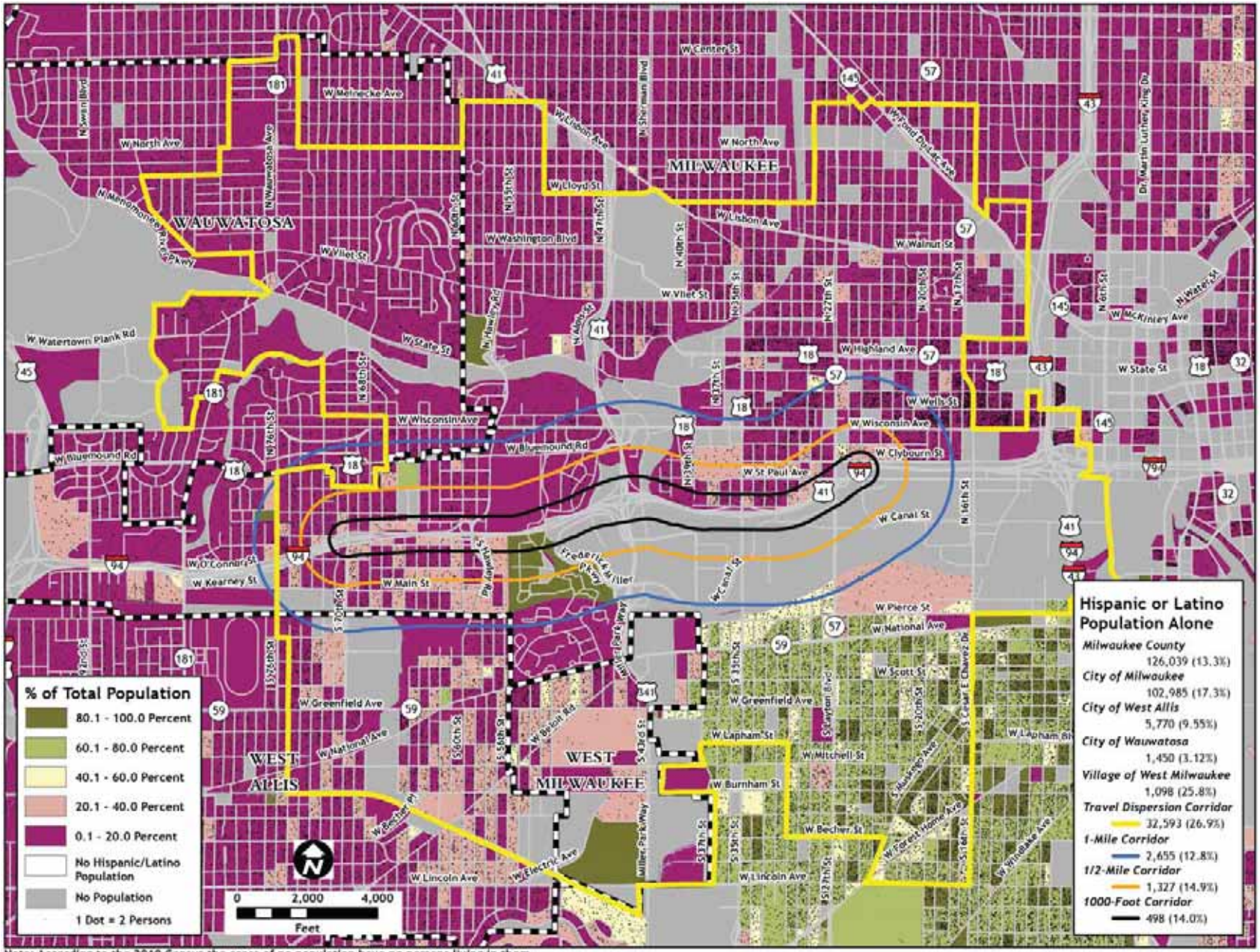


Exhibit 9 illustrates where Hispanic or Latino populations live within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 15 percent of the population identifies themselves as Hispanic or Latino. Hispanic and Latino populations can be found in nearly every block across the study area at some capacity. The area of highest Hispanic or Latino concentration is east of WIS 341 (Miller Park Way) and south of I-94. Most of the blocks in this area are 60.1 to 100.0 percent Hispanic or Latino.



Note: According to the 2010 Census the areas of no population have no persons living in them.

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Exhibit 9

Hispanic or Latino Population Alone In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_9_HispanicLatinoPopulation_v3.ai 08.12.13 mjl

4.3.7 Hawaiian Native and other Pacific Islander Population

The following table provides data on the Hawaiian Native and other Pacific Islander population in and near the I-94 East-West Corridor study area.

Hawaiian or Pacific Islander	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	363	241	41	28	4	19	6	2	2	290	2	4	13	53
% of population	0.04%	0.04%	0.04%	0.06%	0.03%	0.03%	0.06%	0.05%	0.05%	0.04%	0.05%	0.04%	0.06%	0.04%

The following chart provides a visual representation of the Hawaiian Native or other Pacific Islanders Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

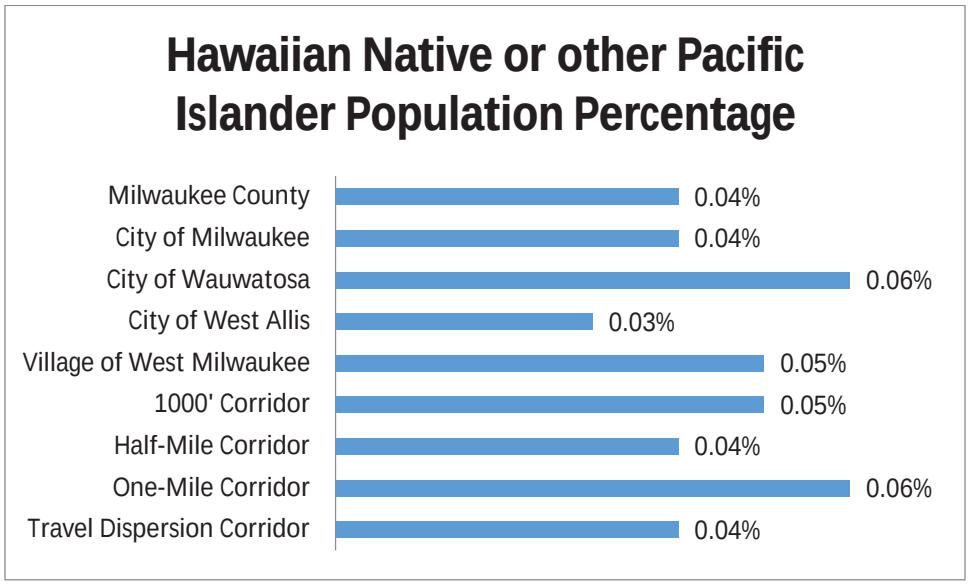

Exhibit 10 illustrates where Native Hawaiian or other Pacific Islander populations are located within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 0.04 percent of the population identifies themselves as Hawaiian Native or Other Pacific Islander. There are a two small population clusters with multiple blocks showing 0.1 to 20.0 percent Native Hawaiian or other Pacific Islander east of US 41 and WIS 341 (Miller Park Way). The clusters are located along Wisconsin Avenue between 27th Street and 16th Street and National Avenue between 20th Street and 16th Street.

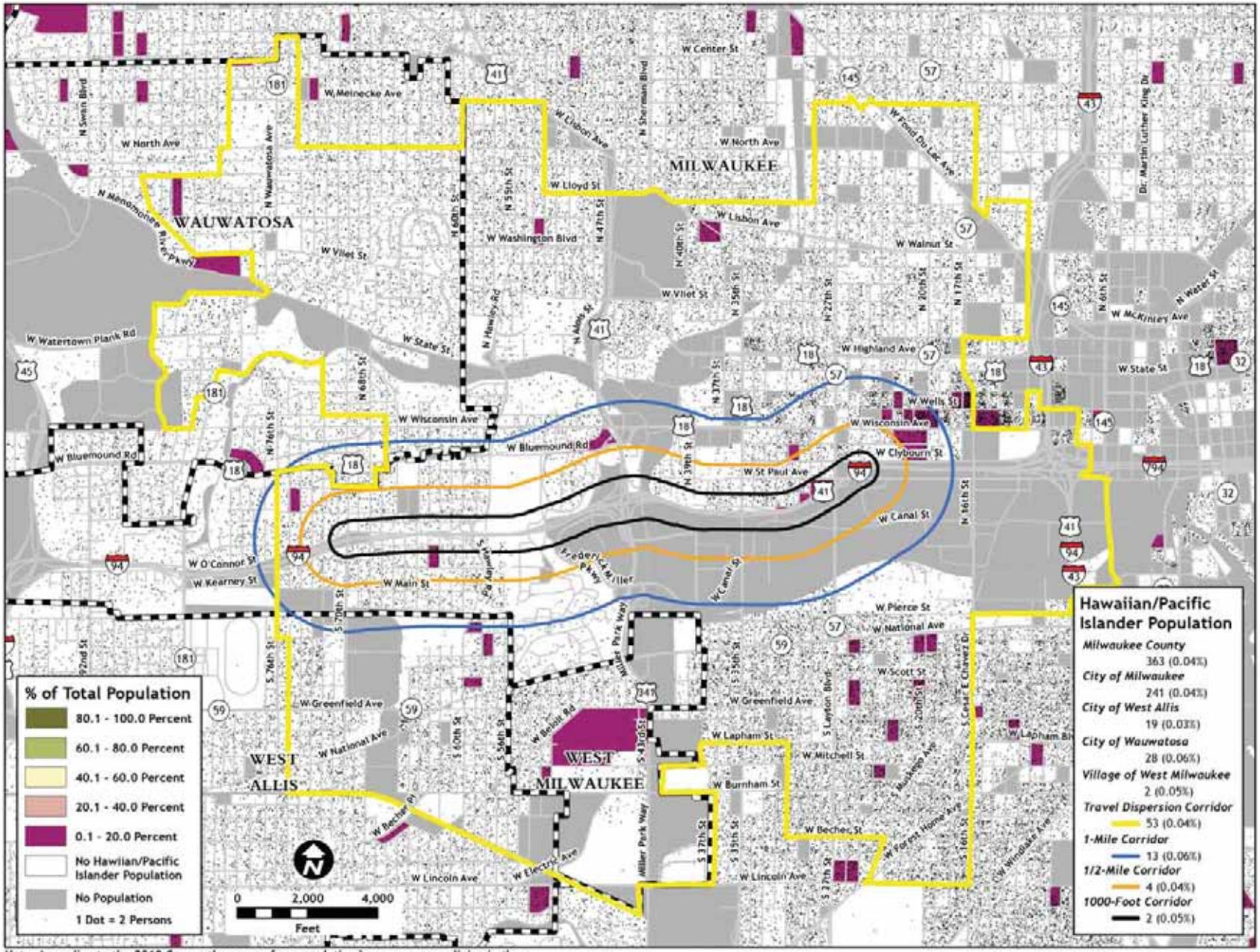

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Exhibit 10
Hawaiian Native or other Pacific Islander Population Alone in I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_10_Pacific_Islander_v3.ai 08.12.13 mjl

4.3.8 Some Other Race Population

The following table provides data on the Some Other Race population in and near the I-94 East-West Corridor study area. Some Other Race populations include all other Census responses not included in the "White," "Black or African American," "American Indian and Alaska Native," "Asian," and "Hawaiian and other Pacific Islander" race categories described above. Respondents provided write-in entries such as multiracial, mixed, interracial, or a Hispanic/Latino group (for example Mexican, Puerto Rican, or Cuban) in the Some Other Race category.

Some Other Race	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	51,429	44,647	14,050	296	75	2,155	803	519	519	67,017	210	571	1,156	15,447
% of population	5.43%	7.51%	15.36%	0.64%	0.50%	3.57%	7.66%	12.19%	12.19%	9.49%	5.89%	6.41%	5.59%	12.75%

The following chart provides a visual representation of the Some Other Race Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

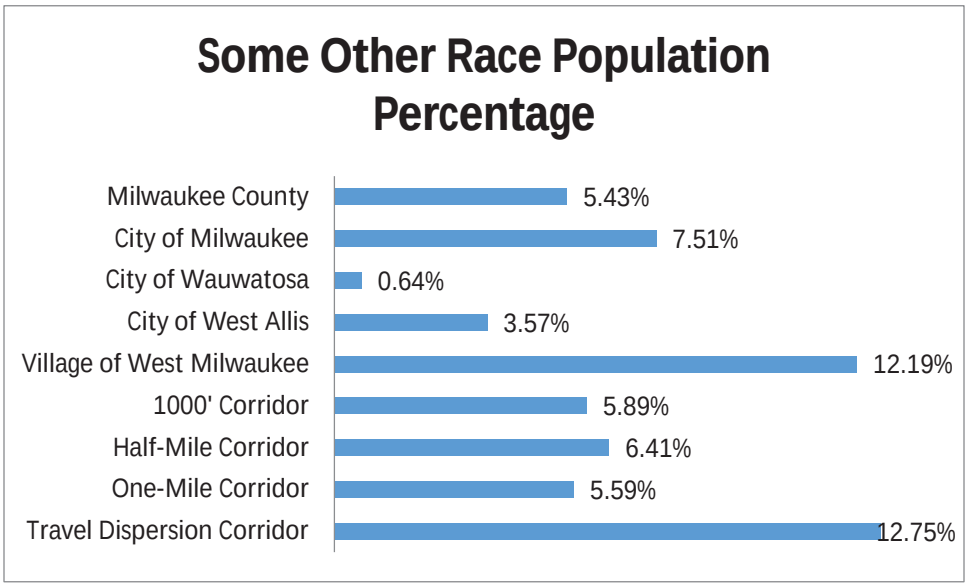
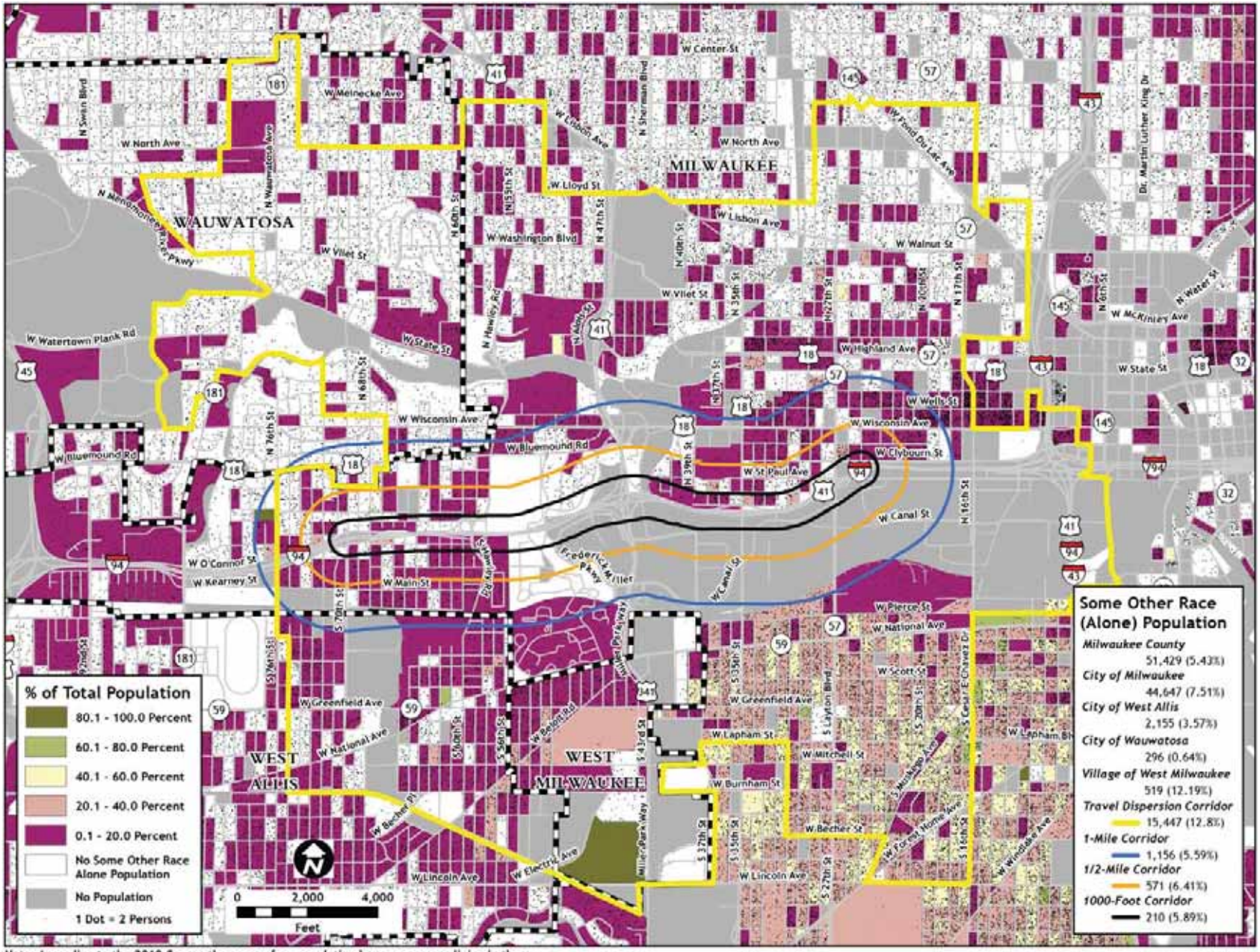


Exhibit 11 illustrates where Some Other Race populations are located within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 6 percent of the population identifies themselves as Some Other Race. The area with the highest percentages of some other race is located east of WIS 341(Miller Park Way) and south of I-94 where most blocks are between 20.1 and 60.0 percent some other race. Smaller percentages of some other race populations can be found scattered throughout the study area.



Note: According to the 2010 Census the areas of no population have no persons living in them.

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Exhibit 11
Some Other Race Population Alone In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_11_SomeOtherRacePopulation_v3.ai 08.12.13 mjl

4.3.9 Two or More Races Population

The following table provides data on the Two or More Races population in and near the I-94 East-West Corridor study area.

Two Or More Races	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	28,293	20,286	3,851	1,000	347	1,763	535	181	181	23,203	144	432	840	4,914
% of population	2.99%	3.41%	4.21%	2.15%	2.32%	2.92%	5.10%	4.25%	4.25%	3.29%	4.04%	4.85%	4.06%	4.06%

The following chart provides a visual representation of the Two or More Races Population Percentages in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

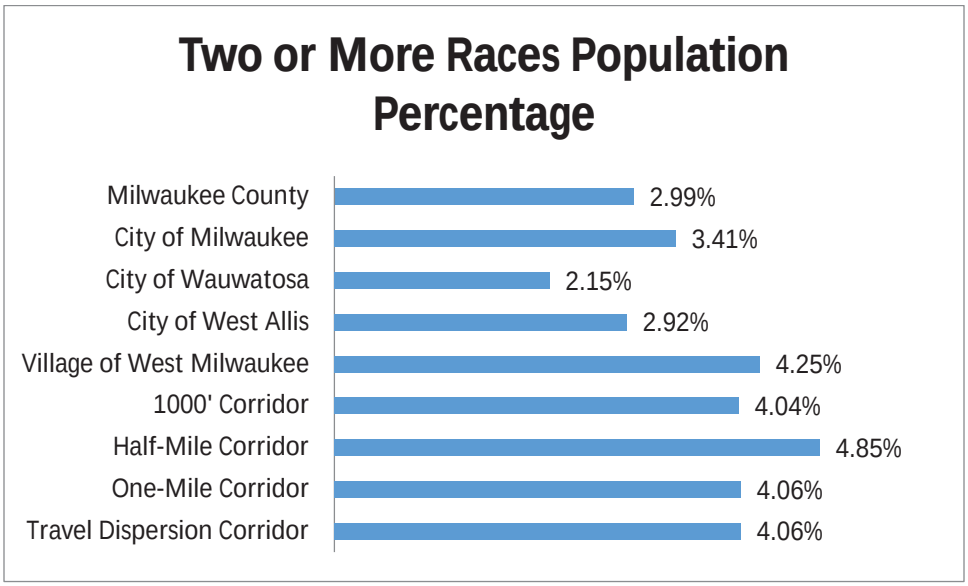
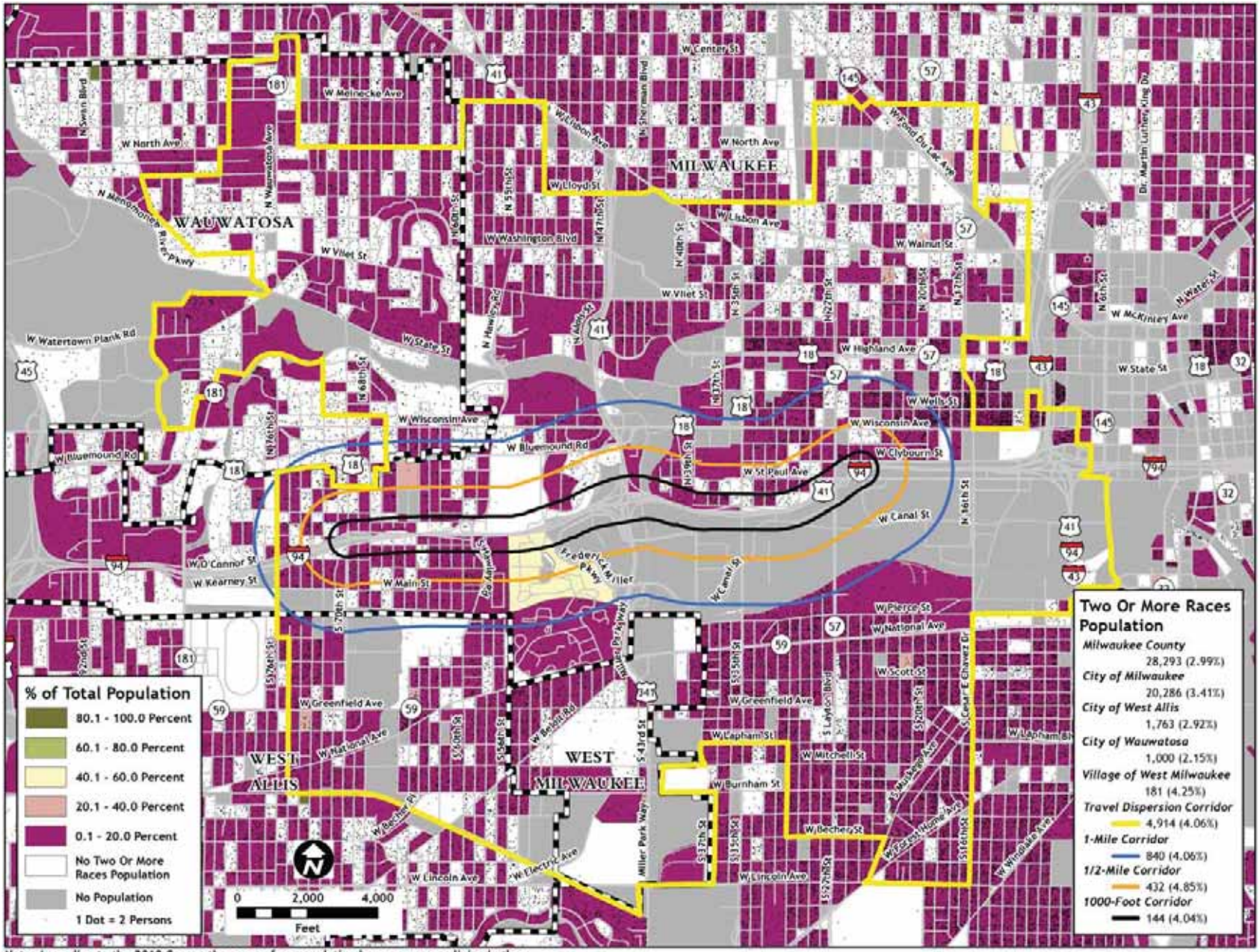


Exhibit 12 illustrates where Two or More Race populations are located within the study corridor. Within the half-mile corridor around I-94 in the study corridor (one-quarter mile in each direction from I-94), approximately 5 percent of the population identifies themselves as two or more races. Two or More Race populations are scattered throughout the corridor. Of the blocks that contained Two or More Race populations most were 0.1 to 20.0 percent.



Note: According to the 2010 Census the areas of no population have no persons living in them.

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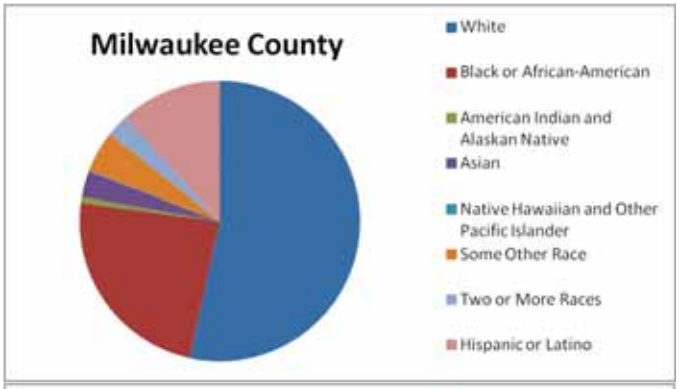
Exhibit 12

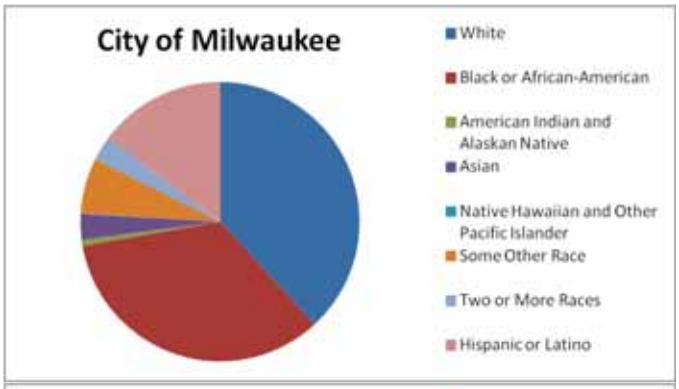
Two Or More Races Population In I-94 Corridor

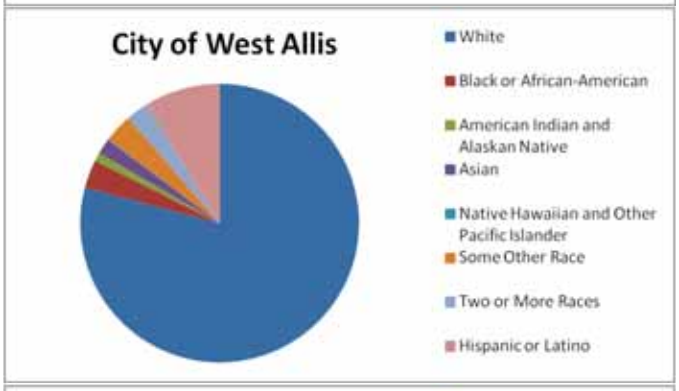
TBG112712083606MKE I-94_EJ_Exhibit_12_TwoOrMoreRaces_v3.ai 08.12.13 mjl

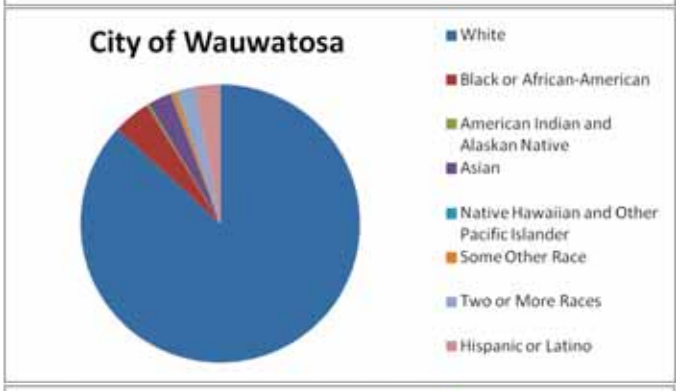
4.3.10 Minority Population Breakdown

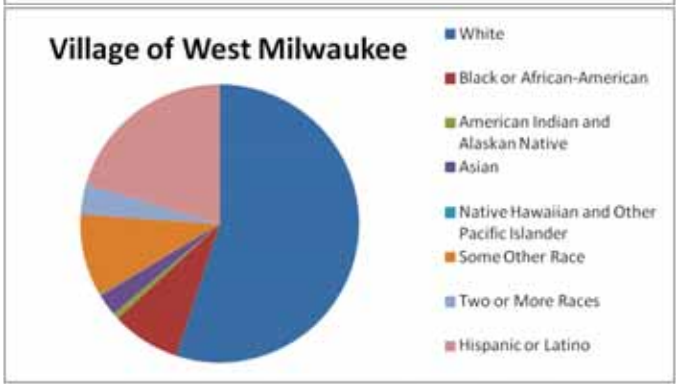
The following charts depict the minority breakdown within the study bands, Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee. In each case, Black or African Americans represent the largest minority population, followed by the Hispanic population, Asian population, American Indian/Alaskan Native population, and then Hawaiian Native/Other Pacific Islander. Percentages for each minority group can be found above in the discussion of each respective race or ethnic group.

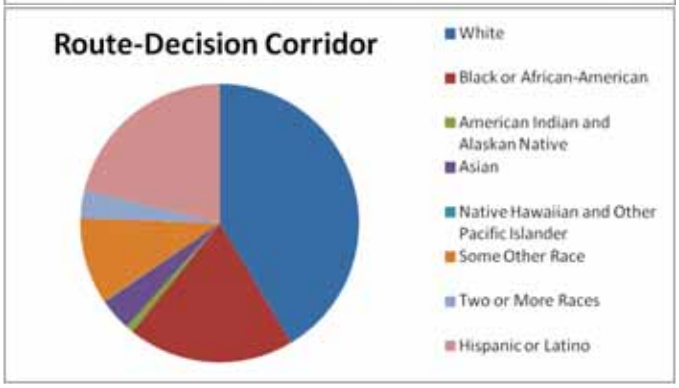


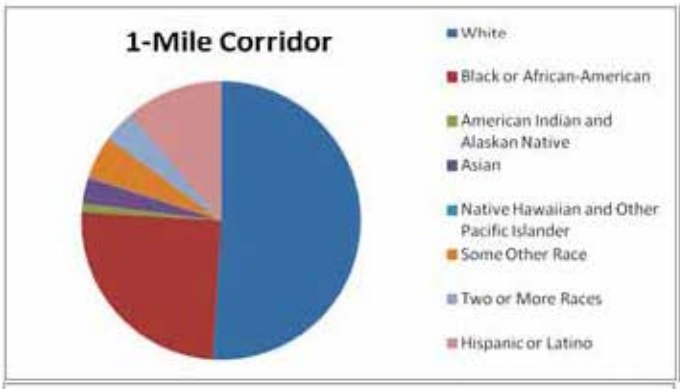


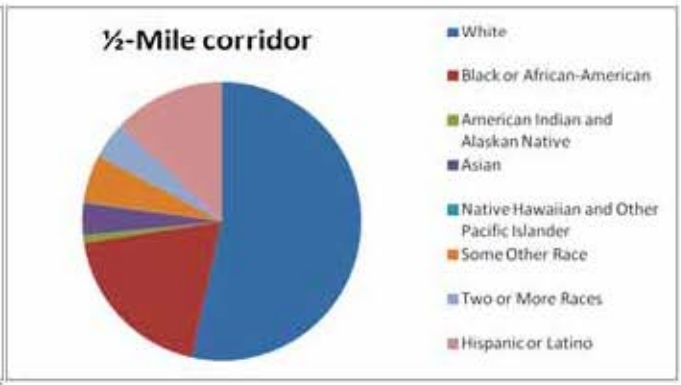


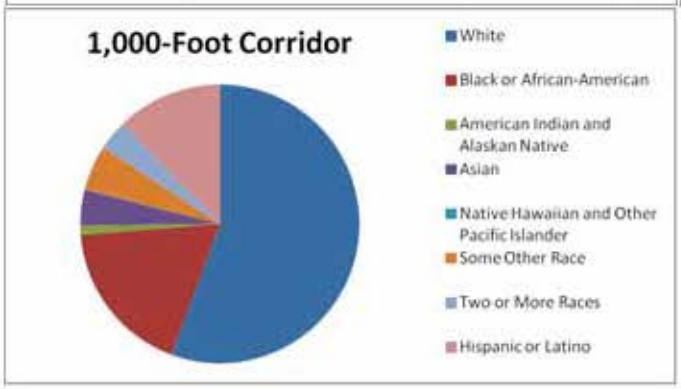







1-Mile Corridor
White
Black or African-American
American Indian and Alaskan Native
Asian
Native Hawaiian and Other Pacific Islander
Some Other Race
Two or More Races
Hispanic or Latino


½-Mile corridor
White
Black or African-American
American Indian and Alaskan Native
Asian
Native Hawaiian and Other Pacific Islander
Some Other Race
Two or More Races
Hispanic or Latino


1,000-Foot Corridor
White
Black or African-American
American Indian and Alaskan Native
Asian
Native Hawaiian and Other Pacific Islander
Some Other Race
Two or More Races
Hispanic or Latino

4.4 Low-Income Populations

Four indicators of low-income populations were analyzed in full because they directly account for income level or poverty in a given area. They include:

- Mean Income
- Families Receiving Public Income Assistance
- Poverty
- Families Below Poverty Level

Several other indicators of low-income populations were analyzed to supplement the above indicators. These supplemental indicators demonstrate characteristics of low-income populations without specifically accounting for income level or poverty. They include:

- Immigrant populations
- Household characteristics
- Transportation
- Persons with disabilities
- Housing Characteristics
- Educational Attainment

Data for low-income indicators is provided at the census tract level. The census tract is the smallest geographical entity for which income data is collected. Low-income indicator data was collected from the 2010 Census and 2011 American Community Survey (ACS) 5-year estimates, where applicable.

4.4.1 Mean Household Income

The following table provides data on the mean household income in and near the I-94 East-West Corridor study area.

Mean Household Income	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	$43,894	$36,473	$29,910	$69,031	$71,785	$45,607	$37,588	$37,224	$37,224	$38,925	$37,105	$34,077	$31,842	$33,455

The following chart provides a visual representation of the mean household income in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

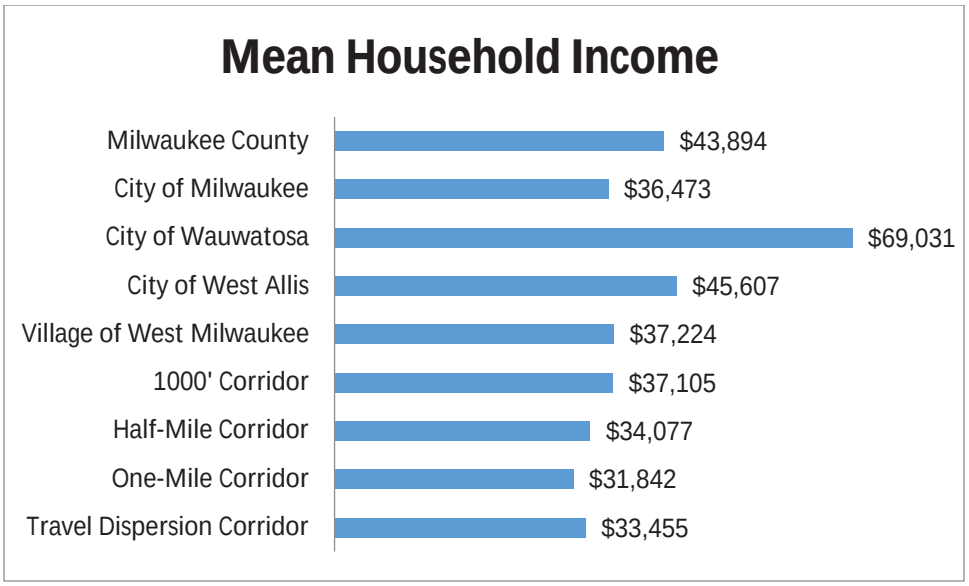


Exhibit 13 illustrates the mean household income within the study corridor. Generally, households east of 35th Street, north and south of I-94, have a mean household income of $35,000 or less. Households to the west of 35th Street generally have a mean household income ranging from $35,001 to $75,000. However, there is a cluster of blocks between 75th Street and 70th Street south of the West Allis/Milwaukee boundary and north of W. Burnham Street which have a mean household income of $35,000 or less. The Veteran's Administration (VA) Campus also has a mean household income of $35,000 of less. Two census tracts in Wauwatosa have a mean household income of $75,001 to $100,000.

4.4.2 Families Receiving Public Income Assistance

The following table provides data on families receiving public income assistance in and near the I-94 East-West Corridor study area.

Families Receiving Public Income Assistance	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	16,990	13,998	2,387	209	9	707	127	31	31	14,945	307	474	891	2,554
% of population	7.75%	10.69%	12.91%	1.79%	0.34%	4.84%	5.25%	3.24%	3.24%	9.45%	9.20%	12.19%	9.03%	10.42%

The following chart provides visual representation of the families receiving public income assistance in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

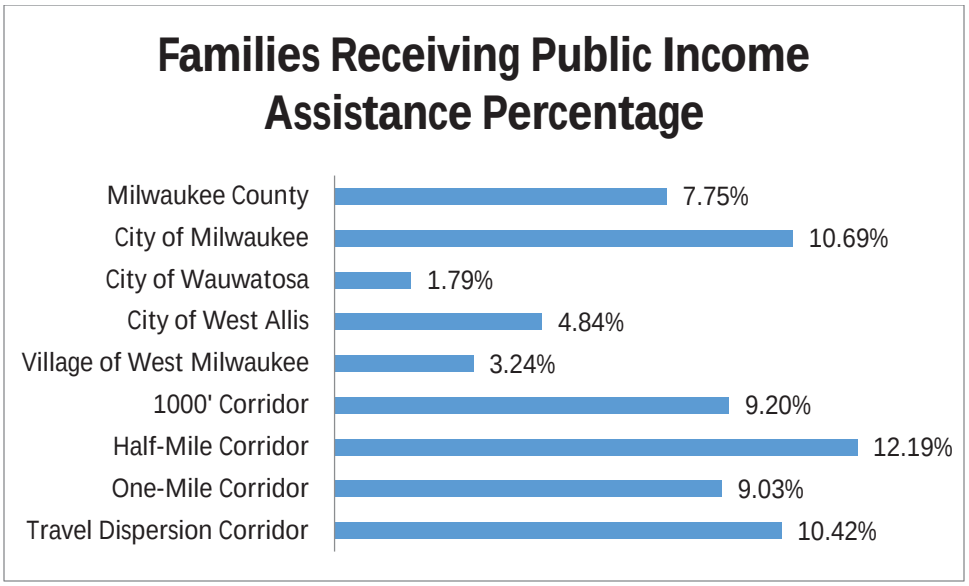
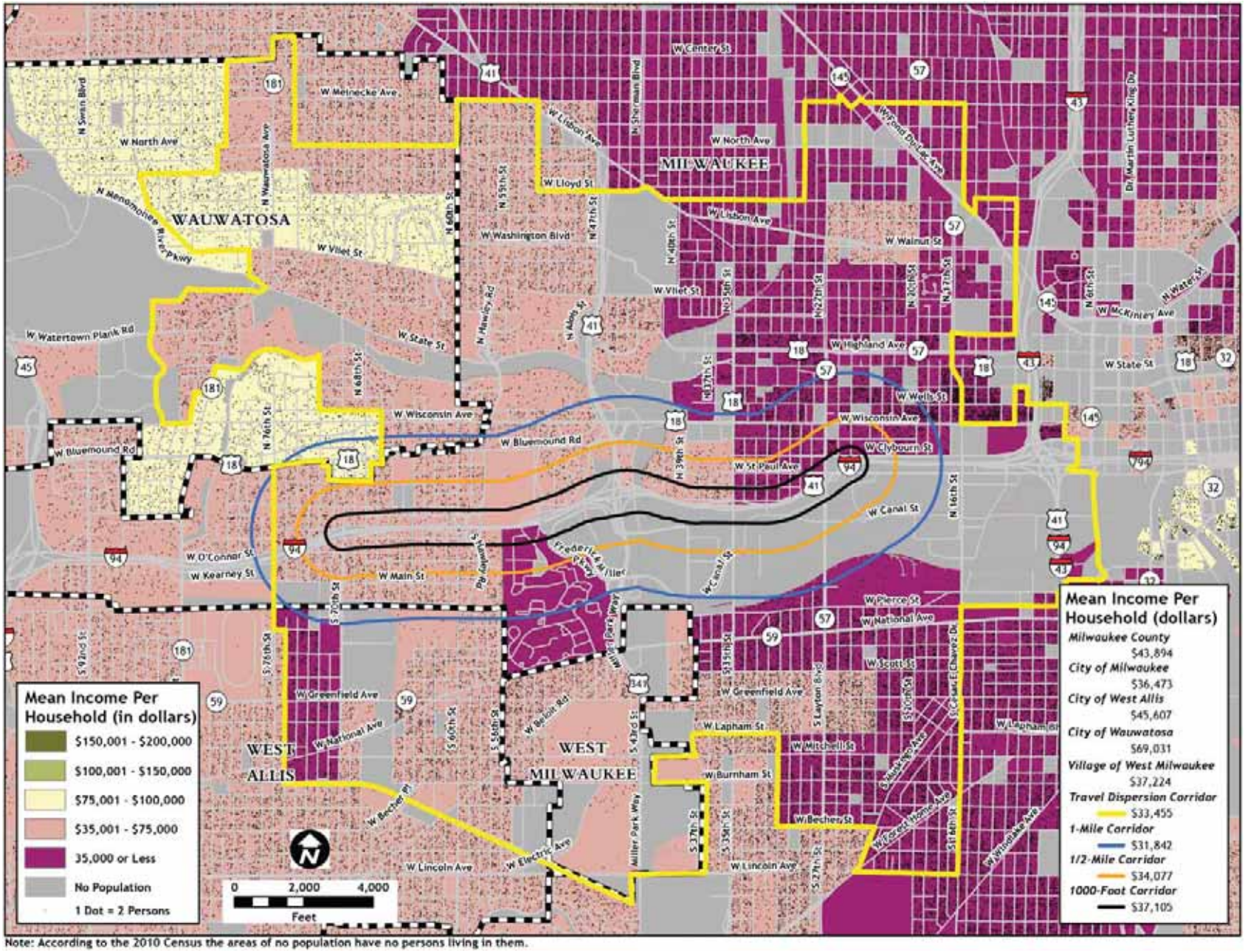


Exhibit 14 illustrates where families receiving public income assistance are located. Every tract has families receiving public income assistance. Most tracks are 0.1 to 20.0 percent families receiving public assistance. Tracts with 20.1 to 40.0 percent east US 41 and WIS 341(Miller Park Way) are located between US 41 and 35th Street, along Highland Avenue and Wisconsin Avenue, along Fond Du Lac Avenue, north of Pierce Street, and along Forest Home Avenue. West of WIS 341 (Miller Park Way) only the VA Campus tract has a percentage between 20.1 to 40.0 percent.

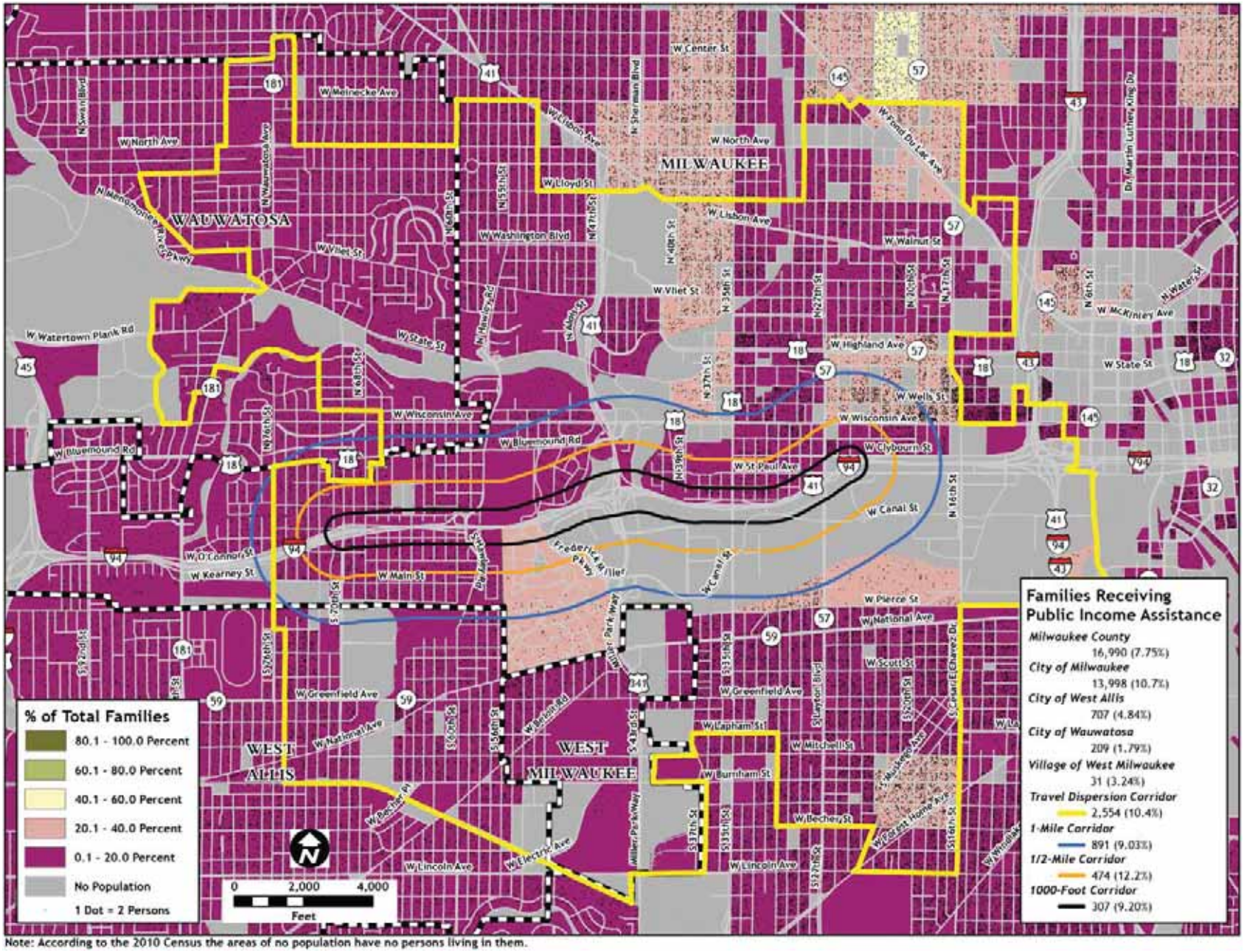


Note: According to the 2010 Census the areas of no population have no persons living in them.

U.S. Department of Transportation
Federal Highway Administration

Exhibit 13
Mean Income In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_13_MeanIncome_v3.ai 08.12.13 mjl



Note: According to the 2010 Census the areas of no population have no persons living in them.

U.S. Department of Transportation
Federal Highway Administration

Exhibit 14

Families Receiving Public Income Assistance In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_14_FamiliesRecPIA_v3.ai 08.12.13 mjl

4.4.3 Poverty

The following table provides data on persons living below the poverty level in and near the I-94 East-West Corridor study area. The U.S. Department of Health and Human Services (HHS) annually publishes poverty guidelines to determine financial eligibility for certain programs. The HS guidelines are a simplification of the U.S. Census Bureau's poverty thresholds for use for administrative purposes; for instance, determining financial eligibility for certain federal programs. According to the HHS guideline, in 2013 a household containing four persons was considered to be living in poverty if the total income of the family was less than $23,550. The Census Bureau's Poverty Guidelines were used for this analysis. See Appendix #3 Census 2010 Definition of Subject Characters.

Persons Below Poverty Level	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	176,196	150,979	32,226	2,212	857	7,016	1,992	704	704	160,911	4,074	5,976	11,026	35,779
% of population	19.25%	26.21%	32.88%	4.90%	7.78%	11.84%	19.36%	16.68%	16.68%	23.50%	25.00%	30.10%	34.70%	31.02%

The following chart provides visual representation of the persons below poverty level in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

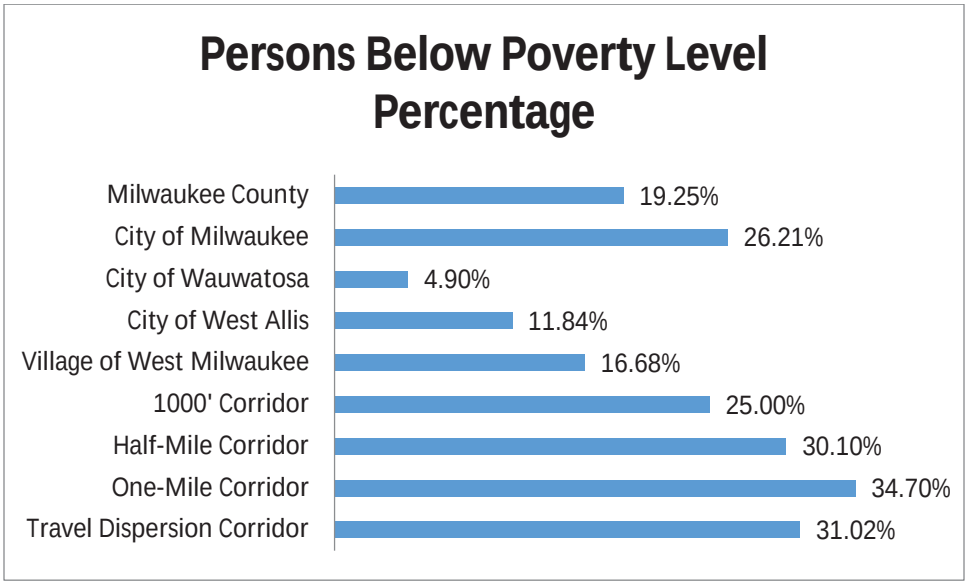
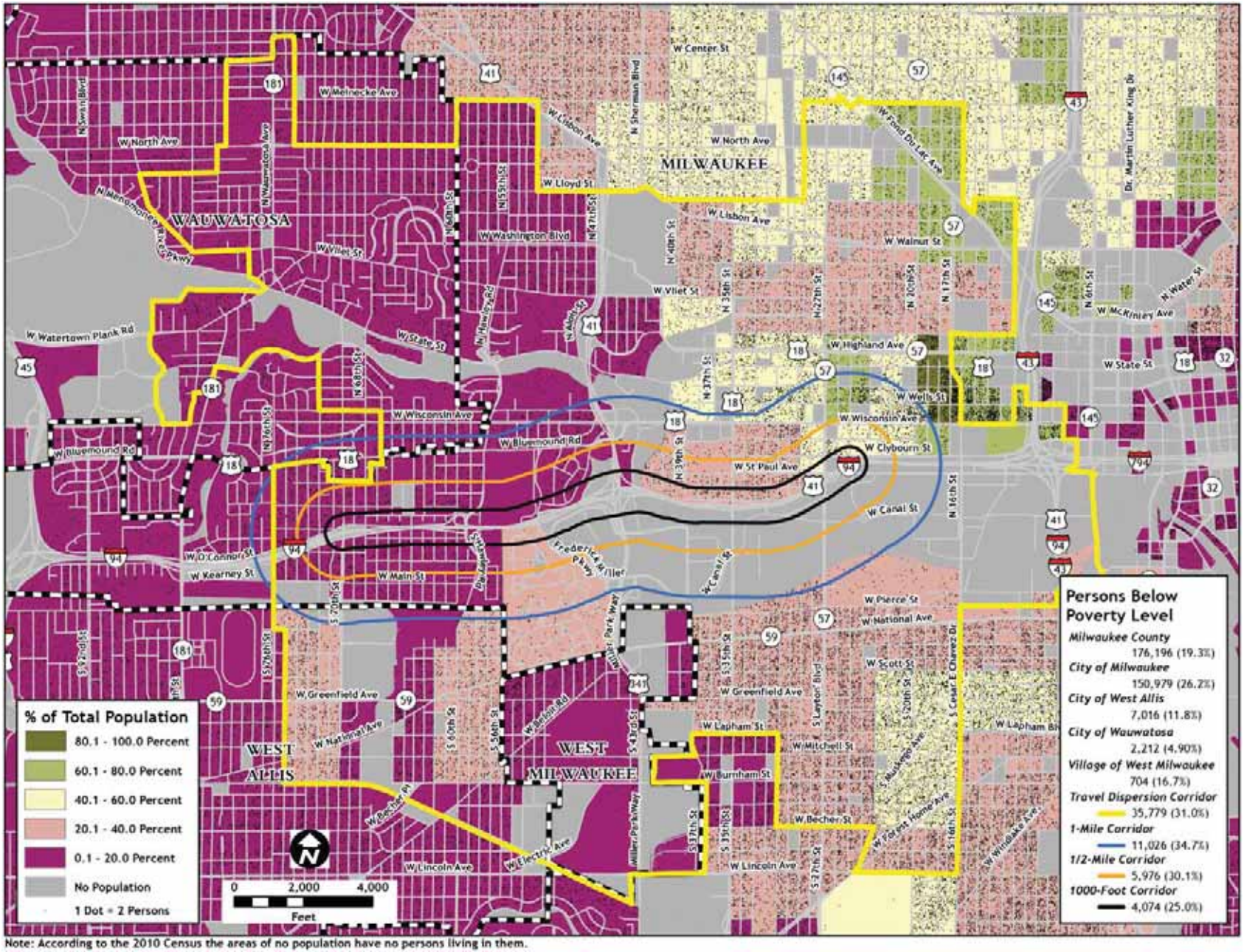


Exhibit 15 illustrates where persons below the poverty level are located within the study corridor. The areas with the highest percent of persons below the poverty level (60.1 to 100.0 percent) are located east of US 41 along Wisconsin Avenue, Wells Street, Highland Avenue, and Fond Du Lac Avenue.



U.S. Department of Transportation
Federal Highway Administration

Exhibit 15
Persons Below Poverty Level in I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_15_PersonBelowPoverty_v4.ai 08.12.13 mjl

4.4.4 Families Below Poverty Level

The following table provides data on families living below the poverty level in and near the I-94 East-West Corridor study area.

Families In Poverty	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
		Total	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	64,505	45,169	6,280	1,989	422	3,470	713	229	229	50,857	1,068	1,148	2,736	7,644
% of population	29.43%	34.51%	33.97%	17.00%	24.03%	23.77%	29.94%	22.93%	22.93%	32.16%	32.00%	29.51%	27.73%	31.18%

Below is a visual representation of the families below poverty level in the study bands, compared to Milwaukee County, City of Milwaukee, City of Wauwatosa, City of West Allis, and Village of West Milwaukee.

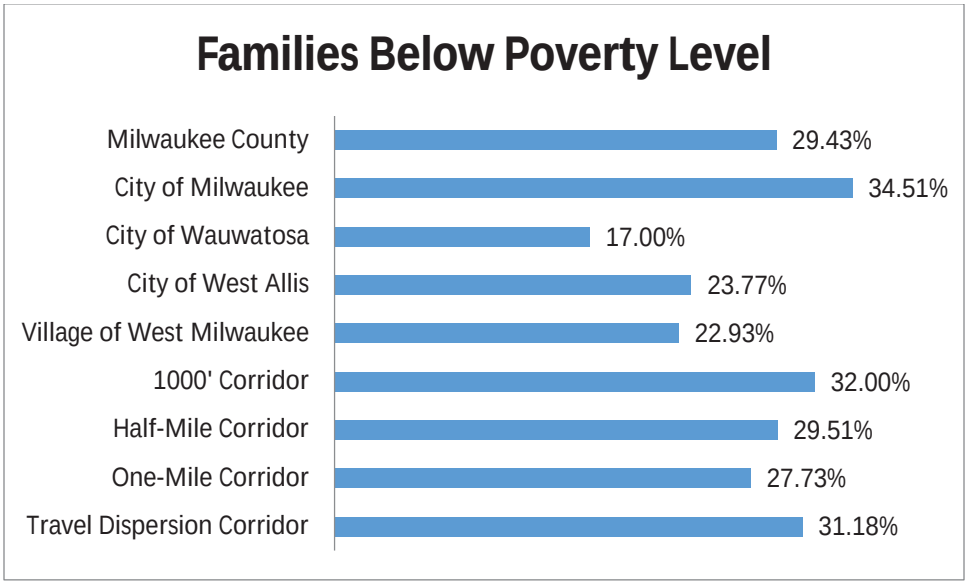
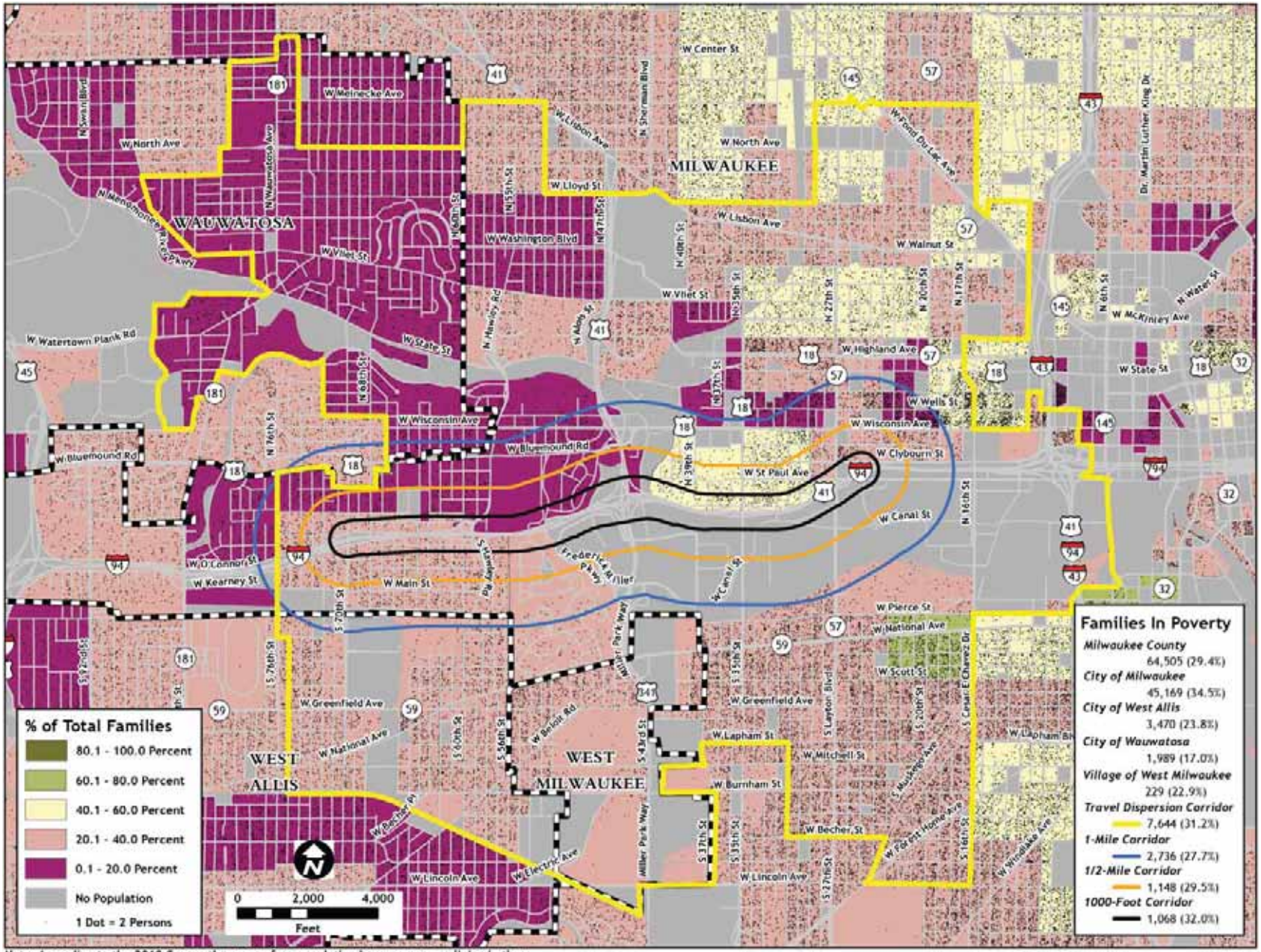


Exhibit 16 illustrates where families below the poverty level are located within the study corridor. The tract with the highest percentage of families below the poverty level (60.1 to 80.0 percent) is located between 23rd Street and 16th Street south of Pierce Street and north of Scott Street. All other tracts within the travel dispersion corridor are below 60 percent.



Note: According to the 2010 Census the areas of no population have no persons living in them.

U.S. Department of Transportation
Federal Highway Administration

Exhibit 16
Families Below Poverty Level In I-94 Corridor

TBG112712083606MKE I-94_EJ_Exhibit_16_FamilesBelowPoverty_v3.ai 08.12.13 mjl

4.5 Other Pertinent Demographic Information

4.5.1 Immigration

Foreign Born	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	80,336	57,379	16,085	2,351	411	2,770	719	524	524	63,024	1,855	2,136	3,599	17,739
% of population	8.56%	9.69%	17.28%	5.09%	3.73%	4.62%	6.87%	12.40%	12.40%	8.97%	10.36%	9.82%	7.07%	14.93%

Not A U.S. Citizen	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	32,015	23,571	5,627	622	134	1,744	410	181	181	26,118	936	1,064	1,939	5,992
% of population	3.41%	3.98%	5.66%	1.35%	1.22%	2.91%	3.92%	4.28%	4.28%	3.71%	5.23%	4.89%	3.81%	5.04%

Primary Language Not English	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	136,393	103,486	27,726	2,740	627	4,456	1,211	998	998	111,680	3,054	3,686	5,996	30,562
% of population	14.50%	17.48%	29.78%	5.93%	5.69%	7.54%	11.57%	23.64%	23.64%	15.89%	17.06%	16.95%	11.77%	25.72%

Speaks English Less Than Very Well	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	58,690	47,712	15,076	698	116	1,617	655	385	385	50,412	1,392	1,567	2,648	16,232
% of population	6.30%	8.06%	16.19%	1.51%	1.05%	2.69%	6.26%	9.12%	9.12%	7.17%	7.77%	7.21%	5.20%	13.66%

4.5.2 Household Characteristics

Average Household Size	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Number of People	2.48	2.59	2.69	2.26	2.24	2.17	2.26	2.14	2.14	2.54	2.00	2.03	2.09	2.61

Households With Children	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Households	107,426	68,491	10,592	5,417	1,260	6,466	1,189	474	474	80,848	1,565	1,879	4,880	13,515
% of households	28.01%	29.63%	32.55%	26.50%	25.22%	23.55%	25.68%	23.61%	23.61%	28.77%	21.14%	20.34%	22.24%	30.60%

Single Parents	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	51,210	40,091	6,130	1,254	293	2,636	579	225	225	44,206	837	1,073	2,587	7,227
% of population	13.35%	17.35%	18.84%	6.14%	5.86%	9.60%	12.51%	11.21%	11.21%	15.73%	11.31%	11.62%	11.79%	16.36%

4.5.3 Transportation

No Vehicle Available	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Occupied Housing Units	51,023	40,044	7,494	1,332	347	3,064	935	355	355	44,795	1,470	1,953	4,789	9,131
% of occupied housing units	13.45%	17.32%	23.08%	6.68%	7.04%	11.15%	20.30%	15.92%	15.92%	15.94%	19.80%	21.71%	22.37%	20.64%

Take Public Transportation To Work	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	25,159	21,752	3,471	456	108	924	343	56	56	23,188	499	761	1,919	3,978
% of population	5.79%	8.43%	9.46%	1.88%	1.80%	2.96%	6.62%	2.65%	2.65%	7.34%	5.64%	7.47%	7.97%	7.96%

4.5.4 Disability

Disability Status of the Civilian Non-Institutionalized Population	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	**minus the Village of West Milwaukee*				
Number of people	117,109	78,577	n/a	4,167	n/a	7,234	n/a	n/a	n/a	89,978	n/a	n/a	n/a	n/a
% of civilian non-institutionalized population	12.47	13.30	n/a	9.09	n/a	12.07	n/a	n/a	n/a	12.92	n/a	n/a	n/a	n/a

4.5.5 Housing Characteristics

Vacant Housing Units	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Housing Units	34,462	25,380	4,586	1,254	233	1,899	531	169	169	28,702	929	1,328	2,752	5,519
% of housing units	9.07%	10.54%	14.09%	6.14%	4.66%	6.28%	11.47%	7.80%	7.80%	10.21%	12.55%	14.38%	12.54%	12.49%

Mean Gross Rent	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Occupied Units Paying Rent	172,429	120,547	20,787	6,681	1,842	11,423	2,616	1,544	1,544	140,195	4,342	5,735	13,064	26,789
Mean Gross Rent	$761	$753	$683	$924	$919	$709	$764	$588	$588	$758	$649	$641	$649	$640

4.5.6 Education

Less Than High School Diploma	Milwaukee County	City of Milwaukee		City of Wauwatosa		City of West Allis		Village of West Milwaukee		Municipalities in Study Area	1000' Corridor	Half Mile Corridor	One Mile Corridor	Travel Dispersion Corridor
	Total (Milwaukee County)	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*	*Total*	*In travel dispersion corridor*					
Total Population	89,979	69,181	15,435	1,770	238	4,636	1,083	468	468	76,055	1,746	2,213	4,925	17,224
% of population	9.59%	11.68%	16.58%	3.83%	2.16%	7.73%	10.35%	11.09%	11.09%	10.82%	9.75%	10.18%	9.67%	14.50%

5 Outreach

Outreach on the I-94 East-West Corridor Study will be ongoing. Preliminary groups and stakeholders have been identified below; this is a living list and will be updated throughout the duration of the project.

Project staff will contact and arrange to meet with identified stakeholders to inform them of the study, solicit information and input on the study, and to equip them with information regarding upcoming Public Information Meetings and other opportunities for their membership to provide input about the project. Post-meeting follow-up will include database additions for mailed and electronic newsletters to keep them informed of the project status and timeline.

Additionally, diverse stakeholders will be identified and invited to participate in the Community Advisory Committee for the I-94 East-West Corridor Study.

Community Organization & Neighborhood Association Outreach

Organization Name	Address	Phone Number
African-American Chamber of Commerce	6203 W. Capitol Drive, Milwaukee, WI 53216	414-462-9450
Hispanic Chamber of Commerce	1021 W. National Avenue, Milwaukee, WI 53204	414-643-6963
NAACP	2745 N. Martin Luther King Drive Milwaukee, WI 53212	414-562-1000
Latino Health Coalition	611 W. National Avenue, Suite 409 Milwaukee, WI 53204	414-384-2673
Milwaukee Urban League	425 W. North Avenue Milwaukee, WI 53212	414-374-5850
Menomonee Valley Partners	301 W. Wisconsin Avenue Suite 400B, Milwaukee, WI 53203	414-276-4655
30th Street Industrial Corridor Business Improvement District	PO Box 16498 Milwaukee, WI 53216	414-444-4706
Silver City (Layton Blvd West Neighbors)	1515 S. Layton Blvd.	414-383-9038
Historic Concordia Neighborhood	W. Wisconsin Avenue to W. Highland Blvd, N. 35th Street to N. 27th Street	414-931-7597
Story Hill Neighborhood Association	317 N. 50th Street, Milwaukee, WI 53208	414-303-3686
Charles Jacobus Park Neighborhood Association	6768 Maple Terrace, Milwaukee, WI 53213	414-507-6769
Washington Heights Neighborhood Association	PO Box 080104, Milwaukee, WI 53208	414-297-9617
Merrill Park Neighborhood Association	3325 W. Michigan Avenue, Milwaukee, WI 53208	414-933-7577
Westown Association	633 W. Wisconsin Avenue, Milwaukee, WI 53203	414-276-6696
Hmong American Friendship Association	3824 W. Vliet Street, Milwaukee, WI 53208	414-344-6575
UMOS	2701 W. Chase Avenue, Milwaukee, WI 53207	414-389-6600
Boy Scouts of America – Wisconsin	330 S. 84th Street, Milwaukee, WI 53214	414-774-1776
Girl Scouts of Wisconsin Southeast	131 S. 69th Street, Milwaukee, WI 53214	414-443-3924

Neighborhoods

Organization Name	Location
Washington Heights Neighborhood	West of US 41, North Avenue to Vliet Street
Wick Field Neighborhood	West of US 41, Vliet Street to State Street
Washington Park Neighborhood	East of US 41, Vliet Street to North Avenue
Martin Drive Neighborhood	East of US 41, Vliet Street to State Street
Valley Park Neighborhood	NE Quadrant of Stadium Interchange
Bluemound Heights	North of I-94, west of Hawley Road
Story Hill	NW Quadrant of Stadium Interchange
Johnson's Woods	South of I-94, west of Hawley Road
The Valley/Pigsville	NE Quadrant of Stadium Interchange
Merrill Park	East of US 41, north of I-94, west of 35th Street
Historic Concordia Neighborhood	West of 27th Street to 35th Street, North of Wisconsin Avenue to Highland Avenue
Jacobus Park	West of US 41, north of I-94, east of 68th Street

School Outreach

Organization Name	Address	Phone Number
West Milwaukee Middle School	5104 W. Greenfield Avenue, West Milwaukee, WI 53214	414-604-3300
Pius XI High School	135 N. 76th Street, Milwaukee, WI 53213	414-290-7000
Woodlands School	5510 W. Bluemound Road, Milwaukee, WI	414-475-1600
Marquette University High School	3401 W. Wisconsin Avenue, Milwaukee, WI 53208	414-933-7220
Alston's Preparatory Academy	921 N. 49th Street, Milwaukee, WI 53208	414-771-2443
Milwaukee Montessori School	6415 W. Mount Vernon Avenue, Milwaukee, WI 53213	414-356-8300
St. Vincent Pallotti Catholic School	201 N. 76th Street, Milwaukee, WI 53213	414-258-4165
Ebenezer Lutheran School	3102 S. 43rd Street, Milwaukee, WI 53219	414-384-2916
Pershing Elementary School	1330 S. 47th Street, West Milwaukee, WI 53214	414-604-4600
St. Leo School	514 N. 31st Street, Milwaukee, WI 53208	414-933-6070
Burbank School	6035 W. Adler Street, Milwaukee, WI 53214	414-256-8400

Business Outreach

Organization Name	Address	Phone Number
Children's Hospital of Wisconsin	9000 W. Wisconsin Avenue, Milwaukee, WI 53226	414-266-2000
Children's Health Alliance of Wisconsin	620 S. 76th Street Suite 120, Milwaukee, WI 53212	414-292-4000
Potawatomi Bingo Casino	1721 W. Canal Street, Milwaukee, WI 53233	414-645-6888
Milwaukee Brewers Baseball Club	1 Brewers Way, Milwaukee, WI 53214	414-902-4000
Department of Veterans Affairs	5000 W. National Avenue, Milwaukee, WI 53295	414-384-2000
Wisconsin Humane Society	4500 W. Wisconsin Avenue, Milwaukee, WI 53208	414-364-6257
Miller Coors	4103 W. State Street, Milwaukee, WI 53208	414-931-3552
Wood National Cemetery	5000 W. National Avenue Building 1301, Milwaukee, WI 53295	414-382-5300
Mount Calvary Cemetery	5503 W. Bluemound Road, Milwaukee, WI 53214	414-438-4430
Harley Davidson	3700 W. Juneau Avenue, Milwaukee, WI 53208	414-342-4680
Beth Hamedrosh Hagodel Cemetery	5027 W. North Avenue, Milwaukee, WI 53208	414-871-2232
Wisconsin State Fair Park	640 S. 84th Street, West Allis, WI 53214	414-266-7000
Pettit National Ice Center	500 S. 84th Street, Milwaukee, WI 53214	414-266-0100
Joy Global Surface Mining	4400 W. National Avenue, Milwaukee, WI 53214	414-670-4400

Church Outreach

Organization Name	Address	Phone Number
Balm in Gilead for All People	1210 S. 61st Street, West Allis, WI 53214	414-256-8707
First Spiritualist Church of West Allis	6228 W. Washington Street, West Allis, WI 53214	414-778-0088
Fairview Evangelical Lutheran Church	137 N. 66th Street, Milwaukee, WI	414-771-2530
Nativity Lutheran Church	6905 W. Bluemound Road, Milwaukee, WI	414-476-1853
Chinese Community Baptist Church	120 N. 73rd Street, Milwaukee, WI 53213	414-258-2410
St. Vincent Pallotti Church	5424 W. Bluemound Road, Milwaukee, WI 53208	414-453-5344
Free Will Church of God	320 N. 33rd Street, Milwaukee, WI 53208	414-342-3473
Great Westside Church of God in Christ	2602 W. Auer Street, Milwaukee, WI	414-447-9778
Christian Faith Fellowship Church	724 S. Layton Boulevard, Milwaukee, WI 53215	
Our Savior's Lutheran Church	3022 W. Wisconsin Avenue, Milwaukee, WI 53208	414-342-5252
St. Sebastian Church	5400 W. Washington Boulevard, Milwaukee, WI	414-453-1928

Organization Name	Address	Phone Number
	53208	
Divine word Lutheran Church	5505 W. Lloyd Street, Milwaukee, WI 53208	414-475-3189
Holy Angels Cathedral	1510 N. 70th Street, Milwaukee, WI 53213	414-774-6420
Matthew's Evangelical Lutheran Church	1615 N. Wauwatosa Avenue, Milwaukee, WI 53213	414-774-0441
Reformation Lutheran Church	2201 N. 35th Street, Milwaukee, WI 53208	414-444-0440
New Covenant Missionary Church	2315 N. 38th Street, Milwaukee, WI 53210	414-873-1221

6 Environmental Justice Staff Resources

The following individuals will be involved in implementing the Environmental Justice plan for the I-94 East-West Corridor Study project:

Name, Representing	Role
Dave Nguyen, WisDOT	Project Development Chief
Tony Barth, WisDOT	Project Supervisor
Jason Lynch, WisDOT	Project Manager
Dobra Payant, WisDOT	Deputy Project Manager
Emlynn Grisar, WisDOT	Communications Manager
Brad Heimlich, CH2M Hill	Project Manager
Charlie Webb, CH2M Hill	Project Manager
Ben Goldsworthy, CH2M Hill	Project Manager
Beth Foy, Beth Foy & Associates	Public Involvement
Nancy Hernandez, ABRAZO Marketing	Public Involvement
Helen Dixon, Dixon & Company, Inc.	Public Involvement

7 Timelines, Activities, and Deliverables

Findings in this preliminary assessment will inform the decision-making process in considering potential effects of the identified alternatives, and inform the project study team of community issues and concerns.

Initial deliverables drawn from the assessment include, but are not limited to:

Deliverable / Milestone	Timeframe
Environmental Justice Analysis Report (draft)	Winter 2012/13
Public Involvement Plan	Summer 2012
Conduct Preliminary Outreach (Public Information Meeting #1)	August 2012
Conduct Outreach (Public Information Meetings #2 and #3)	December 2012/ May 3013
Conduct Indirect and Cumulative Effects Focus Group Meeting	June 2013
Combine EJ analysis with preliminary outreach findings, make adjustments to EJ (updates)	Summer 2013
Conduct final outreach to disseminate findings of study (preferred alternative) to community	Fall 2013
Stakeholder Database Development	Ongoing
Media Coordination	Ongoing
Meeting Handouts and Collateral Materials	Ongoing

8 Tentative Methods of Evaluation of Environmental Justice Plan Effectiveness

- Quarterly internal check-in.
- Periodic checks of the current project status against established deliverables listed in section 11 above.
- Surveys – Conducted with the public at various times, diverse types of outreach meetings, small group meetings and online.
- Develop clear, measurable goals – Number of meetings, number of stakeholders added to mailing list, number of inquiries, response to inquiries.
- Comments and requests from minority and low-income advisory committee participants and neighborhood meetings will be incorporated into the development of the project and proposed project alternatives.

Appendix I: Executive Order 12898

Federal Register Presidential Documents

Vol. 59, No. 32
Wednesday, February 16, 1994
Title 3—
The President
Executive Order 12898 of February 11, 1994
Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1–1. Implementation.

1–101. Agency Responsibilities. To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

1–102. Creation of an Interagency Working Group on Environmental Justice.

(a) Within 3 months of the date of this order, the Administrator of the Environmental Protection Agency (''Administrator'') or the Administrator's designee shall convene an interagency Federal Working Group on Environmental Justice (''Working Group''). The Working Group shall comprise the heads of the following executive agencies and offices, or their designees: (a) Department of Defense; (b) Department of Health and Human Services; (c) Department of Housing and Urban Development; (d) Department of Labor; (e) Department of Agriculture; (f) Department of Transportation; (g) Department of Justice; (h) Department of the Interior; (i) Department of Commerce; (j) Department of Energy; (k) Environmental Protection Agency; (l) Office of Management and Budget; (m) Office of Science and Technology Policy; (n) Office of the Deputy Assistant to the President for Environmental Policy; (o) Office of the Assistant to the President for Domestic Policy; (p) National Economic Council; (q) Council of Economic Advisers; and (r) such other Government officials as the President may designate. The Working Group shall report to the President through the Deputy Assistant to the President for Environmental Policy and the Assistant to the President for Domestic Policy. (b) The Working Group shall: (1) provide guidance to Federal agencies on criteria for identifying disproportionately high and adverse human health or environmental effects on minority populations and low-income populations; (2) coordinate with, provide guidance to, and serve as a clearing house for, each Federal agency as it develops an environmental justice strategy as required by section 1–103 of this order, in order to ensure that the administration, interpretation and enforcement of programs, activities and policies are undertaken in a consistent manner; (3) assist in coordinating research by, and stimulating cooperation among, the Environmental Protection Agency, the Department of Health and Human Services, the Department of Housing and Urban Development, and other agencies conducting research or other activities in accordance with section 3–3 of this order; (4) assist in coordinating data collection, required by this order; (5) examine existing data and studies on environmental justice; **Federal Register** / Vol. 59, No. 32 /Wednesday, February 16, 1994 / Presidential Documents (6) hold public meetings as required in section 5–502(d) of this order; and (7) develop

interagency model projects on environmental justice that evidence cooperation among Federal agencies.

1–103. *Development of Agency Strategies.* (a) Except as provided in section 6–605 of this order, each Federal agency shall develop an agency-wide environmental justice strategy, as set forth in subsections (b)–(e) of this section that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The environmental justice strategy shall list programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to, at a minimum: (1) promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations; (2) ensure greater public participation; (3) improve research and data collection relating to the health of and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions. (b) Within 4 months of the date of this order, each Federal agency shall identify an internal administrative process for developing its environmental justice strategy, and shall inform the Working Group of the process. (c) Within 6 months of the date of this order, each Federal agency shall provide the Working Group with an outline of its proposed environmental justice strategy. (d) Within 10 months of the date of this order, each Federal agency shall provide the Working Group with its proposed environmental justice strategy. (e) Within 12 months of the date of this order, each Federal agency shall finalize its environmental justice strategy and provide a copy and written description of its strategy to the Working Group. During the 12 month period from the date of this order, each Federal agency, as part of its environmental justice strategy, shall identify several specific projects that can be promptly undertaken to address particular concerns identified during the development of the proposed environmental justice strategy, and a schedule for implementing those projects. (f) Within 24 months of the date of this order, each Federal agency shall report to the Working Group on its progress in implementing its agency-wide environmental justice strategy. (g) Federal agencies shall provide additional periodic reports to the Working Group as requested by the Working Group.

1–104. *Reports to the President.* Within 14 months of the date of this order, the Working Group shall submit to the President, through the Office of the Deputy Assistant to the President for Environmental Policy and the Office of the Assistant to the President for Domestic Policy, a report that describes the implementation of this order, and includes the final environmental justice strategies described in section 1–103(e) of this order.

Sec. 2–2. *Federal Agency Responsibilities for Federal Programs.* Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.

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Sec. 3–3.*Research, Data Collection, and Analysis.*

3–301. *Human Health and Environmental Research and Analysis.* (a) Environmental human health research, whenever practicable and appropriate, shall include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority populations, low income populations and workers who may be exposed to substantial

environmental hazards. (b) Environmental human health analyses, whenever practicable and appropriate, shall identify multiple and cumulative exposures. (c) Federal agencies shall provide minority populations and low-income populations the opportunity to comment on the development and design of research strategies undertaken pursuant to this order. **3–302.** *Human Health and Environmental Data Collection and Analysis.* To the extent permitted by existing law, including the Privacy Act, as amended (5 U.S.C. section 552a): (a) each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income. To the extent practical and appropriate, Federal agencies shall use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations; (b) In connection with the development and implementation of agency strategies in section 1–103 of this order, each Federal agency, whenever practicable and appropriate, shall collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations, when such facilities or sites become the subject of a substantial Federal environmental administrative or judicial action. Such information shall be made available to the public, unless prohibited by law; and (c) Each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding Federal facilities that are: (1) subject to the reporting requirements under the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. section 11001–11050 as mandated in Executive Order No. 12856; and (2) expected to have a substantial environmental, human health, or economic effect on surrounding populations. Such information shall be made available to the public, unless prohibited by law. (d) In carrying out the responsibilities in this section, each Federal agency, whenever practicable and appropriate, shall share information and eliminate unnecessary duplication of efforts through the use of existing data systems and cooperative agreements among Federal agencies and with State, local, and tribal governments.

Sec. 4–4. Subsistence Consumption of Fish and Wildlife.

4–401. Consumption Patterns. In order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Federal agencies shall communicate to the public the risks of those consumption patterns.

4–402. Guidance. Federal agencies, whenever practicable and appropriate, shall work in a coordinated manner to publish guidance reflecting the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish.

Federal Register / Vol. 59, No. 32 /Wednesday, February 16, 1994 / Presidential Documents wildlife. Agencies shall consider such guidance in developing their policies and rules.

Sec. 5–5. Public Participation and Access to Information. (a) The public may submit recommendations to Federal agencies relating to the incorporation of environmental justice principles into Federal agency programs or policies. Each Federal agency shall convey such recommendations to the Working Group. (b) Each Federal agency may, whenever practicable and appropriate, translate crucial public documents, notices, and hearings relating to human health or the environment for limited English speaking populations. (c) Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public. (d) The Working Group shall hold public meetings, as appropriate, for the purpose of fact-finding,

receiving public comments, and conducting inquiries concerning environmental justice. The Working Group shall prepare for public review a summary of the comments and recommendations discussed at the public meetings.

Sec. 6–6. *General Provisions.*

6–601. *Responsibility for Agency Implementation.* The head of each Federal agency shall be responsible for ensuring compliance with this order. Each Federal agency shall conduct internal reviews and take such other steps as may be necessary to monitor compliance with this order.

6–602. *Executive Order No. 12250.* This Executive order is intended to supplement but not supersede Executive Order No. 12250, which requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving Federal financial assistance. Nothing herein shall limit the effect or mandate of Executive Order No. 12250.

6–603. *Executive Order No. 12875.* This Executive order is not intended to limit the effect or mandate of Executive Order No. 12875.

6–604. *Scope.* For purposes of this order, Federal agency means any agency on the Working Group, and such other agencies as may be designated by the President, that conducts any Federal program or activity that substantially affects human health or the environment. Independent agencies are requested to comply with the provisions of this order.

6–605. *Petitions for Exemptions.* The head of a Federal agency may petition the President for an exemption from the requirements of this order on the grounds that all or some of the petitioning agency's programs or activities should not be subject to the requirements of this order.

6–606. *Native American Programs.* Each Federal agency responsibility set forth under this order shall apply equally to Native American programs. In addition, the Department of the Interior, in coordination with the Working Group, and, after consultation with tribal leaders, shall coordinate steps to be taken pursuant to this order that address Federally-recognized Indian Tribes.

6–607. *Costs.* Unless otherwise provided by law, Federal agencies shall assume the financial costs of complying with this order.

6–608. *General.* Federal agencies shall implement this order consistent with, and to the extent permitted by, existing law.

6–609. *Judicial Review.* This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or any person. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance.

Federal Register / Vol. 59, No. 32 /Wednesday, February 16, 1994 / Presidential Documents of the United States, its agencies, its officers, or any other person with this order.

THE WHITE HOUSE,
February 11, 1994.
[FR Citation 59 FR 7629]

Appendix II: Environmental Justice – The US Department of Transportation

FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Classification Code	Date	Office of Primary Interest
6640.23A	**June 14, 2012**	**HEP**

1. **What is the purpose of this directive?** This FHWA directive establishes policies and procedures for the Federal Highway Administration (FHWA) to use in complying with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898), dated February 11, 1994.
2. **Does this directive cancel an existing FHWA directive?** Yes. This directive cancels FHWA Order 6640.23 FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated December 2, 1998.
3. **What authorities govern this directive?**
    a. Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898), issued February 11, 1994. EO 12898 requires Federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health or environmental effects, including the interrelated social and economic effects of their programs, policies, and activities on minority populations and low-income populations in the United States. As indicated in the EO, the foregoing requirements are to be carried out to the greatest extent practicable and permitted by law and consistent with the principles set forth in the report on the National Performance Review. Compliance with this FHWA Order is a key element in the environmental justice strategy adopted by FHWA to implement EO 12898, and can be achieved within the framework of existing laws, regulations, and guidance.
    b. Department of Transportation (DOT) Order 5610.2(a), Final DOT Environmental Justice Order, issued May 2, 2012.
    c. Title VI of the Civil Rights Act of 1964 (Title VI).
    d. Title 23, United States Code (U.S.C.), Section 109(h).
    e. National Environmental Policy Act (NEPA).
    f. Title 49, Code of Federal Regulations (CFR), Part 21.9(b).
    g. 23 CFR 200.9(b)(4).
    h. Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Uniform Act)
4. **What is the scope of this directive?** Consistent with paragraph 6-609 of EO 12898 and DOT Order 5610.2(a), this directive is limited to improving the internal management of the FHWA and is not intended to, nor does it, create any rights, benefits, or trust responsibility, substantive or procedural, enforceable at law or equity, by a party against the FHWA, its officers, or any person. This directive should not be construed to create any right to judicial review involving the compliance or noncompliance with this directive by FHWA, its officers, or any other person.

5. **What definitions are used in this directive?** The following terms, where used in this directive, shall have the following meanings[1]:
    a. **FHWA.** The Federal Highway Administration as a whole and one or more of its individual components.
    b. **Low-Income.** A person whose median household income is at or below the Department of Health and Human Services poverty guidelines.
    c. **Minority.** A person who is:
        1. (1) Black: a person having origins in any of the black racial groups of Africa;
        2. (2) Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
        3. (3) Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent;
        4. (4) American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or
        5. (5) Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islands.
    d. **Low-Income Population.** Any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.
    e. **Minority Population.** Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.
    f. **Adverse Effects.** The totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or disruption of human-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of FHWA programs, policies, or activities.
    g. **Disproportionately High and Adverse Effect on Minority and Low-Income Populations.** An adverse effect that:
        1. (1) is predominately borne by a minority population and/or a low-income population; or

2. (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population.

h. **Programs, Policies, and/or Activities.** All projects, programs, policies, and activities that affect human health or the environment, and that are undertaken, funded (in whole or in part), or approved by FHWA. These include, but are not limited to, permits, licenses, and financial assistance provided by FHWA. Interrelated projects within a system may be considered to be a single project, program, policy, or activity for purposes of this directive.

i. **Regulations and Guidance.** Regulations, programs, policies, guidance, and procedures promulgated, issued, or approved by FHWA.

6. **What is FHWA's policy concerning Environmental Justice?**

a. It is FHWA's longstanding policy to actively ensure nondiscrimination in federally funded activities. Furthermore, it is FHWA's continuing policy to identify and prevent discriminatory effects by actively administering its programs, policies, and activities to ensure that social impacts to communities and people are recognized early and continually throughout the transportation decisionmaking process--from early planning through implementation. Should the potential for discrimination be discovered, action to eliminate the potential shall be taken.

b. EO 12898, DOT Order 5610.2(a), and this directive reaffirm the principles of Title VI and related statutes, NEPA, 23 U.S.C. 109(h), and other Federal environmental laws, emphasizing the incorporation of those provisions with the environmental and transportation decisionmaking processes.

c. Under Title VI, each Federal agency is required to ensure that no person on the grounds of race, color, or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance. This statute applies to every program area in FHWA.

d. Under EO 12898, each Federal agency must identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. FHWA will implement this EO and the principles of DOT Order 5610.2(a) and EO 12898 by incorporating environmental justice principles in all FHWA programs, policies, and activities within the framework of existing laws, regulations, and guidance.

e. In complying with this directive, FHWA will rely upon existing authorities to collect necessary data and conduct research associated with environmental justice concerns, including, but not limited to, 49 CFR 21.9(b) and 23 CFR 200.9(b)(4).

f. The FHWA will administer its governing statutes so as to identify and avoid discrimination and disproportionately high and adverse effects on minority populations and low-income populations by:

1. (1) identifying and evaluating environmental, public health, and interrelated social and economic effects of FHWA programs, policies, and activities;

2. (2) proposing measures to avoid, minimize, and/or mitigate disproportionately high and adverse environmental or public health effects and interrelated social and economic effects, and providing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by FHWA programs, policies, and activities, where permitted by law and consistent with EO 12898;
3. (3) considering alternatives to proposed programs, policies, and activities where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts, where permitted by law and consistent with EO 12898; and
4. (4) providing public involvement opportunities and considering the results thereof, including providing meaningful access to public information concerning the human health or environmental impacts and soliciting input from affected minority populations and low-income populations in considering alternatives during the planning and development of alternatives and decisions.

7. **How should Environmental Justice principles be integrated into existing operations?**
    a. The principles outlined in this directive are required to be integrated into existing operations.
    b. Future rulemaking activities undertaken, and the development of any future guidance or procedures for FHWA programs, policies, or activities that affect human health or the environment, shall explicitly address FHWA compliance with EO 12898, with DOT Order 5610.2(a), and with this directive.
    c. The formulation of future FHWA policy statements and proposals for legislation that may affect human health or the environment will include consideration of the provisions of EO 12898 and this directive.
8. **What are the FHWA's responsibilities?** FHWA managers and staff are responsible for the following:
    a. Under Title VI, FHWA managers and staff must administer their programs in a manner to ensure that no person is excluded from participating in, denied the benefits of, or subjected to discrimination under any program or activity of FHWA because of race, color, or national origin.
    b. Under EO 12898, FHWA managers and staff must administer their programs to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of FHWA programs, policies, and activities on minority populations and low-income populations.
    c. The FHWA currently administers policies, programs, and activities that are subject to the requirements of NEPA, Title VI, the Uniform Act, Title 23 of the United States Code, and other statutes that involve human health or environmental matters, or interrelated social and economic impacts. These requirements will be administered to identify the risk of discrimination early in the development of FHWA's programs, policies, and activities so that positive corrective action can be taken. In implementing these requirements, the following information should be obtained where relevant, appropriate, and practical:

1. (1) population served and/or affected by race, color, or national origin, and income level;
2. (2) proposed steps to guard against disproportionately high and adverse effects on persons on the basis of race, color, or national origin; and
3. (3) present and proposed membership by race, color, or national origin, in any planning or advisory body that is part of the program.

d. Following the guidance set forth in this directive, FHWA managers and staff shall ensure that FHWA programs, policies, and activities for which they are responsible do not have a disproportionately high and adverse effect on minority populations or low-income populations.
e. When determining whether a particular program, policy, or activity will have disproportionately high and adverse effects on minority and low-income populations, FHWA managers and staff should take into account mitigation and enhancement measures and potential offsetting benefits to the affected minority and/or low-income populations. Other factors that may be taken into account include design, comparative impacts, and the relevant number of similar existing system elements in nonminority and non-low-income areas.
f. The FHWA managers and staff will ensure that the programs, policies, and activities that will have disproportionately high and adverse effects on minority populations and/or low-income populations will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effects are not practicable. In determining whether a mitigation measure or an alternative is "practicable," the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects will be taken into account.
g. The FHWA managers and staff will also ensure that any of their respective programs, policies, or activities that have the potential for disproportionately high and adverse effects on populations protected by Title VI ("protected populations") will only be carried out if:
    1. (1) a substantial need for the program, policy or activity exists, based on the overall public interest; and
    2. (2) alternatives that would have less adverse effects on protected populations have either:
        a. (a) adverse social, economic, environmental, or human health impacts that are severe; or
        b. (b) would involve increased costs of an extraordinary magnitude.
h. Any relevant finding identified during the implementation of this directive must be included in the planning or NEPA documentation that is prepared for the appropriate program, policy, or activity.
i. Environmental and civil rights statutes, along with Executive Orders require that the environmental effects on minority populations and low-income populations be addressed. Under Title VI, each Federal agency is required to ensure that no person on grounds of race, color, or national origin is excluded from participation in, denied the benefits of, or in any other way subjected to discrimination under any program or activity receiving Federal assistance. Therefore, any member of a protected class under Title VI may file a complaint with the FHWA Office of

Civil Rights, alleging that he or she was subjected to disproportionately high and adverse health or environmental effects.

9. **Where can I obtain additional guidance?** For more information or additional guidance related to Environmental Justice, please see the FHWA Environmental Justice web site.

Victor M. Mendez
Administrator

[1] These definitions are intended to be consistent with the draft definitions for EO 12898 that have been issued by the Council on Environmental Quality (CEQ) and the Environmental Protection Agency (EPA). To the extent that these definitions vary from the CEQ and EPA draft definitions, they reflect further refinements deemed necessary to tailor the definitions to fit within the context of the FHWA program.

Appendix III: Census 2010 Definition of Subject Characteristics

INTRODUCTION

The 2010 Census data products provide, except where specifically noted, counts of the resident population of the United States. The U.S. resident population includes everyone whose usual place of residence was in the 50 states and the District of Columbia at the time of the 2010 Census. In the design of summary file tables, the Census Bureau strives for consistency in terminology and cell label structure to facilitate processing, review, and usability. Data users see the same patterns repeated in various cross-tabulated tables. Unfortunately, at times, the use of a pattern creates illogical results, such as the display of data for the population 65 years and over in juvenile correctional facilities.

POPULATION CHARACTERISTICS

Age

The data on age were derived from answers to a two-part question (i.e., age and date of birth). The age classification for a person in census tabulations is the age of the person in completed years as of April 1, 2010, the census reference date. Both age and date of birth responses are used in combination to B-2 Definitions of Subject Characteristics determine the most accurate age for the person as of the census reference date. Inconsistently reported and missing values are assigned or allocated based on the values of other variables for that person, from other people in the household or from people in other households (i.e., hot-deck imputation).
Age data are tabulated in age groupings and single years of age. Data on age also are used to classify other characteristics in census tabulations.

Median Age—This measure divides the age distribution into two equal parts: one-half of the cases falling below the median value and one-half above the value. Median age is computed on the basis of a single year-of-age distribution using a linear interpolation method.

Limitation of the data—There is some tendency for respondents to provide their age as of the date they completed the census questionnaire or interview, not their age as of the census reference date. The two-part question and editing procedures have attempted to minimize the effect of this reporting problem on tabulations. Additionally, the current census age question displays the census reference date prominently, and interviewer training emphasizes the importance of collecting age as of the reference date.
Respondents sometimes round a person's age up if they were close to having a birthday. For most single years of age, the misstatements are largely offsetting. The problem is most pronounced at age 0. Also, there may have been more rounding up to age 1 to avoid reporting age as 0 years. (Age in completed months was not collected for infants under age 1.) Editing procedures correct this problem.
There is some respondent resistance to reporting the ages of babies in completed years (i.e., 0 years old when the baby is under 1 year old). Instead, babies' ages are sometimes reported in months. The two-part question along with enhanced editing and data capture procedures correct much of this problem before the age data are finalized in tabulations. Additionally, the current census age question includes an instruction for babies' ages to be answered as "0" years old when they are under 1 year old.
Age heaping is a common age misreporting error. Age heaping is the tendency for people to over report ages (or years of birth) that end in certain digits (commonly digits "0" or "5") and underreport ages or years of birth ending in other digits. The two-part question helps minimize the effect of age heaping on the final tabulations.

Age data for centenarians have a history of data quality challenges. The counts in the 1970 and 1980 Censuses for people 100 years and over were substantially overstated. Editing and data collection methods have been enhanced in order to meet the data quality challenges for this population.
It also has been documented that the population aged 69 in the 1970 Census and the population aged 79 in the 1980 Census were overstated. The population aged 89 in 1990 and the population aged 99 in 2000 did not have an overstated count. (For more information on the design of the age question, see the "Comparability" section below.)

Comparability—Age data have been collected in every census. However, there have been some differences in the way they have been collected and processed over time. In the 2010 Census (as in Census 2000), each individual provided both an age and an exact date of birth. The 1990 Census collected age and year of birth. Prior censuses had collected month and quarter of birth in addition to age and year of birth. The 1990 Census change was made so that coded information could be obtained for both age and year of birth.

In each census since 1940, the age of a person was assigned when it was not reported. In censuses before

1940, with the exception of 1880, people of unknown age were shown as a separate category. Since 1960, assignment of unknown age has been performed by a general procedure described as “imputation.” The specific procedures for imputing age have been different in each census. (For more information on imputation, see “2010 Census: Operational Overview and Accuracy of the Data.”)
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Alaska Native Tribe
See “Race.”

American Indian Tribe
See “Race.”

Foster Children
See “Other Nonrelatives in Household Type and Relationship.”

Hispanic or Latino Origin
The data on the Hispanic or Latino population were derived from answers to a question that was asked of all people. The terms “Hispanic,” “Latino,” and “Spanish” are used interchangeably. Some respondents identify with all three terms, while others may identify with only one of these three specific terms. People who identify with the terms “Hispanic,” “Latino,” or “Spanish” are those who classify themselves in one of the specific Hispanic, Latino, or Spanish categories listed on the questionnaire (“Mexican,” “Puerto Rican,” or “Cuban”) as well as those who indicate that they are “another Hispanic, Latino, or Spanish origin.” People who do not identify with one of the specific origins listed on the questionnaire but indicate that they are “another Hispanic, Latino, or Spanish origin” are those whose origins are from Spain, the Spanish-speaking countries of Central or South America, or the Dominican Republic. Up to two write-in responses to the “another Hispanic, Latino, or Spanish origin” category are coded.

Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person’s parents or ancestors before their arrival in the United States. People who identify their origin as Hispanic, Latino, or Spanish may be any race.

Some tabulations are shown by the origin of the householder. In all cases where the origin of households, families, or occupied housing units is classified as Hispanic, Latino, or Spanish, the origin of the householder is used. (See the discussion of householder under “Household Type and Relationship.”)
If an individual did not provide a Hispanic origin response, his or her origin was allocated using specific rules of precedence of household relationship. For example, if origin was missing for a natural-born child in the household, then either the origin of the householder, another natural-born child, or spouse of the householder was allocated.

If Hispanic origin was not reported for anyone in the household and origin could not be obtained from a response to the race question, then their origin was assigned based on their prior census record (either from Census 2000 or the American Community Survey), if available. If not, then the Hispanic origin of a householder in a previously processed household with the same race was allocated. (For more information on allocation, see “2010 Census: Operational Overview and Accuracy of the Data.”) As in Census 2000, surnames (Spanish and non-Spanish) were used to assist in allocating an origin or race.

Comparability—There are four changes to the Hispanic origin question for the 2010 Census. First, the wording of the question differs from that in 2000. In 2000, the question asked if the person was “Spanish/ Hispanic/Latino.” In 2010, the question asks if the person is “of Hispanic, Latino, or Spanish origin.” Second, in 2000, the question provided an instruction, “Mark ý the ‘**No’** box if **not** Spanish/Hispanic/ Latino.” The 2010 Census question provided no specific instruction for non-Hispanics. Third, in 2010, the “Yes, another Hispanic, Latino, or Spanish origin” category provided examples of six Hispanic origin groups (Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on) and instructed respondents to “print origin.” In 2000, no Hispanic origin examples were given. Finally, the fourth change was the addition of a new instruction in the 2010 Census that was not used in Census 2000. The instruction is stated as follows: “NOTE: Please answer BOTH Question 8 about Hispanic origin and Question 9 about race. For this census, Hispanic origins are not races.”

There were two changes to the Hispanic origin question for Census 2000. First, the sequence of the race and Hispanic origin questions for Census 2000 differs from that in 1990; in 1990, the race question preceded the Hispanic origin question. Testing prior to Census 2000 indicated that response to the

Hispanic origin question could be improved by placing it before the race question without affecting the response to the race question. Second, there was an instruction preceding the Hispanic origin question indicating that respondents should answer both the Hispanic origin and the race questions. This instruction was added to give emphasis to the distinct concepts of the Hispanic origin and race questions, and emphasized the need for both pieces of information.

Furthermore, there was a change in the processing of the Hispanic origin and race responses. In the 1990 census, respondents provided Hispanic origin responses in the race question and race responses in the Hispanic origin question. In 1990, the Hispanic origin question and the race question had separate edits; therefore, although information may have been present on the questionnaire, it was not fully utilized due to the discrete nature of the edits. However, for Census 2000, there was a joint race and Hispanic origin edit that utilized Hispanic origin and race information regardless of the location.

Household Type and Relationship

Household

A household includes all the people who occupy a housing unit. (People not living in households are classified as living in group quarters.) A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live separately from any other people in the building and which have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living arrangements. In the 2010 Census data products, the count of households or householders equals the count of occupied housing units.

Average Household Size—Average household size is a measure obtained by dividing the number of people in households by the number of households. In cases where people in households are crossclassified by race or Hispanic origin, people in the household are classified by the race or Hispanic origin of the householder rather than the race or Hispanic origin of each individual. Average household size is rounded to the nearest hundredth.

Relationship to Householder

Householder—The data on relationship to householder were derived from answers to Question 2, which was asked of all people in housing units. One person in each household is designated as the householder. In most cases, this is the person, or one of the people, in whose name the home is owned, being bought, or rented and who is listed on line one of the questionnaire. If there is no such person in the household, any adult household member 15 years old and over could be designated as the householder. Households are classified by type according to the sex of the householder and the presence of relatives. Two types of householders are distinguished: a family householder and a nonfamily householder. A family householder is a householder living with one or more individuals related to him or her by birth, marriage, or adoption. The householder and all people in the household related to him or her are family members. A nonfamily householder is a householder living alone or with nonrelatives only.

Spouse—The “spouse” category includes a person identified as the husband or wife of the householder and who is of the opposite sex. For most of the tables, unless otherwise specified, it does not include same-sex spouses even if a marriage was performed in a state issuing marriage certificates for same-sex couples.

Child—The “child” category includes a son or daughter by birth, a stepchild, or adopted child of the householder, regardless of the child’s age or marital status. The category excludes sons-in-law, daughtersin-law, and foster children.

Biological Son or Daughter—The son or daughter of the householder by birth.

Adopted Son or Daughter—The son or daughter of the householder by legal adoption. If a stepson, stepdaughter, or foster child has been legally adopted by the householder, the child is then classified as an adopted child.

Stepson or Stepdaughter—The son or daughter of the householder through marriage but not by birth, excluding sons-in-law and daughters-in-law. If a stepson or stepdaughter of the householder has been legally adopted by the householder, the child is then classified as an adopted child.

Own Children—A child under 18 years who is a son or daughter by birth, a stepchild, or an adopted child

of the householder is included in the “own children” category.

Related Children—Any child under 18 years old who is related to the householder by birth, marriage, or adoption is included in the “related children” category. Children, by definition, exclude persons under 18 years who maintain households or are spouses or unmarried partners of householders.

Other Relatives—In tabulations, the category “other relatives” includes any household member related to the householder by birth, marriage, or adoption but not included specifically in another relationship category. In certain detailed tabulations, the following categories may be shown:

Grandchild—The grandson or granddaughter of the householder.

Brother/Sister—The brother or sister of the householder, including stepbrothers, stepsisters, and brothers and sisters by adoption. Brothers-in-law and sisters-in-law are included in the “Other Relative” category on the questionnaire.

Parent—The father or mother of the householder, including a stepparent or adoptive parent. Fathers-inlaw and mothers-in-law are included in the “Parent-in-law” category on the questionnaire.

Parent-in-Law—The mother-in-law or father-in-law of the householder.

Son-in-law or Daughter-in-Law—The spouse of the child of the householder.

Other Relatives—Anyone not listed in a reported category above who is related to the householder by birth, marriage, or adoption (brother-in-law, grandparent, nephew, aunt, cousin, and so forth).

Nonrelatives—This category includes any household member not related to the householder by birth, marriage, or adoption. The following categories may be presented in more detailed tabulations:

Roomer or Boarder—A roomer or boarder is a person who lives in a room in the household of the householder. Some sort of cash or noncash payment (e.g., chores) is usually made for their living accommodations.

Housemate or Roommate—A housemate or roommate is a person aged 15 years and over who is not related to the householder and who shares living quarters primarily in order to share expenses.

Unmarried Partner—An unmarried partner is a person aged 15 years and over who is not related to the householder, who shares living quarters, and who has a close personal relationship with the householder. Responses of “same-sex spouse” are edited into this category.

Other Nonrelatives—Anyone who is not related by birth, marriage, or adoption to the householder and who is not described by the categories given above. Unrelated foster children or unrelated foster adults are included in this category, “Other Nonrelatives.” A foster child who has been adopted by the householder is classified as an adopted child.

When relationship is not reported for an individual, it is allocated according to the responses for age and sex for that person while maintaining consistency with responses for other individuals in the household. (For more information on allocation, see “2010 Census: Operational Overview and Accuracy of the Data.”)

Families

Family Type—A family consists of a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder’s family in tabulations. Thus, the number of family households is equal to the number of families, but family households may include more members than do families. A household can contain only one family for purposes of tabulations. Not all households contain families since a household may be comprised of a group of unrelated people or of one person living alone—these are called “nonfamily households.” Same-sex unmarried partner households are included in the “family households” category only if there is at least one additional person related to the householder by birth or adoption.
Families are classified by type as either a “husband-wife family” or “other family” according to the sex of the householder and the presence of relatives. The data on family type are based on answers to questions

on sex and relationship.

Husband-Wife Family—A family in which the householder and his or her spouse of the opposite sex are enumerated as members of the same household.

Other Family:
• *Male householder, no wife present*—A family with a male householder and no wife of householder present.
• *Female householder, no husband present*—A family with a female householder and no husband of householder present.

Average Family Size—Average family size is a measure obtained by dividing the number of people in families by the total number of families (or family householders). In cases where the measures "people in family" or "people per family" are cross-tabulated by race or Hispanic origin, the race or Hispanic origin refers to the householder rather than the race or Hispanic origin of each individual. Nonrelatives of the householder living in family households are not counted as part of the family. They are included in the count of average household size. Average family size is rounded to the nearest hundredth.

Multigenerational Household
A multigenerational household is one that contains three or more parent-child generations; for example, the householder, child of householder (either biological, stepchild, or adopted child), and grandchildren of householder. A householder with a parent or parent-in-law of the householder and a child of the householder may also be a multigenerational household.

Unmarried-Partner Household
An unmarried-partner household is a household other than a "husband-wife household" that includes a householder and an unmarried partner. An "unmarried partner" can be of the same sex or of the opposite sex as the householder. An "unmarried partner" in an "unmarried-partner household" is an adult who is unrelated to the householder but shares living quarters and has a close personal relationship with the householder. An unmarried-partner household also may be a family household or a nonfamily household, depending on the presence or absence of another person in the household who is related to the householder. There may be only one unmarried partner per household, and an unmarried partner may not be included in a husband-wife household, as the householder cannot have both a spouse and an unmarried partner. Same-sex married-couple households are edited into this category.
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Comparability—The 2000 relationship category "Natural-born son/daughter" has been replaced by "Biological son or daughter" for 2010. The category "Foster child" was dropped due to space limitations on the 2010 questionnaire. Foster children in 2010 are included in the category "Other nonrelatives." They cannot be tabulated separately. The term "married-couple" family in tabulations has been replaced by "husband-wife" family. In all standard 2010 tabulations, the term "spouse" refers to only a person who is married to and living with the householder and is of the opposite sex. Data for unmarried partners are comparable to data presented in 2000. Data on same-sex couple households will be presented for the first time in a special product.

Institutionalized Population
See "Group Quarters."

Noninstitutionalized Population
See "Group Quarters."

Race
The data on race were derived from answers to the question on race that was asked of all people. The U.S. Census Bureau collects race data in accordance with guidelines provided by the U.S. Office of Management and Budget (OMB), and these data are based on self-identification. The racial categories included in the census questionnaire generally reflect a social definition of race recognized in this country and not an attempt to define race biologically, anthropologically, or genetically. In addition, it is recognized that the categories of the race item include racial and national origin or sociocultural groups. People may choose to report more than one race to indicate their racial mixture, such as "American Indian" and "White." People who identify their origin as Hispanic, Latino, or Spanish may be any race.
The racial classifications used by the Census Bureau adhere to the October 30, 1997, *Federal Register*

notice entitled, “Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity” issued by OMB. These standards govern the categories used to collect and present federal data on race and ethnicity. OMB requires five minimum categories (White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander) for race. The race categories are described below with a sixth category, “Some Other Race,” added with OMB approval. In addition to the five race groups, OMB also states that respondents should be offered the option of selecting one or more races.
If an individual did not provide a race response, the race or races of the householder or other household members were imputed using specific rules of precedence of household relationship. For example, if race was missing for a natural-born child in the household, then either the race or races of the householder, another natural-born child, or spouse of the householder were allocated.
If race was not reported for anyone in the household, then their race was imputed based on their prior census record (either from Census 2000 or the American Community Survey), if available. If not, then the race or races of a householder in a previously processed household were allocated.
Definitions from OMB guide the Census Bureau in classifying written responses to the race question:

White—A person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicate their race as “White” or report entries such as Irish, German, Italian, Lebanese, Arab, Moroccan, or Caucasian.

Black or African American—A person having origins in any of the Black racial groups of Africa. It includes people who indicate their race as “Black, African Am., or Negro” or report entries such as African American, Kenyan, Nigerian, or Haitian.
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American Indian or Alaska Native—A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment. This category includes people who indicate their race as “American Indian or Alaska Native” or report entries such as Navajo, Blackfeet, Inupiat, Yup’ik, or Central American Indian groups or South American Indian groups.
Respondents who identified themselves as “American Indian or Alaska Native” were asked to report their enrolled or principal tribe. Therefore, tribal data in tabulations reflect the written entries reported on the questionnaires. Some of the entries (for example, Metlakatla Indian Community and Umatilla) represent reservations or a confederation of tribes on a reservation. The information on tribe is based on self-identification and, therefore, does not reflect any designation of federally or state-recognized tribe. The information for the 2010 Census was derived from the American Indian and Alaska Native Tribal Classification List for Census 2000 and updated from 2002 to 2009 based on the annual *Federal Register* notice entitled “Indian Entities Recognized and Eligible to Receive Services From the United States Bureau of Indian Affairs,” Department of the Interior, Bureau of Indian Affairs, issued by OMB, and through consultation with American Indian and Alaska Native communities and leaders.
The American Indian categories shown in Summary Files 1 and 2 represent tribal groupings, which refer to the combining of individual American Indian tribes, such as Fort Sill Apache, Mescalero Apache, and San Carlos Apache, into the general Apache tribal grouping.
The Alaska Native categories shown in Summary Files 1 and 2 represent tribal groupings, which refer to the combining of individual Alaska Native tribes, such as King Salmon Tribe, Native Village of Kanatak, and Sun’aq Tribe of Kodiak, into the general Aleut tribal grouping.

Asian—A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. It includes people who indicate their race as “Asian Indian,” “Chinese,” “Filipino,” “Korean,” “Japanese,” “Vietnamese,” and “Other Asian” or provide other detailed Asian responses.
Asian Indian—Includes people who indicate their race as “Asian Indian” or report entries such as India or East Indian.
Bangladeshi—Includes people who provide a response such as Bangladeshi or Bangladesh.
Bhutanese—Includes people who provide a response such as Bhutanese or Bhutan.
Burmese—Includes people who provide a response such as Burmese or Burma.
Cambodian—Includes people who provide a response such as Cambodian or Cambodia.
Chinese—Includes people who indicate their race as “Chinese” or report entries such as China or Chinese American. In some census tabulations, written entries of Taiwanese are included with Chinese, while in others they are shown separately.

Filipino—Includes people who indicate their race as "Filipino" or report entries such as Philippines or Filipino American.
Hmong—Includes people who provide a response such as Hmong or Mong.
Indonesian—Includes people who provide a response such as Indonesian or Indonesia.
Japanese—Includes people who indicate their race as "Japanese" or report entries such as Japan or Japanese American.
Korean—Includes people who indicate their race as "Korean" or report entries such as Korea or Korean American.
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Laotian—Includes people who provide a response such as Laotian or Laos.
Malaysian—Includes people who provide a response such as Malaysian or Malaysia.
Nepalese—Includes people who provide a response such as Nepalese or Nepal.
Pakistani—Includes people who provide a response such as Pakistani or Pakistan.
Sri Lankan—Includes people who provide a response such as Sri Lankan or Sri Lanka.
Taiwanese—Includes people who provide a response such as Taiwanese or Taiwan.
Thai—Includes people who provide a response such as Thai or Thailand.
Vietnamese—Includes people who indicate their race as "Vietnamese" or report entries such as Vietnam or Vietnamese American.
Other Asian, specified—Includes people who provide a response of another Asian group, such as Iwo Jiman, Maldivian, Mongolian, Okinawan, or Singaporean.
Other Asian, not specified—Includes respondents who checked the Other Asian response category on the census questionnaire and did not write in a specific group or wrote in a generic term such as "Asian" or "Asiatic."

Native Hawaiian or Other Pacific Islander—A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. It includes people who indicate their race as "Native Hawaiian," "Guamanian or Chamorro," "Samoan," and "Other Pacific Islander" or provide other detailed Pacific Islander responses.
Native Hawaiian—Includes people who indicate their race as "Native Hawaiian" or report entries such as Part Hawaiian or Hawaiian.
Samoan—Includes people who indicate their race as "Samoan" or report entries such as American Samoan or Western Samoan.
Tongan—Includes people who provide a response such as Tongan or Tonga.
Other Polynesian—Includes people who provide a response of another Polynesian group, such as Tahitian, Tokelauan, or wrote in a generic term such as "Polynesian."
Guamanian or Chamorro—Includes people who indicate their race as "Guamanian or Chamorro" or report entries such as Chamorro or Guam.
Marshallese—Includes people who provide a response such as Marshallese or Marshall Islands.
Other Micronesian—Includes people who provide a response of another Micronesian group, such as Carolinian, Chuukese, I-Kiribati, Kosraean, Mariana Islander, Palauan, Pohnpeian, Saipanese, Yapese, or wrote in a generic term such as "Micronesian."
Fijian—Includes people who provide a response such as Fijian or Fiji.
Other Melanesian—Includes people who provide a response of another Melanesian group, such as Guinean, Hebrides Islander, Solomon Islander, or wrote in a generic term such as "Melanesian."
Other Pacific Islander, not specified—Includes respondents who checked the Other Pacific Islander response category on the census questionnaire and did not write in a specific group or wrote in a generic term such as "Pacific Islander."

Some Other Race—Includes all other responses not included in the "White," "Black or African American," "American Indian or Alaska Native," "Asian," and "Native Hawaiian or Other Pacific Islander" race categories described above. Respondents reporting entries such as multiracial, mixed, interracial, or a Hispanic,
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Latino, or Spanish group (for example, Mexican, Puerto Rican, Cuban, or Spanish) in response to the race question are included in this category.

Two or More Races—People may choose to provide two or more races either by checking two or more race response check boxes, by providing multiple responses, or by some combination of check boxes and other responses. The race response categories shown on the questionnaire are collapsed into the five minimum race groups identified by OMB and the Census Bureau's "Some Other Race" category. For data product purposes, "Two or More Races" refers to combinations of two or more of the following race categories:

1. White
2. Black or African American
3. American Indian or Alaska Native
4. Asian
5. Native Hawaiian or Other Pacific Islander
6. Some Other Race

There are 57 possible combinations (see Figure B-1) involving the race categories shown above. Thus, according to this approach, a response of “White” and “Asian” was tallied as Two or More Races, while a response of “Japanese” and “Chinese” was not because “Japanese” and “Chinese” are both Asian responses.

Figure B-1.

Two or More Races (57 Possible Specified Combinations)

1. White; Black or African American
2. White; American Indian and Alaska Native
3. White; Asian
4. White; Native Hawaiian and Other Pacific Islander
5. White; Some Other Race
6. Black or African American; American Indian and Alaska Native
7. Black or African American; Asian
8. Black or African American; Native Hawaiian and Other Pacific Islander
9. Black or African American; Some Other Race
10. American Indian and Alaska Native; Asian
11. American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander
12. American Indian and Alaska Native; Some Other Race
13. Asian; Native Hawaiian and Other Pacific Islander
14. Asian; Some Other Race
15. Native Hawaiian and Other Pacific Islander; Some Other Race
16. White; Black or African American; American Indian and Alaska Native
17. White; Black or African American; Asian
18. White; Black or African American; Native Hawaiian and Other Pacific Islander
19. White; Black or African American; Some Other Race
20. White; American Indian and Alaska Native; Asian
21. White; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander

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22. White; American Indian and Alaska Native; Some Other Race
23. White; Asian; Native Hawaiian and Other Pacific Islander
24. White; Asian; Some Other Race
25. White; Native Hawaiian and Other Pacific Islander; Some Other Race
26. Black or African American; American Indian and Alaska Native; Asian
27. Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander
28. Black or African American; American Indian and Alaska Native; Some Other Race
29. Black or African American; Asian; Native Hawaiian and Other Pacific Islander
30. Black or African American; Asian; Some Other Race
31. Black or African American; Native Hawaiian and Other Pacific Islander; Some Other Race
32. American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander
33. American Indian and Alaska Native; Asian; Some Other Race
34. American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some Other Race
35. Asian; Native Hawaiian and Other Pacific Islander; Some Other Race
36. White; Black or African American; American Indian and Alaska Native; Asian
37. White; Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander
38. White; Black or African American; American Indian and Alaska Native; Some Other Race
39. White; Black or African American; Asian; Native Hawaiian and Other Pacific Islander
40. White; Black or African American; Asian; Some Other Race
41. White; Black or African American; Native Hawaiian and Other Pacific Islander; Some Other Race
42. White; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander
43. White; American Indian and Alaska Native; Asian; Some Other Race
44. White; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some Other Race

45. White; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race
46. Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander
47. Black or African American; American Indian and Alaska Native; Asian; Some Other Race
48. Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some Other Race
49. Black or African American; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race
50. American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race
51. White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander
52. White; Black or African American; American Indian and Alaska Native; Asian; Some Other Race
53. White; Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some Other Race
54. White; Black or African American; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race
55. White; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race
56. Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race
57. White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race

Race Concepts
Given the many possible ways of displaying data on race, data products will provide varying levels of detail. There are several additional concepts used to display race information for the six major race categories (White; Black or African American; American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; and Some Other Race) and the various details within these groups.
The concept "race *alone*" includes people who reported a single entry (e.g., Korean) and no other race, as well as people who reported two or more entries within the same major race group (e.g., Asian). For example, respondents who reported Korean and Vietnamese are part of the larger "Asian alone" race group.
The concept "race *alone or in combination*" includes people who reported a single race alone (e.g., Asian) and people who reported that race in combination with one or more of the other major race groups (e.g., White, Black or African American, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, and Some Other Race). The concept "race *alone or in combination*" concept, therefore, represents the maximum number of people who reported as that race group, either alone or in combination with one or more additional race(s). The sum of the six individual race "alone-or-in-combination" categories may add to more than the total population because people who reported more than one race were tallied in each race category.
The concept "race *alone or in any combination*" applies only to detailed race groups, such as American Indian and Alaska Native tribes, detailed Asian groups, and detailed Pacific Islander groups. For example, Korean alone or in any combination includes people who reported a single response (e.g., Korean), people who reported Korean and another Asian group (e.g., Korean and Vietnamese), and people who reported Korean in combination with one or more other non-Asian race groups (e.g., White, Black or African American, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, or Some Other Race).

Coding of Write-In Entries—The 2010 Census included an automated review, computer edit, and coding operation on a 100 percent basis for the write-in responses to the race question, similar to that used in Census 2000. There were two types of coding operations: 1) automated coding where a write-in response was automatically coded if it matched a write-in response already contained in a database known as the "master file" and 2) expert coding, which took place when a write-in response did not match an entry already on the master file and was sent to expert coders familiar with the subject matter. During the coding process, subject-matter specialists reviewed and coded written entries from the response areas on the race question: American Indian or Alaska Native, Other Asian, Other Pacific Islander, and Some Other Race. Up to 30 text characters were collected from each race write-in area, and up to two responses were coded and tabulated from each separate race write-in area.

Comparability—There are three changes to the race question for the 2010 Census. First, the note to respondents was changed to read, "Please answer BOTH Question 8 about Hispanic origin and Question 9 about race. For this census, Hispanic origins are not races." Second, the wording of the race question was changed from "What is this person's race? Mark ý one or more races to indicate what this person considers

himself/herself to be" to "What is Person 1's race? Mark ý one or more boxes." Third, examples were added to the "Other Asian" response categories (Hmong, Laotian, Thai, Pakistani, Cambodian, and so on) and the "Other Pacific Islander" response categories (Fijian, Tongan, and so on).
The treatment of ethnic or national origin write-in responses to the race question also was different. For Census 2000, data on single ancestry by race from the 1990 census were used to help make decisions about how to code ethnic or national origin responses into one or more race categories. Essentially, if 90 percent or more of people who reported a single, specific ancestry reported in a specific race category in 1990 (e.g., more than 90 percent of people indicating Haitian ancestry reported as Black in the question on race), then that race was used as the Census 2000 response. This 90 percent rule was not applied to write-in responses of American Indian and Alaska Native tribes, Asian groups, or Pacific Islander groups because the question on race was designed explicitly to obtain these types of responses. For example, a write-in response of "Haitian and Moroccan" was coded as "Black" and "Some Other Race." "Moroccan" was coded as "Some Other Race" because less than 90 percent of people indicating Moroccan ancestry reported in one specific race category in the question on race.
For the 2010 Census, ethnic or national origin write-in responses to the race question were coded into one or more of the five OMB race categories, according to the 1997 OMB definitions of race. For example, a 2010 Census write-in response of "Haitian and Moroccan" was coded as "Black" and "White" following OMB's definitions. If it was not possible to determine which OMB race category the ethnic group or national origin should be coded into, it was included in the "Some Other Race" category.
For more information about comparability to data collected in previous censuses, see Census 2000 Summary File 1 Technical Documentation prepared by the U.S. Census Bureau, 2001, at <www.census.gov /cen2000/doc/sf1.pdf>.

Sex

Individuals were asked to mark either "male" or "female" to indicate their sex. For most cases in which sex was not reported, the appropriate entry was determined from the person's given (i.e., first) name and household relationship. Otherwise, sex was allocated according to the relationship to the householder and the age of the person. (For more information on allocation, see "2010 Census: Operational Overview and Accuracy of the Data.")

Sex Ratio—The sex ratio represents the balance between the male and female populations. Ratios above 100 indicate a larger male population, and ratios below 100 indicate a larger female population. This measure is derived by dividing the total number of males by the total number of females and then multiplying by 100. It is rounded to the nearest tenth.

Comparability—A question on the sex of individuals has been asked of the total population in every census.

Stepson or Stepdaughter

See "Household Type and Relationship."

Type of Institution

See "Group Quarters."

LIVING QUARTERS

All living quarters are classified as either housing units or group quarters. Living quarters are usually found in structures that are intended for residential use, but they also may be found in structures intended for nonresidential use. Any place where someone lives is considered to be a living quarters, such as an apartment, dormitory, shelter for people experiencing homelessness, barracks, or nursing facility. Even tents, old railroad cars, and boats are considered to be living quarters if someone claims them as his or

her residence. Note that structures that do not meet the definition of a living quarters at the time of listing may meet the definition at the time of enumeration. Some types of structures, such as those cited in items 1 and 2 below, are included in address canvassing operations as place holders, with the final decision on their living quarters status made during enumeration. Other types of structures, such as those cited in items 3 and 4 below, are not included in the address canvassing operation.
The following examples are not considered living quarters:
1. Structures, such as houses and apartments, that resemble living quarters but are being used entirely for nonresidential purposes, such as a store or an office, or used for the storage of business supplies or inventory, machinery, or agricultural products, are not enumerated.
2. Single units as well as units in multiunit residential structures under construction in which no one is living or staying are not considered living quarters until construction has reached the point where all

exterior windows and doors are installed and final usable floors are in place. Units that do not meet these criteria are not enumerated.
3. Structures in which no one is living or staying that are open to the elements—that is, the roof, walls, windows, and/or doors no longer protect the interior from the elements—are not enumerated. Also, vacant structures with a posted sign indicating that they are condemned or they are to be demolished are not enumerated.
4. Boats, recreational vehicles (RVs), tents, caves, and similar types of shelter that no one is using as a usual residence are **not** considered living quarters and are not enumerated.

Group Quarters
Group quarters are places where people live or stay in a group living arrangement, which are owned or managed by an entity or organization providing housing and/or services for the residents. This is not a typical household-type living arrangement. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. People living in group quarters are usually not related to each other.
Group quarters include such places as college residence halls, residential treatment centers, skilled-nursing facilities, group homes, military barracks, correctional facilities, and workers' dormitories.

Institutional Group Quarters
Institutional group quarters (group quarters type codes 101–106, 201–203, 301, 401–405) are facilities that house those who are primarily ineligible, unable, or unlikely to participate in the labor force while residents.

Correctional Facilities for Adults (codes 101–106)—Correctional facilities for adults include the following types:
Federal detention centers (code 101)—Federal detention centers are stand alone, generally multi-level, federally operated correctional facilities that provide "short-term" confinement or custody of adults pending adjudication or sentencing. These facilities may hold pretrial detainees, holdovers, sentenced offenders, and Immigration and Customs Enforcement (ICE) inmates, formerly called Immigration and Naturalization Service (INS) inmates. These facilities include Metropolitan Correctional Centers (MCCs), Metropolitan Detention Centers (MDCs), Federal Detention Centers (FDCs), Bureau of Indian Affairs Detention Centers, ICE Service Processing Centers, and ICE Contract Detention Facilities.
Federal (code 102) and state (code 103) prisons—Federal and state prisons are adult correctional facilities where people convicted of crimes serve their sentences. Common names include prison, penitentiary, correctional institution, federal or state correctional facility, and conservation camp. The prisons are classified by two types of control: 1) "federal" (operated by or for the Bureau of Prisons of the U.S. Department of Justice) and 2) "state." Residents who are forensic patients or criminally insane are classified on the basis of where they resided at the time of enumeration. Patients in hospitals (units, wings, or floors) operated by or for federal or state correctional authorities are counted in the prison population. Other forensic patients will be enumerated in psychiatric hospital units and floors for longterm non-acute patients. This category may include privately operated correctional facilities.
Local jails and other municipal confinement facilities (code 104)—Local jails and other municipal confinement facilities are correctional facilities operated by or for counties, cities, and American Indian and Alaska Native tribal governments. These facilities hold adults detained pending adjudication and/or people committed after adjudication. This category also includes work farms and camps used to hold people awaiting trial or serving time on relatively short sentences. Residents who are forensic patients or criminally insane are classified on the basis of where they resided at the time of enumeration. Patients in hospitals (units, wings, or floors) operated by or for local correctional authorities are counted in the jail population. Other forensic patients will be enumerated in psychiatric hospital units and floors for long-term non-acute care patients. This category may include privately operated correctional facilities.
Correctional residential facilities (code 105)—Correctional residential facilities are community-based facilities operated for correctional purposes. The facility residents may be allowed extensive contact with the community, such as for employment or attending school, but are obligated to occupy the premises at night. Examples of correctional residential facilities are halfway houses, restitution centers, and prerelease, work release, and study centers.
Military disciplinary barracks and jails (code 106)—Military disciplinary barracks and jails are correctional facilities managed by the military to hold those awaiting trial or convicted of crimes.

Juvenile Facilities (codes 201–203)—Juvenile facilities include the following:
Group homes for juveniles (non-correctional) (code 201)—Group homes for juveniles include communitybased group living arrangements for youth in residential settings that are able to accommodate three

or more clients of a service provider. The group home provides room and board and services, including behavioral, psychological, or social programs. Generally, clients are not related to the caregiver or to each other. Examples of non-correctional group homes for juveniles are maternity homes for unwed mothers, orphanages, and homes for abused and neglected children in need of services. Group homes for juveniles do not include residential treatment centers for juveniles or group homes operated by or for correctional authorities.

Residential treatment centers for juveniles (non-correctional) (code 202)—Residential treatment centers for juveniles include facilities that provide services primarily to youth on-site in a highly structured live-in environment for the treatment of drug/alcohol abuse, mental illness, and emotional/behavioral disorders. These facilities are staffed 24 hours a day. The focus of a residential treatment center is on the treatment program. Residential treatment centers for juveniles do not include facilities operated by or for correctional authorities.

Correctional facilities intended for juveniles (code 203)—Correctional facilities intended for juveniles include specialized facilities that provide strict confinement for their residents and detain juveniles awaiting adjudication, commitment or placement, and/or those being held for diagnosis or classification. Also included are correctional facilities where residents are permitted contact with the community for purposes such as attending school or holding a job. Examples of correctional facilities intended for juveniles are residential training schools and farms, reception and diagnostic centers, group homes operated by or for correctional authorities, detention centers, and boot camps for juvenile delinquents.

Nursing Facilities/Skilled-Nursing Facilities (code 301)—Nursing facilities/Skilled-nursing facilities include facilities licensed to provide medical care with 7-day, 24-hour coverage for people requiring
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long-term non-acute care. People in these facilities require nursing care, regardless of age. Either of these types of facilities may be referred to as nursing homes.

Other Institutional Facilities (codes 401–405)—Other institutional facilities include the following:
Mental (psychiatric) hospitals and psychiatric units in other hospitals (code 401)—Mental (psychiatric) hospitals and psychiatric units in other hospitals include psychiatric hospitals, units and floors for long-term non-acute care patients. The primary function of the hospital, unit, or floor is to provide diagnostic and treatment services for long-term non-acute patients who have psychiatric-related illness. All patients are enumerated in this category.

Hospitals with patients who have no usual home elsewhere (code 402)—Hospitals with patients who have no usual home elsewhere include hospitals that have any patients who have no exit or disposition plan, or who are known as “boarder patients” or “boarder babies.” All hospitals are eligible for inclusion in this category except psychiatric hospitals, units, wings, or floors operated by federal, state, or local correctional authorities. Patients in hospitals operated by these correctional authorities will be counted in the prison or jail population. Psychiatric units and hospice units in hospitals are also excluded. Only patients with no usual home elsewhere are enumerated in this category.
In-patient hospice facilities (both free-standing and units in hospitals) (code 403)—In-patient hospice facilities (both free-standing and units in hospitals) include facilities that provide palliative, comfort, and supportive care for terminally ill patients and their families. Only patients with no usual home elsewhere are tabulated in this category.

Military treatment facilities with assigned patients (code 404)—Military treatment facilities with assigned patients include military hospitals and medical centers with active duty patients assigned to the facility. Only these patients are enumerated in this category.
Residential schools for people with disabilities (code 405)—Residential schools for people with disabilities include schools that provide the teaching of skills for daily living, education programs, and care for students with disabilities in a live-in environment. Examples of residential schools for people with disabilities are residential schools for the physically or developmentally disabled.

Noninstitutional Group Quarters
Noninstitutional group quarters (group quarters type codes 501, 601, 602, 701, 702, 704, 706, 801, 802, 900, 901, 903, 904) are facilities that house those who are primarily eligible, able, or likely to participate in the labor force while residents.
College/University Student Housing (code 501)—College/University student housing includes

residence halls and dormitories, which house college and university students in a group living arrangement. These facilities are owned, leased, or managed either by a college, university, or seminary, or by a private entity or organization. Fraternity and sorority housing recognized by the college or university are included as college student housing. However, students attending the U.S. Naval Academy, U.S. Military Academy (West Point), U.S. Coast Guard Academy, and U.S. Air Force Academy are counted in military group quarters.

Military Quarters (codes 601 and 602)—Military quarters (code 601) are facilities that include military personnel living in barracks (including "open" barrack transient quarters) and dormitories and military ships (code 602). Patients assigned to Military Treatment Facilities and people being held in military disciplinary barracks and jails are not enumerated in this category. Patients in Military Treatment Facilities with no usual home elsewhere are not enumerated in this category.

Other Noninstitutional Facilities (codes 701, 702, 704, 706, 801, 802, 900, 901, 903, and 904)—Other noninstitutional facilities include the following:

Emergency and transitional shelters (with sleeping facilities) for people experiencing homelessness (code 701)—Emergency and transitional shelters (with sleeping facilities) for people experiencing homelessness are facilities where people experiencing homelessness stay overnight. These include:

1. Shelters that operate on a first-come, first-serve basis where people must leave in the morning and have no guaranteed bed for the next night.
2. Shelters where people know that they have a bed for a specified period of time (even if they leave the building every day).
3. Shelters that provide temporary shelter during extremely cold weather (such as churches). This category does not include shelters that operate only in the event of a natural disaster.

Examples are emergency and transitional shelters; missions; hotels and motels used to shelter people experiencing homelessness; shelters for children who are runaways, neglected, or experiencing homelessness; and similar places known to have people experiencing homelessness.

Soup kitchens, regularly scheduled mobile food vans, and targeted non-sheltered outdoor locations (codes 702, 704, and 706)—This category includes soup kitchens that offer meals organized as food service lines or bag or box lunches for people experiencing homelessness; street locations where mobile food vans regularly stop to provide food to people experiencing homelessness; and targeted non-sheltered outdoor locations where people experiencing homelessness live without paying to stay. This also would include persons staying in pre-identified car, recreational vehicle (RV), and tent encampments. Targeted non-sheltered outdoor locations must have a specific location description; for example, "the Brooklyn Bridge at the corner of Bristol Drive," "the 700 block of Taylor Street behind the old warehouse," or the address of the parking lot being utilized.

Group homes intended for adults (code 801)—Group homes intended for adults are community-based group living arrangements in residential settings that are able to accommodate three or more clients of a service provider. The group home provides room and board and services, including behavioral, psychological, or social programs. Generally, clients are not related to the caregiver or to each other. Group homes do not include residential treatment centers or facilities operated by or for correctional authorities.

Residential treatment centers for adults (code 802)—Residential treatment centers for adults provide treatment on-site in a highly structured live-in environment for the treatment of drug/alcohol abuse, mental illness, and emotional/behavioral disorders. They are staffed 24 hours a day. The focus of a residential treatment center is on the treatment program. Residential treatment centers do not include facilities operated by or for correctional authorities.

Maritime/Merchant vessels (code 900)—Maritime/merchant vessels include U.S. owned and operated flag vessels used for commercial or noncombatant government-related purposes at U.S. ports, on the sea, or on the Great Lakes.

Workers' group living quarters and Job Corps centers (code 901)—Workers' group living quarters and Job Corps centers include facilities such as dormitories, bunkhouses, and similar types of group living arrangements for agricultural and non-agricultural workers. This category also includes facilities that provide a full-time, year-round residential program offering a vocational training and employment program that helps young people 16 to 24 years old learn a trade, earn a high school diploma or GED, and get help finding a job. Examples are group living quarters at migratory farm-worker camps, construction workers' camps, Job Corps centers, and vocational training facilities.

Living quarters for victims of natural disasters (code 903)—Living quarters for victims of natural

disasters are temporary group living arrangements established as a result of natural disasters.
Religious group quarters and domestic violence shelters (code 904)—Religious group quarters are living quarters owned or operated by religious organizations that are intended to house their members in a group living situation. This category includes such places as convents, monasteries, and abbeys. Living quarters for students living or staying in seminaries are classified as college student housing, not religious group quarters. Domestic violence shelters are community-based homes, shelters, or crisis centers that provide housing for people who have sought shelter from household violence and who may have been physically abused.

Comparability—Due to the consolidation of group quarters types and general streamlining of the definitions, several changes have been implemented in the 2010 Census group quarters definitions and type codes that are reflected in 2010 Census data products.
As in Census 2000, group quarters are either institutional group quarters or noninstitutional group quarters.
Institutional group quarters are facilities that house those who are primarily ineligible, unable, or unlikely to participate in the labor force while residents. This definition has been simplified since the 1990 and 2000 Censuses (both used the same definition, which focused on institutions providing formally authorized, supervised care or custody) to focus on labor force participation.
The phrase “institutionalized persons” in the 1990 Census data was changed to “institutionalized population” in Census 2000 and continues in the 2010 Census.
Correctional facilities for adults—In the 2010 Census data products, the Census 2000 term “other type of correctional institutions” is categorized as “correctional residential facilities.”
Juvenile facilities—Those group quarters categorized as “homes for abused, dependent, and neglected children” (public, private, or ownership unknown) in the Census 2000 data products are categorized as “group homes for juveniles (non-correctional)” in the 2010 Census data products. Those categorized in “training schools” (public, private, and ownership unknown), “detention centers, reception or diagnostic centers,” and “type of juvenile institution unknown” in Census 2000 data products are categorized in the 2010 Census data products as “correctional facilities intended for juveniles” (i.e., training schools and farms, reception and diagnostic centers, detention centers, boot camps and group homes operated by or for correctional authorities).
Nursing facilities/skilled-nursing facilities—In the 2010 Census data products, all nursing homes are categorized as “nursing facilities/skilled-nursing facilities.”
Other institutional facilities—Those group quarters categorized as “schools, hospitals, or wards for the physically handicapped” in Census 2000 data products are categorized as “residential schools for people with disabilities” in the 2010 Census data products. “Military hospitals or wards for chronically ill” are classified as “military treatment facilities with assigned patients” in the 2010 Census data products. Also, what were called “military hospitals with patients who have no usual home elsewhere” in Census 2000 data products are categorized as “hospitals with patients who have no usual home elsewhere” in 2010 Census data products. “Hospices or homes for the chronically ill or other hospitals or wards for chronically ill” are categorized in the 2010 Census data products as “in-patient hospice facilities.” “Hospitals and wards for drug/alcohol abuse” and “mentally ill (psychiatric) hospitals or wards” are categorized in the 2010 Census data products as “mental (psychiatric) hospitals and psychiatric units in other hospitals.”
The phrase “staff residents” was used for staff living in institutions in both the 1990 and 2000 Censuses. In Census 2000, staff living in institutions included those living in “agricultural workers’ dormitories,” “other workers’ dormitories,” “Job Corps and vocational training facilities,” “dormitories for nurses and interns in military hospitals,” and “dormitories for nurses and interns in general hospitals.” In the 2010 Census, all these groups are categorized as “workers’ group living quarters and Job Corps centers.”
Noninstitutional group quarters—In the 1990 Census, the Census Bureau used the phrase “other persons in group quarters” for people living in noninstitutionalized group quarters. In 2000, this group was referred to for the first time as the “noninstitutionalized population.” In 2010, this population continues to be referred to as the noninstitutionalized population. Noninstitutional group quarters are facilities that house those who are primarily eligible, able, or likely to participate in the labor force while a resident.
As of Census 2000, the Census Bureau dropped the rule of classifying ten or more unrelated people living together as living in noninstitutional group quarters. This rule was used in the 1990 and 1980 Censuses. In the 1970 Census, the criteria was six or more unrelated people.
College/University student housing—In the 2010 Census, residence halls and dormitories, which house college and university students in a group living arrangement, may be owned, leased, or managed either by a college, university, or seminary or by a private entity or organization. In Census 2000, these types of facilities had to be owned by the college or university.
Military quarters—In 1960 data products, people in military barracks were shown only for men. Starting in 1970 and to the present, data are available for both men and women in military barracks. What were classified as “transient quarters for temporary residents (military or civilian)” in Census 2000 data products

no longer include the civilian population, and the military residents are tabulated in “military quarters” in 2010 Census data products.

Other noninstitutional facilities—In the 2010 Census, “workers group living quarters and Job Corps centers” are comprised of the following Census 2000 group quarters types: “agriculture workers’ dormitories,” “other workers’ dormitories,” “Job Corps and vocational training facilities,” and “dormitories for nurses and interns in hospitals (general and military).” As in Census 2000 and also in 1990, workers’ dormitories were classified as group quarters regardless of the number of people sharing the dormitory. In 1980, ten or more unrelated people had to share the dorm for it to be classified as a group quarters.

In the 2010 Census, “emergency and transitional shelters (with sleep facilities) for people experiencing homelessness” includes the Census 2000 categories “emergency and transitional shelters” and “shelters for children who are runaways, neglected, or without conventional housing.”

In the 2010 Census, “religious group quarters” are combined with “shelters for abused women (or shelters against domestic violence)” to make the category “religious group quarters and domestic violence shelters.”

In the 2010 Census data products, the category “group homes intended for adults (non-correctional)” consists of the following group quarters types (as listed in Census 2000): “homes for the mentally ill,” “homes for the mentally retarded,” “homes for the physically handicapped,” “residential care facilities providing protective oversight,” and “other group homes.” “Homes or halfway houses for drug/alcohol abuse” are categorized as “residential treatment centers for adults (non-correctional).”

The following group quarters types that were included in Census 2000 are no longer classified as group quarters in the 2010 Census: “military hotels/campgrounds,” “transient locations,” and “other household living situations ‘–dangerous encampments.’”

Like in Census 2000, rooming and boarding houses are classified as housing units in the 2010 Census. In the 1990 Census, these were considered group quarters.

Housing Units

A housing unit is a living quarters in which the occupant or occupants live separately from any other individuals in the building and have direct access to their living quarters from outside the building or through a common hall. Housing units are usually houses, apartments, mobile homes, groups of rooms, or single rooms that are occupied as separate living quarters. They are residences for single individuals, groups of individuals, or families who live together. A single individual or a group living in a housing unit is defined to be a household. Additional details about housing for the elderly population and group homes are provided in the section “Housing for the Older Population.”

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For vacant housing units, the criteria of separateness and direct access are applied to the intended occupants whenever possible. Nontraditional living quarters such as boats, RVs, and tents are considered to be housing units **only** if someone is living in them and they are either the occupant’s usual residence or the occupant has no usual residence elsewhere. These nontraditional living arrangements are not considered to be housing units if they are vacant.

Housing units are classified as being either occupied or vacant.

Occupied Housing Unit—A housing unit is classified as occupied if it is the usual place of residence of the individual or group of individuals living in it on Census Day, or if the occupants are only temporarily absent, such as away on vacation, in the hospital for a short stay, or on a business trip, and will be returning.

The occupants may be an individual, a single family, two or more families living together, or any other group of related or unrelated individuals who share living arrangements.

Occupied rooms or suites of rooms in hotels, motels, and similar places are classified as housing units only when occupied by permanent residents; that is, occupied by individuals who consider the hotel their usual place of residence or who have no usual place of residence elsewhere. However, when rooms in hotels and motels are used to provide shelter for people experiencing homelessness, they are not housing units. Rooms used in this way are considered group quarters.

Vacant Housing Unit—A housing unit is classified as vacant if no one is living in it on Census Day, unless its occupant or occupants are only temporarily absent—such as away on vacation, in the hospital for a short stay, or on a business trip—and will be returning.

Housing units temporarily occupied at the time of enumeration entirely by individuals who have a usual residence elsewhere are classified as vacant. When housing units are vacant, the criteria of separateness and direct access are applied to the intended occupants whenever possible. If that information cannot be obtained, the criteria are applied to the previous occupants.

Boats, RVs, tents, caves, and similar shelter that no one is using as a usual residence are **not** considered

living quarters and therefore are not enumerated at all.

Housing for the Older Population—Housing specifically for the older population has become more and more prevalent and is being identified by many different names. Living quarters in these facilities, unless they meet the definition of skilled nursing facilities, are housing units, with each resident's living quarters considered a separate housing unit if it meets the housing unit definition of direct access. These residential facilities may be referred to as senior apartments, active adult communities, congregate care, continuing care retirement communities, independent living, board and care, or assisted living. People may have to meet certain criteria to be able to live in these facilities, but once accepted as residents they have unrestricted access to and from their units to the outside.
Housing units and group quarters may coexist under the same entity or organization and in some situations, actually share the same structure. An assisted living facility complex may have a skilled nursing floor or wing that meets the definition of a nursing facility and is, therefore, a group quarters, while the rest of the living quarters in the facility are considered to be housing units. Congregate care facilities and continuing care retirement communities often consist of several different types of living quarters, with varying services and levels of care. Some of the living quarters in these facilities and communities are considered to be housing units and some are considered to be group quarters, depending on which definition they meet.

Comparability—The first Census of Housing in 1940 established the "dwelling unit" concept. Although the term became "housing unit" and the definition was modified slightly in succeeding censuses, the housing unit definition remained essentially comparable between 1940 and 1990. Since 1990, two changes were made to the housing unit definition.
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The first change eliminated the concept of "eating separately." The elimination of the eating criterion is more in keeping with the United Nations' definition of a housing unit that stresses the entire concept of separateness rather than the specific "eating" element. Although the "eating separately" criterion previously was included in the definition of a housing unit, the data needed to distinguish whether the occupants ate separately from any other people in the building were not collected. (Questions that asked households about their eating arrangements have not been included in the census since 1970.) Therefore, the current definition better reflects the information that is used in the determination of a housing unit.
The second change for Census 2000 and the 2010 Census eliminated the "number of nonrelatives" criterion; that is, "9 or more people unrelated to the householder" which caused a conversion of housing units to group quarters. This change was prompted by the following considerations: 1) there were relatively few such conversions made as a result of this rule in 1990; 2) household relationship and housing data were lost by converting these units to group quarters; and 3) there was no empirical support for establishing a particular number of nonrelatives as a threshold for these conversions.
In 1960, 1970, and 1980, vacant rooms in hotels, motels, and other similar places where 75 percent or more of the accommodations were occupied by permanent residents were counted as part of the housing inventory. However, an evaluation of the data collection procedures prior to the 1990 Census indicated that the concept of permanency was a difficult and confusing procedure for enumerators to apply correctly. Consequently, in the 1990 Census, vacant rooms in hotels, motels, and similar places were not counted as housing units. In Census 2000 and the 2010 Census, we continued the procedure adopted in 1990.

HOUSING CHARACTERISTICS

Household Size

This question is based on the count of people in occupied housing units. All people occupying the housing unit are counted, including the householder, occupants related to the householder, and lodgers, roomers,

boarders, and so forth.
Average Household Size of Occupied Unit—The average household size of an occupied unit is a measure obtained by dividing the number of people living in occupied housing units by the total number of occupied housing units. This measure is rounded to the nearest hundredth.

Average Household Size of Owner-Occupied Unit—The average household size of an owner-occupied unit is a measure obtained by dividing the number of people living in owner-occupied housing units by the total number of owner-occupied housing units. This measure is rounded to the nearest hundredth.
Average Household Size of Renter-Occupied Unit—The average household size of a renter-occupied unit is a measure obtained by dividing the number of people living in renter-occupied housing units by the

total number of renter-occupied housing units. This measure is rounded to the nearest hundredth.

Tenure

Tenure was asked at all occupied housing units. All occupied housing units are classified as either owneroccupied or renter-occupied.

Owner-Occupied—A housing unit is owner-occupied if the owner or co-owner lives in the unit even if it is mortgaged or not fully paid for. The owner or co-owner must live in the unit and usually is Person 1 on the questionnaire. The unit is "Owned by you or someone in this household with a mortgage or loan" if it is being purchased with a mortgage or some other debt arrangement, such as a deed of trust, trust deed, contract to purchase, land contract, or purchase agreement. The unit is also considered owned with a mortgage if it is built on leased land and there is a mortgage on the unit.

A housing unit is "Owned by you or someone in this household free and clear (without a mortgage or loan)" if there is no mortgage or other similar debt on the house, apartment, or mobile home, including

units built on leased land if the unit is owned outright without a mortgage. Although most tables show total owner-occupied counts, selected tables separately identify the two owner categories.

Renter-Occupied—All occupied housing units which are not owner-occupied, whether they are rented or occupied without payment of rent, are classified as renter-occupied. "Rented" includes units in continuing care, sometimes called life care arrangements. These arrangements usually involve a contract between one or more individuals and a service provider guaranteeing the individual shelter, usually an apartment, and services, such as meals or transportation to shopping or recreation. The "no rent paid" category includes units provided free by friends or relatives or in exchange for services, such as a resident manager, caretaker, minister, or tenant farmer. Housing units on military bases are also classified in the "No rent paid" category.

Comparability—Data on tenure have been collected since 1890. In 1990, the response categories were expanded to allow the respondent to report whether the unit was owned with a mortgage or loan, or free and clear (without a mortgage). The distinction between units owned with a mortgage and units owned free and clear was added in 1990 to improve the count of owner-occupied units. Research after the 1980 Census indicated some respondents did not consider their units owned if they had a mortgage. In Census 2000, we continued with the same tenure categories used in the 1990 Census. In 2010, the instruction "Include home equity loans" was added following the response category "Owned by you or someone in this household with a mortgage or loan?" Additional changes included revising the wording of two response categories from "Rented for cash rent?" to "Rented?" and "Occupied without payment of cash rent?" to "Occupied without payment of rent?"

Vacancy Status

The data on vacancy status were obtained from Enumerator Questionnaire item C. Vacancy status and other characteristics of vacant units were determined by census enumerators obtaining information from landlords, owners, neighbors, rental agents, and others. Vacant units are subdivided according to their housing market classification as follows:

For Rent—These are vacant units offered "for rent" and vacant units offered either "for rent" or "for sale."

Rented, Not Occupied—These are vacant units rented but not yet occupied, including units where money has been paid or agreed upon, but the renter has not yet moved in.

For Sale Only—These are vacant units being offered "for sale only," including units in cooperatives and condominium projects if the individual units are offered "for sale only." If units are offered either "for rent" or "for sale," they are included in the "for rent" classification.

Sold, Not Occupied—These are vacant units sold but not yet occupied, including units that have been sold recently, but the new owner has not yet moved in.

For Seasonal, Recreational, or Occasional Use—These are vacant units used or intended for use only in certain seasons or for weekends or other occasional use throughout the year. Seasonal units include those used for summer or winter sports or recreation, such as beach cottages and hunting cabins. Seasonal units also may include quarters for such workers as herders and loggers. Interval

ownership units, sometimes called shared-ownership or time-sharing condominiums, also are included here.

For Migrant Workers—These include vacant units intended for occupancy by migratory workers employed in farm work during the crop season. (Work in a cannery, freezer plant, or food-processing plant is not farm work.)

Other Vacant—If a vacant unit does not fall into any of the categories specified above, it is classified as "Other vacant." For example, this category includes units held for occupancy by a caretaker or janitor and units held for personal reasons of the owner.
Definitions of Subject Characteristics B-23
U.S. Census Bureau, 2010 Census Summary File 1

Homeowner Vacancy Rate—The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the number of vacant units "for sale only" by the sum of the owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied, and then multiplying by 100. This measure is rounded to the nearest tenth.

Rental Vacancy Rate—The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied, and then multiplying by 100. This measure is rounded to the nearest tenth.

Available Housing Vacancy Rate—The available housing vacancy rate is the proportion of the housing inventory that is vacant-for-sale only and vacant-for-rent. It is computed by dividing the sum of vacant-forsale-only housing units and vacant-for-rent housing units, by the sum of occupied units, vacant-for-saleonly housing units, vacant-sold-not-occupied housing units, vacant-for-rent housing units, and vacantrented-not-occupied housing units, and then multiplying by 100. This measure is rounded to the nearest tenth.

Comparability—Data on vacancy status have been collected since 1940. Since 1990, we have used the category "For seasonal, recreational, or occasional use." In earlier censuses, separate categories were used to collect data on these types of vacant units. Also, in 1970 and 1980, housing characteristics generally were presented only for year-round units. Beginning in 1990 and continuing into Census 2000, housing characteristics are shown for all housing units. Census 2000 used a single vacancy status category for units that were either "Rented or sold, not occupied." In 2010, we used two separate categories "Rented, not occupied" and "Sold, not occupied." This change provided consistency with the American Community Survey and the Housing Vacancy Survey. These revised categories were incorporated in the calculations of the homeowner vacancy, rental vacancy, and the available housing vacancy rates.

DERIVED MEASURES

Census data products include various derived measures, such as medians, means, and percentages, as well as certain rates and ratios. Derived measures that round to less than 0.1 are not shown but indicated as zero.

Area Measurement and Density

The 2010 Census summary file geographic header record provides the size, in square meters, of geographic entities for which the U.S. Census Bureau tabulates and disseminates data. Land area is shown in Field Name AREALAND (starting position 199) and water area in Field Name AREAWATR (starting position 213). To convert square meters to square kilometers, divide by 1,000,000; to convert square kilometers to square miles, divide by 2.589988; to convert square meters to square miles, divide by 2,589,988.
Population density (average number of people per square mile) is calculated by dividing the number of people in a specified geographic area by its land area in square miles.
Housing unit density (average number of housing units per square mile) is calculated by dividing the number of housing units in a specified geographic area by its land area in square miles.

Average

See "Mean."

Interpolation

Interpolation is frequently used to calculate medians or quartiles and to approximate standard errors from tables based on interval data. Different kinds of interpolation may be used to estimate the value

of a function between two known values, depending on the form of the distribution. The most common distributional assumption is that the data are linear, resulting in linear interpolation.
B-24 Definitions of Subject Characteristics
U.S. Census Bureau, 2010 Census Summary File 1

Mean
This measure represents an arithmetic average of a set of values. It is derived by dividing the sum (or aggregate) of a group of numerical items by the total number of items in that group. For example, average family size is obtained by dividing the number of people in families by the total number of families (or family householders). (Additional information on means and aggregates is included in the separate explanations of many of the population and housing subjects.)

Median
This measure represents the middle value (if *n* is odd) or the average of the two middle values (if *n* is even) in an ordered list of *n* data values. The median divides the total frequency distribution into two equal parts: one-half of the cases falling below the median and one-half above the median. Each median is calculated using a standard distribution. The standard distribution for the calculation of median age is:

Age [116]
Under 1 year
1 year
2 years
3 years
4 years
5 years
.
.
.
112 years
113 years
114 years
115 years and over
(For more information, see "Interpolation.")
Jam values will be assigned whenever the median falls in an open-ended interval. For example, if the median age value fell in the open-ended category 115 years and over, the value displayed would be 115+. The presentation of jam values will vary between products and types of media.
For data products displayed in American FactFinder, publications, or in display table format, medians that fall in the upper-most category of an open-ended distribution will be shown with a plus symbol (+) appended, and medians that fall in the lowest category of an open-ended distribution will be shown with a minus symbol (–) appended. For other data products and data files that are downloaded by users (i.e., FTP files), plus and minus signs will not be appended.

Percentage
This measure is calculated by taking the number of items in a group possessing a characteristic of interest and dividing by the total number of items in that group, and then multiplying by 100.

Rate
This is a measure of occurrences in a given period of time divided by the possible number of occurrences during that period. For example, the homeowner vacancy rate is calculated by dividing the number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied, and then multiplying by 100. Rates are sometimes presented as percentages.
Data Collection and Processing Procedures C-1
U.S. Census Bureau, 2010 Census Summary File 1

Appendix IV: Public Involvement Plan

I-94 EAST-WEST FREEWAY AND STADIUM INTERCHANGE 70TH STREET – 25TH STREET

Public Involvement Plan

July 12, 2012

Milwaukee County
PROJECT ID 1060-27-00, -01

U.S.Department of Transportation
Federal Highway Administration

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I. INTRODUCTION

This Public Involvement Plan for the I-94 East-West Freeway Corridor Study (the Study) provides a framework for both soliciting information from, and disseminating information to, a wide range of stakeholders including residents, businesses, community groups and faith-based organizations, elected officials, and other interested parties.

This is a multi-faceted plan designed to achieve meaningful input via a comprehensive and transparent process.

The Plan will allow for several things: (1) a comprehensive geographical range of community outreach; (2) a substantial number of opportunities for both outreach and feedback; and (3) ultimately, significant interaction between the alternatives development and environmental document processes with stakeholders and interested parties. The plan will accommodate all of these elements while retaining the opportunity for flexibility and change throughout the Study process.

This Plan is also based on the same concepts that the Wisconsin Department of Transportation (WisDOT) has employed on other Southeast Freeway projects, including:

- Meeting with anyone, anyplace, anytime to create meaningful dialogue;
- Establishing credibility and trust within the community; and
- Being the first and best source of information about the project.

II. PROJECT DESCRIPTION

The I-94 East-West Corridor includes approximately 2.85 miles of I-94 between 70th Street and 25th Street, and WIS 341/US 41 between Frederick Miller Way and State Street (including the Stadium Interchange) in Milwaukee County. This corridor provides a critical interstate link for manufacturers, commuters, sports fans, and tourists within the Milwaukee Metropolitan Area and the Southeast Region of Wisconsin. This section of I-94 carries high traffic volumes, which currently vary between 138,000 and 156,000 AADT (Average Annual Daily Traffic). These traffic volumes are expected to grow to a range from 180,000 to 190,000 along I-94 by 2040. Because of the outdated design, this part of the freeway system has over 450 crashes per year, which translates into a significantly greater crash rate than the statewide average for similar facilities. Beyond the safety problems, the corridor is also displaying significant physical degradation (the corridor was built in the early and mid 1960s), and also features a number of horizontal, vertical, typical section, and vertical clearance design deficiencies.

WisDOT has initiated an environmental and engineering analysis of the I-94 East-West Freeway to examine the Stadium Interchange and service interchanges, determine traffic and infrastructure needs, evaluate alternatives, identify impacts of the alternatives, and develop a preferred reconstruction alternative.

III. GOALS AND OBJECTIVES

The primary objective of the Plan is to provide an open and inclusive informational program to all stakeholders geared toward the goal of the determination of a preferred alternative.

Achieving the goal will require the fulfillment of several objectives:

1. Establish and maintain the legitimacy of the Study.
2. Establish and maintain the legitimacy of the project planning process.
3. Understand and articulate project history.
4. Get to know all the potentially affected interests and see the project through their eyes.
5. Identify all potentially relevant problems and work to generate solutions to those problems, within the requirements and limitations of engineering, environmental, and other controlling factors.
6. Articulate and clarify the key issues.
7. Establish credibility.
8. Ensure that project communication is understandable to all stakeholders.
9. Listen to, and understand, information that is communicated by all stakeholders.

IV. PROJECT SCHEDULE

The Study began on March 28, 2012 and is scheduled to be complete in 29 months (by August 2014). The schedule below (Figure 1) illustrates major milestones and tasks that will be completed over the 29-month study schedule.

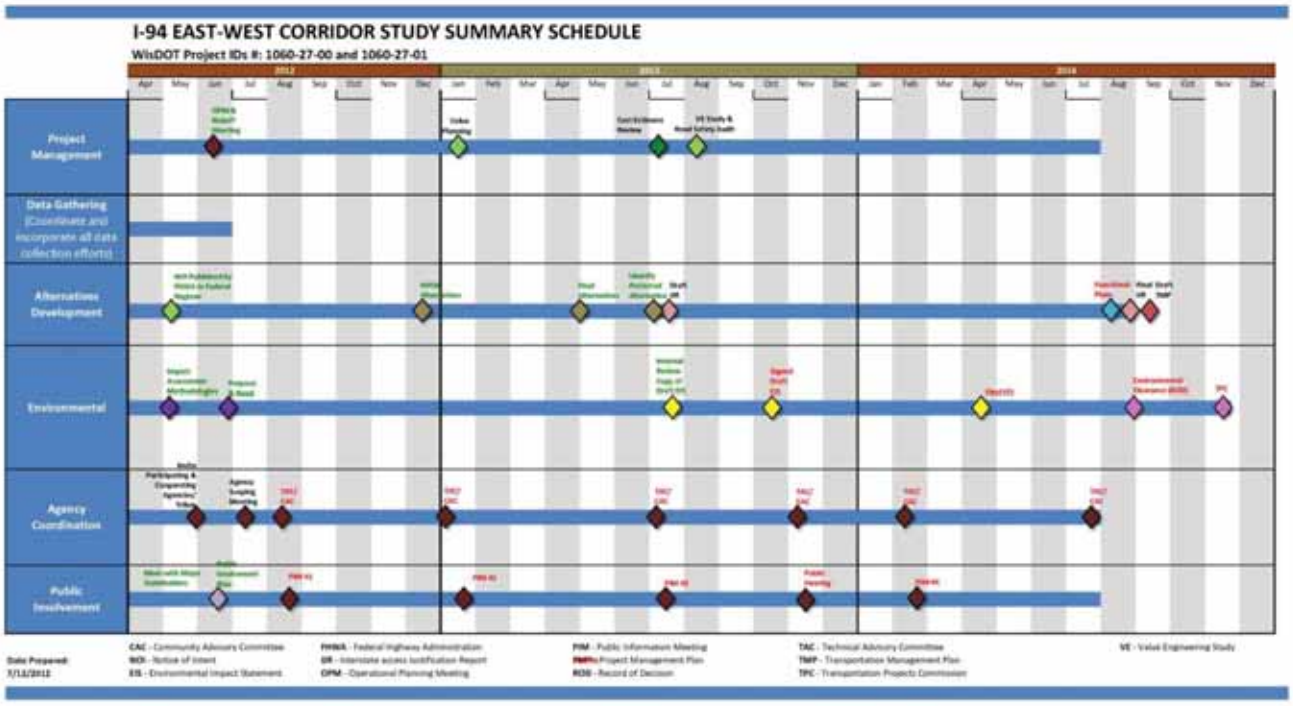

Figure 1 – draft study schedule

The initial focus of the Study will be to gather data, analyze and quantify existing operations and deficiencies within the existing highway system, develop alternatives, and meet with stakeholders and the public for their input. Later stages of the Study involve the narrowing of alternatives based on public input, cost, engineering and environmental factors.

At the conclusion of the Study, a single alternative (build or no-build) will be selected for implementation. A separate public involvement plan will be developed for the subsequent preliminary and final design phases, and construction phase, of the project.

V. PROJECT STAFF

WisDOT's major projects study staff, and by extension its study consultant CH2M HILL, will be responsible for the implementation of the overall public involvement plan for the Study and will be referred to as ***"the team"*** throughout this plan. The Public Involvement (PI) team will work closely with the design team to ensure that all staff members are provided opportunities to meet and communicate with the public in both large and small-scale meetings and presentations.

The PI team will also interface with other WisDOT and/or consultant staff involved in the areas of environmental justice and minority economic opportunities outreach.

8.1 WISDOT PI STAFF AND ROLES

- David Nguyen — Project Development Chief responsible for all project activities including PI
- Tony Barth — Project Supervisor
- Jason Lynch — Project Manager
- Dobra Payant — Deputy Project Manager
- Emlynn Grisar — Southeast Region Communications Manager responsible for all PI activities
- Various project staff — Oversight and participation in all elements of this Plan

8.2 CH2M HILL PI STAFF AND ROLES

- Brad Heimlich — Project Manager, and Co-Task Lead for PI
- Beth Foy — Co-Task Lead for PI; responsible for day to day PI administration and strategy
- Helen Dixon — Responsible for PI strategy and outreach
- Various project staff — Responsible for such elements as Advisory Committees, public information meetings, and specific outreach elements listed elsewhere in this Plan

VI. PROJECT STAFF TRAINING

Prior to beginning public outreach, CH2M HILL will share information on the Study with all project staff to acquaint them with the following:

- Project History
- Previous Studies
- FDM/NEPA/WEPA process
- FAQ
- Schedule
- Team Roles and Responsibilities
- Corridor Overview
- PI Plan elements and objectives
- PI tools and documentation protocols and requirements

VII. PUBLIC INVOLVEMENT PLAN ELEMENTS

Outreach Approach

The I-94 East-West Freeway PI Plan communicates activities to the following:

- General public outreach
- Community outreach
    - Affected adjacent residents
    - Unique groups/communities – outreach to low income groups, minorities, disabled and elderly groups
- Business outreach
    - Regional stakeholders
    - Local stakeholders
    - Interchange groups
    - Individual businesses
- Industry stakeholders
    - Freight
    - Statewide and regional business users of the I-94 East-West Freeway
- Native American Tribes
- DBE firms
- Agencies and local officials – outreach to local governments, the Regional Planning Commission, transit providers, emergency providers, ports, harbors and airports
- Elected officials

The project teams anticipate each of these audiences will have key interests in the project corridor related to design and construction activities.

The PI team will bring an array of citizen participation techniques and tools to this initiative including, but not limited to the following:

a. Public Informational Meetings and a Public Hearing

Public Information Meetings

Four rounds of public information meetings (PIM) will be held during the 29-month study process. The first public information meeting will be held on two days. Each round of additional public information meetings will consist of one meeting held at a publicly accessible building in the project corridor. Meeting locations may include public schools, parks, or other easily identifiable locations. The meetings will be approximately 4 hours in duration with a start time of either 3 pm or 4 pm depending on input and attendance at the initial public meeting.

Media participation and coverage of the public information meetings will be encouraged via press releases and through coordination with WisDOT's Communications Manager.

The format will be an informal, open house style.

The meetings will be held at various times throughout the project to coincide with major study milestones. Project staff planners, roadway designers, traffic engineers and real estate specialists will be in attendance to listen to community concerns about the Study area and discuss various solutions to specific issues and concerns.

Figure 2 – PIM preparation schedule

PIM 1 is planned for late summer 2012. The goals of the first public information meeting are:

- To establish initial contact with the community at large.
- To engage the community in a more hands-on meeting.
- To provide basic existing corridor engineering, environmental, and operational information.
- To solicit public input regarding the purpose of, and need for, the project.
- To listen to the concerns of individual residents and businesses regarding the project.
- To give the public the opportunity to speak "one-on-one" with members of the project team.
- To provide the public an opportunity to "brainstorm" and present initial replacement and improvement concepts.

- To effectively utilize the information received from the public in developing an initial range of alternatives across a broad spectrum of categories (from replace-in-kind to full modernization).

One round of two open house public information meetings will be conducted. A newsletter/project fact sheet will be sent out to the project mailing list inviting people to attend these meetings.

These meetings will serve as the Public Scoping meetings for the project. People will be given the opportunity to review information collected during the early phase of the study along with basic information about the scope and schedule of the Study.

Most importantly, the public will be given the chance to provide input regarding the Study needs and potential alternatives. They will also be given an opportunity to voice any issues or areas of concern that they may have.

Using large aerial maps, people will be able to locate their homes or areas of interest and write their particular comments on the map, a comment sheet, or add a post-it note. These comments will be entered into the project records and will be used by the team in determining significant public concerns. Comments will be taken into consideration by the engineering staff in determining realistic, cost effective and viable alternatives.

A summary of issues will be developed including a response or disposition of each issue. This summary will be incorporated into materials for the second PIM.

PIM 1 will be announced via a project fact sheet mailing and will be advertised in local newspapers. These meetings will be held on separate nights at publicly accessible building(s) in the project corridor.

PIM 2 is planned for early 2013. The purpose of this meeting is to again share project purpose and need and geometric, environmental, and operational conditions. In addition, this meeting will provide the opportunity to introduce the initial alternatives developed by the project team with input from the public at PIM 1. Existing and forecast future traffic conditions, existing crash data and existing deficiencies will be available to the public for their review and comment. Based on the information received at this PIM, the project team will refine alternatives, eliminating some and adding others based on public input, cost, feasibility, impacts, local government input, business input, traffic operations, and safety.

Comments will be collected. A summary of issues will be developed including a response or disposition of each issue. This summary will be incorporated into material for the third Public Information Meeting.

PIM 3 is planned for the late spring/summer of 2013. This meeting will take place after the alternatives (including impacts and costs) have been refined and will give the public the opportunity to comment on the various refined alternatives. The project team will then

evaluate the remaining alternatives to determine the alternatives that will be evaluated in more detail in the Environmental Impact Statement.

Comments will be collected. A summary of issues will be developed including a response or disposition of each issue. This summary will be incorporated into materials for the Public Hearing.

PIM 4 is planned for early 2014, after the public hearing. The public will be shown the preferred alternative, impact information and information on remaining project steps and construction schedule for their input and comment as the process moves forward into subsequent phases.

Comments will be collected. A summary of issues will be developed including a response or disposition of each issue.

Public Hearing on Draft Environmental Impact Statement

After the Draft Environmental Impact Statement is prepared, a public hearing will be held to provide the public the opportunity to officially record their comments on the preferred alternative. The public hearing is expected to be held in November 2013.

A pre-hearing conference will be held prior to the public hearing to brief WisDOT management and other WisDOT staff who attend the hearing but are not on the project team. The project team will make a presentation including project concepts, alternatives and their impacts, schedule information, results of public involvement and agency coordination, public hearing notice, upcoming project milestones and a review of public hearing informational materials.

The public hearing will be on one night, at a publicly accessible building in the project corridor. Meeting location may be a public school, Miller Park or another easily identifiable location. The hearing will be approximately 4 hours in duration with a start time of either 3 pm or 4 pm depending on input and attendance at the public information meetings.

The hearing will be conducted in a hybrid (both an open house where individuals may ask the project team questions one-on-one, and a formal setting where project information will be read into the record and formal public testimony will be taken). Court reporters will be available to take individual testimony and to record testimony given to the hearing panel. Two venues will be provided: one venue will provide the opportunity to provide testimony in a private setting while a second venue will provide individuals an opportunity to present their testimony in a room accessible to other public hearing participants. All public hearing testimony will be included in the public hearing transcripts that will be reviewed by WisDOT and FHWA.

The project team will compile, summarize comments, and prepare responses for review by WisDOT. They will also prepare a public hearing record and provide that information to various appropriate agencies.

b. Small Group Meetings

Individual Meetings with Elected Officials and Local Governments

Initial project meetings will be held with elected officials and local governments to solicit their concerns and information needs, and to learn how and when they would like to be involved in the study process. The purpose of these meetings is also to determine what issues related to the I-94 East-West Freeway Project are of key concern and to lay the ground work for a good working relationship, and later for a sound and comprehensive alternatives development and environmental analysis effort.

Throughout the study process, the project team will meet with city, county, and state elected officials. Because these elected officials represent various residents and businesses as part of their constituency, it is desirable to provide them with an early "heads-up" regarding what is occurring in the study process as well as what work is planned for the near future (for example, when a neighborhood meeting is planned that they may want to attend). These meetings will generally take place on an individual or very small group basis.

State level elected official meetings (and those with local units of government, at their discretion) will be arranged by the WisDOT Office of the Secretary with support from the project team.

Meetings will be documented on the PI meeting calendar.

See Appendix A for a list of Elected Officials.

Meetings with Key Interest Groups and Businesses

Initial project meetings will be held with key Special Interest Groups and Businesses to solicit their concerns and information needs, and to learn how and when they would like to be involved in the Study process. These interviews will generally involve a small group of organization representatives rather than its entire membership. The purpose of these meetings is also to determine what issues related to the Study are of key concern and to lay the ground work for a good working relationship, and later for a sound and comprehensive alternatives development and environmental analysis effort. A concerted effort will be made to identify specific units within appropriate stakeholders with whom to coordinate collectively or individually (e.g., engineering, governmental relations, and/or financial-operational management at a business interest) to maximize communications on pertinent elements of the alternatives and their potential impacts.

The project team will meet with representatives of key community, business, environmental, and metropolitan organizations such as the Milwaukee Metropolitan Association of Commerce. A Power Point presentation will be developed and modified as appropriate during the course of the Study for use with Interest Groups. Regular updates and briefings will be held as the Study progresses.

Meetings will be documented on the PI meeting calendar.

See Appendix B for a list of Special Interest Groups and Businesses.

c. 2013 and 2014 Wisconsin State Fair Outreach

If required, the consultant project team will transport exhibits for set-up and tear-down the day before and the day following the 11-day run of the 2013 and 2014 Wisconsin State Fair. The WisDOT project team will provide staff for the 11 days of each Fair.

d. Grassroots Community Outreach Activities

Community outreach that establishes a presence and reputation of openness and responsiveness for the Study team amongst stakeholders, and that produces tangible and constructive feedback, requires a proactive grassroots interaction effort. Establishing and maintaining trust and credibility with residents, businesses and those publics interested in the project Study is important in setting the foundation for informed consent. Providing accurate, timely and understandable information in a variety of formats, including the spoken word at the door, is a key element in establishing trust and credibility.

Property Owner Outreach

The project team will meet with adjacent property owners as requested or as needed, throughout the Study, to discuss property or neighborhood-specific issues, the Study process, and ongoing activities and developments. These meetings will be one-on-one, with neighborhood associations, and in other venues as requested.

Community-Based Organization Outreach

Initial project kick-off interviews will be held with selected community organizations to solicit their concerns and information needs, and to learn how and when they would like to be involved in the Study process. These interviews will generally involve a small group of organization representatives rather than its entire membership. The purpose of these meetings is also to determine what issues related to the I-94 East-West Freeway Project are

of key concern and to lay the ground work for a good working relationship, and later for a sound and comprehensive alternatives development and environmental analysis effort.

The PI team will meet with various community organizations located in Milwaukee, West Allis, Wauwatosa, West Milwaukee, and elsewhere as requested, throughout the 29-month study process. A Power Point presentation will be developed and modified as appropriate during the course of the study for use with smaller meetings, such as executive directors and organization boards as well as, for larger groups.

See Appendix B for a list of Community Organizations.

Minority and Low-Income Outreach; Environmental Justice

The PI team will proactively seek out minority and low-income groups in the project area and request opportunities to meet to discuss issues that may be either universal, or unique to their community. Translations will be provided for Spanish-speaking (or any others as identified or necessary) people in newsletters, on the Web page and, if requested, at other events related to the project. The PI team will work with the environmental justice staff to assist in developing or implementing an EJ plan for the Study.

e. Media Outreach

Local media will play a major role in defining and explaining major projects and can spread information effectively and widely. Local television and radio have historically covered PIMs and other meetings. The Study team, in coordination with and at the direction of the WisDOT Communications Manager, will utilize local and community newspapers to facilitate coverage of the Study and public meetings. Press releases will be sent to all local media outlets prior to PIMs and other Study milestones.

The project team contacts for the I-94 East-West Freeway project media requests are the WisDOT SE Region Communications Manager, Emlynn Grisar and WisDOT Project Development Chief David Nguyen. All requests for information must be referred to them. A member of the public involvement team will be assigned to work with reporters who attend the PIMs to make sure they have the information they need and the opportunity to interview project spokespersons.

Event opportunities for participation by WisDOT's Secretary or other WisDOT high level officials will be evaluated on a regular and ongoing basis, and reviewed with project staff from WisDOT to determine validity and specific elements.

It is the project team's desire to build strong relationships with local media.

See Appendix C for a list of Local Media.

f. Advisory Groups

Technical Advisory Committee (TAC)
Technical Advisory Committee meetings will be held with representatives from WisDOT; FHWA; SEWRPC; Milwaukee County; and Cities of Milwaukee, Wauwatosa, West Allis; and the Village of West Milwaukee. Other Advisory Group members may include Engineers, DPWs, or similar staff. Representatives from MMSD and DNR will be invited as needed. The group's role will be to assist the team in identifying project issues and developing project alternatives. Six TAC meetings are anticipated, to be conducted before each of 4 PIMs, the public hearing, and at the conclusion of the Study phase.

Community Advisory Committee (CAC)
Community Advisory Committee meetings will be held with representatives from WisDOT, FHWA, residents, community-based organizations, economic development groups, and small business groups within the Study area.

Six CAC meetings are anticipated, to be conducted before each of 4 PIMs, the public hearing, and at the conclusion of the Study phase

VIII. Informational Materials

Mailing list and meeting calendars
The project team will obtain, maintain, and update the master mailing list throughout the Study. The project mailing list will also be linked to the public involvement GIS database.

The project team will develop and maintain a public involvement calendar that will include all public meetings for the Study. The calendar will be maintained on the project shared drive and will be accessible to the project team.

Web Page
Project information will be available on WisDOT's web page. The site will include data pertaining to existing facilities and operations, recent study developments, study schedule, maps, alternatives, a summary of the purpose and need for the I-94 East-West Freeway project and links to related web sites. Updated information will be added to the web site on a regular basis and as necessary prior to, and after, key Study milestones.

All information posted on the web site will be reviewed and posted by WisDOT Office of Public Affairs. The web site will also include links for direct E-mail connections with WisDOT project staff. WisDOT project staff will respond to web page and email inquiries as necessary, with assistance from CONSULTANT staff as required.

Newsletters
The project team will prepare one newsletter prior to each public informational meeting, and prior to the public hearing. The newsletters will be concise but comprehensive records of project activities to date which will include information on the project development process, schedule milestones, brief reports on meetings that have occurred, continued updates on alternatives, and announcements about upcoming meetings.

A total of five newsletters will be mailed to those on the project's mailing list, including businesses and organizations within the project area. The newsletters will be mailed within two weeks prior to the public information meetings. Translations into Spanish (and other languages, as needed) will be made available upon request and will be posted on the website.

All written pieces including newsletters, presentations, and handouts will be approved through WisDOT's regional and, as needed, central office prior to printing or dissemination.

IX. Presentation of Technical Information

The general public is often times not familiar with technical data and terminology that is used by engineers, designers and planners. In order to achieve effective two-way communication between the Study team and the general public, technical phrases and data must be clearly explained in a format easily understood. It is much easier for people to understand something that they can see as opposed to something that is verbally explained to them. The project team will develop "user-friendly" guiding principles (rates of curvature, right-of-way guidelines, bridge dimensions, etc.) to help the public understand the constraints within which the design and alternatives development process occurs. These tools will be explained and provided during the early PIMs to provide the public with tools to explain concepts and ideas regarding possible alternatives. As alternatives are developed and refined, the Study team will develop computer-generated three-dimensional models of the various alternatives and other tools to assist the general public in their understanding of the project.

To assist the public's understanding of the project, the study team will employ several techniques, including:

- Project technical staff shall work with PI staff in the design of technical exhibits;
- Presenting information to the public that is accurate, timely and consistent;
- Assisting the public by defining, in layman's terms, key engineering and construction terminology, to assist both their understanding of the project as well as facilitate their engagement;
- Using graphics as much as possible to explain complicated analysis or findings; and
- Making no promises, but engaging in active listening and two-way dialogue.

The SE Region Communications Manager and Central Office will approve all exhibits.

X. Public Involvement Team Meetings

The Public Involvement Project Team will meet/teleconference on a monthly basis to discuss public involvement issues and status. Additionally, as work progresses, the team will meet to review the public involvement plan and other public involvement opportunities.

XI. Methods for Incorporating Public Input and Measuring Performance

Input from community interviews, meetings with community-based organizations, special interest groups, neighborhood organizations, businesses and local, city and state officials and elected officials will be documented via meeting summaries that will be completed by an attending project team member. These summary reports will be e-mailed to the appropriate staff for review and then kept on file to be a part of the final Project Record. A summary of public involvement activities will be provided in the project's Environmental Impact Statement. A meeting summary template will be developed for use as a tool to document meeting information and key issues of concern. It will be a primary goal and objective of the study team to continually monitor the volume and content of feedback received, to determine trends, key issues, FAQ material, and other information that could/would materially impact the direction of the alternatives development, analysis, and environmental documentation processes.

Information and comments that are gathered from public input throughout the Study process will be given to the Study management team and design teams for their review. Comments or drawings written by the public on maps at PIM 1 will be reviewed and ultimately reflected in the preliminary range of alternatives presented at PIM 2. Subsequent comments and drawings at future PIMs will also be reviewed and may be included in future meetings.

The Community Sensitive Solutions process will be implemented during preliminary design, once a preferred alternative is identified.

XII. GIS Public Involvement Tracking

The I-94 East-West Freeway GIS Project Database will be used to track public comments and public involvement participation. GIS technology will allow the tracking of comments received during the public involvement process as well as tracking attendance at Public Information Meetings and the Public Hearing.

All comments received will be included in the database including comments from one on one meetings, email, written correspondence, telephone calls and/or small group meetings.

XIII. Plan Review

The Project Team will review and update this Public Involvement Plan as needed.

Appendix A – List of Elected Officials

JURISDICTION	OFFICE/POSITION
City of Milwaukee	Mayor
City of Milwaukee Common Council	Aldermen/women, Public Works Committee
Village of West Milwaukee	Village President
Village of West Milwaukee Board of Trustees	Trustees
City of Wauwatosa	Mayor
City of Wauwatosa Common Council	Aldermen/women
City of West Allis	Mayor
City of West Allis Common Council	Aldermen/women
Milwaukee County	County Executive
Milwaukee County Board of Supervisors	County Supervisors, Transportation Committee
State of Wisconsin	Governor
United States House of Representatives--U.S. Congressional District 4 (Wisconsin)	U.S. Representative
United States House of Representatives--U.S. Congressional District 5 (Wisconsin)	U.S. Representative
United States Senate--Wisconsin	U.S. Senator
United States Senate--Wisconsin	U.S. Senator
Waukesha County	County Executive
Waukesha County Board of Supervisors	County Supervisors, Public Works/Transportation
Wisconsin State Assembly District 11	State Assemblyperson
Wisconsin State Assembly District 12	State Assemblyperson
Wisconsin State Assembly District 13	State Assemblyperson
Wisconsin State Assembly District 14	State Assemblyperson
Wisconsin State Assembly District 15	State Assemblyperson
Wisconsin State Assembly District 17	State Assemblyperson
Wisconsin State Assembly District 24	State Assemblyperson
Wisconsin State Assembly District 84	State Assemblyperson
Wisconsin State Assembly District 98	State Assemblyperson
Wisconsin State Senate District 4	State Senator
Wisconsin State Senate District 5	State Senator
Wisconsin State Senate District 6	State Senator
Wisconsin State Senate District 8	State Senator
Wisconsin State Senate District 28	State Senator
Wisconsin State Senate District 33	State Senator

Appendix B – List of probable Special Interest Groups, Businesses, Community Organizations

- Veterans Affairs
- Zablocki VA Medical Center
- Miller Park
- Menomonee Valley Business Park
- Miller-Coors
- ATC and We-Energies
- Beth Hamedrosh Hagodel Cemetery
- Calvary Cemetery
- Spring Hill Cemetery
- Wood National Cemetery
- Anshai Lebowitz Cemetery
- CP Railroad
- Marquette University
- Neighborhood Associations:
    - Story Hill
    - Merrill Park
    - Valley Park
    - Washington Heights Neighborhood Association
    - Johnson's Woods
    - Charles Jacobus Park Neighborhood Association
    - Westtown
    - Vliet Street
    - Uptown Neighborhood/Business
    - Silver City Main Street District
    - Washington Park
- Milwaukee County
- MMSD
- MMAC
- Potawatomi Bingo Casino
- Girl Scouts
- Hispanic Chamber
- African American Chamber
- Summerfest

Appendix C – List of Local Media

Print Media

1. Milwaukee Journal Sentinel
2. Community NOW Wauwatosa
3. Community NOW West Allis/West Milwaukee
4. Community NOW Brookfield
5. Community NOW Elm Grove
6. El Conquistador
7. Waukesha Freeman
8. The Daily Reporter
9. Milwaukee Community Journal
10. The Milwaukee Times
11. Small Business Times
12. The Business Journal

Television Media

1. WTMJ Channel 4
2. WITI Fox 6
3. WDJT Channel 58
4. WISN Channel 12
5. WCGV Channel 24
6. Milwaukee public television - Channels 10/36

Radio Media

1. WISN AM 1130
2. WTMJ AM 620
3. WUWM FM 88.7
4. WJMR FM 98.3

Online media and bloggers

Appendix V: Title VI

Sec. 2000d-1. Federal authority and financial assistance to programs or activities by way of grant, loan, or contract other than contract of insurance or guaranty; rules and regulations; approval by President; compliance with requirements; reports to Congressional committees; effective date of administrative action

Each Federal department and agency which is empowered to extend Federal financial assistance to any program or activity, by way of grant, loan, or contract other than a contract of insurance or guaranty, is authorized and directed to effectuate the provisions of section 2000d of this title with respect to such program or activity by issuing rules, regulations, or orders of general applicability which shall be consistent with achievement of the objectives of the statute authorizing the financial assistance in connection with which the action is taken. No such rule, regulation, or order shall become effective unless and until approved by the President. Compliance with any requirement adopted pursuant to this section may be effected

(1) by the termination of or refusal to grant or to continue assistance under such program or activity to any recipient as to whom there has been an express finding on the record, after opportunity for hearing, of a failure to comply with such requirement, but such termination or refusal shall be limited to the particular political entity, or part thereof, or other recipient as to whom such a finding has been made and, shall be limited in its effect to the particular program, or part thereof, in which such noncompliance has been so found, or

(2) by any other means authorized by law:

Provided, however, That no such action shall be taken until the department or agency concerned has advised the appropriate person or persons of the failure to comply with the requirement and has determined that compliance cannot be secured by voluntary means. In the case of any action terminating, or refusing to grant or continue, assistance because of failure to comply with a requirement imposed pursuant to this section, the head of the Federal department or agency shall file with the committees of the House and Senate having legislative jurisdiction over the program or activity involved a full written report of the circumstances and the grounds for such action. No such action shall become effective until thirty days have elapsed after the filing of such report.

Appendix VI: Executive order 13045

Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:
Section 1. Policy.
1-101. A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency:
(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.
1-102. Each independent regulatory agency is encouraged to participate in the implementation of this order and comply with its provisions.
Sec. 2. Definitions. The following definitions shall apply to this order.
2-201. "Federal agency" means any authority of the United States that is an agency under 44 U.S.C. 3502(1) other than those considered to be independent regulatory agencies under 44 U.S.C. 3502(5). For purposes of this order, "military departments," as defined in 5 U.S.C. 102, are covered under the auspices of the Department of Defense.
2-202. "Covered regulatory action" means any substantive action in a rulemaking, initiated after the date of this order or for which a Notice of Proposed Rulemaking is published 1 year after the date of this order, that is likely to result in a rule that may:
(a) be "economically significant" under Executive Order 12866 (a rulemaking that has an annual effect on the economy of $100 million or more or would adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities); and
(b) concern an environmental health risk or safety risk that an agency has reason to believe may disproportionately affect children.
2-203. "Environmental health risks and safety risks" mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breath, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to).
Sec. 3. Task Force on Environmental Health Risks and Safety Risks to Children.
3-301. There is hereby established the Task Force on Environmental Health Risks and Safety Risks to Children ("Task Force").
3-302. The Task Force will report to the President in consultation with the Domestic Policy Council, the National Science and Technology Council, the Council on Environmental Quality, and the Office of Management and Budget (OMB).
3-303. Membership. The Task Force shall be composed of the:
Secretary of Health and Human Services, who shall serve as a Co-Chair of the Council;
Administrator of the Environmental Protection Agency, who shall serve as a Co-Chair of the Council;
Secretary of Education;
Secretary of Labor;
Attorney General;
Secretary of Energy;
Secretary of Housing and Urban Development;
Secretary of Agriculture;
Secretary of Transportation;
Director of the Office of Management and Budget;

Chair of the Council on Environmental Quality;
Chair of the Consumer Product Safety Commission;
Assistant to the President for Economic Policy;
Assistant to the President for Domestic Policy;
Assistant to the President and Director of the Office of Science and Technology Policy;
Chair of the Council of Economic Advisers; and
Such other officials of executive departments and agencies as the President may, from time to time, designate. Members of the Task Force may delegate their responsibilities under this order to subordinates.
3-304. Functions. The Task Force shall recommend to the President Federal strategies for children's environmental health and safety, within the limits of the Administration's budget, to include the following elements:
statements of principles, general policy, and targeted annual priorities to guide the Federal approach to achieving the goals of this order;
a coordinated research agenda for the Federal Government, including steps to implement the review of research databases described in section 4 of this order;
recommendations for appropriate partnerships among Federal, State, local, and tribal governments and the private, academic, and nonprofit sectors;
proposals to enhance public outreach and communication to assist families in evaluating risks to children and in making informed consumer choices;
an identification of high-priority initiatives that the Federal Government has undertaken or will undertake in advancing protection of children's environmental health and safety; and
a statement regarding the desirability of new legislation to fulfill or promote the purposes of this order.
3-305. The Task Force shall prepare a biennial report on research, data, or other information that would enhance our ability to understand, analyze, and respond to environmental health risks and safety risks to children. For purposes of this report, cabinet agencies and other agencies identified by the Task Force shall identify and specifically describe for the Task Force key data needs related to environmental health risks and safety risks to children that have arisen in the course of the agency?s programs and activities. The Task Force shall incorporate agency submissions into its report and ensure that this report is publicly available and widely disseminated. The Office of Science and Technology Policy and the National Science and Technology Council shall ensure that this report is fully considered in establishing research priorities.
3-306. The Task Force shall exist for a period of 4 years from the first meeting. At least 6 months prior to the expiration of that period, the member agencies shall assess the need for continuation of the Task Force or its functions, and make appropriate recommendations to the President.
Sec. 4. Research Coordination and Integration.
4-401. Within 6 months of the date of this order, the Task Force shall develop or direct to be developed a review of existing and planned data resources and a proposed plan for ensuring that researchers and Federal research agencies have access to information on all research conducted or funded by the Federal Government that is related to adverse health risks in children resulting from exposure to environmental health risks or safety risks. The National Science and Technology Council shall review the plan.
4-402. The plan shall promote the sharing of information on academic and private research. It shall include recommendations to encourage that such data, to the extent permitted by law, is available to the public, the scientific and academic communities, and all Federal agencies.
Sec. 5. Agency Environmental Health Risk or Safety Risk Regulations.
5-501. For each covered regulatory action submitted to OMB's Office of Information and Regulatory Affairs (OIRA) for review pursuant to Executive Order 12866, the issuing agency shall provide to OIRA the following information developed as part of the agency's decision making process, unless prohibited by law:
an evaluation of the environmental health or safety effects of the planned regulation on children; and
an explanation of why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the agency.
5-502. In emergency situations, or when an agency is obligated by law to act more quickly than normal review procedures allow, the agency shall comply with the provisions of this section to the extent practicable. For those covered regulatory actions that are governed by a court-imposed or statutory deadline, the agency shall, to the extent practicable, schedule any rulemaking proceedings so as to permit sufficient time for completing the analysis required by this section.

5-503. The analysis required by this section may be included as part of any other required analysis, and shall be made part of the administrative record for the covered regulatory action or otherwise made available to the public, to the extent permitted by law.

Sec. 6. Interagency Forum on Child and Family Statistics.

6-601. The Director of the OMB ("Director") shall convene an Interagency Forum on Child and Family Statistics ("Forum"), which will include representatives from the appropriate Federal statistics and research agencies. The Forum shall produce an annual compendium ("Report") of the most important indicators of the well-being of the Nation's children.

6-602. The Forum shall determine the indicators to be included in each Report and identify the sources of data to be used for each indicator. The Forum shall provide an ongoing review of Federal collection and dissemination of data on children and families, and shall make recommendations to improve the coverage and coordination of data collection and to reduce duplication and overlap.

6-603. The Report shall be published by the Forum in collaboration with the National Institute of Child Health and Human Development. The Forum shall present the first annual Report to the President, through the Director, by July 31, 1997. The Report shall be submitted annually thereafter, using the most recently available data.

Sec. 7. General Provisions.

7-701. This order is intended only for internal management of the executive branch. This order is not intended, and should not be construed to create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or its employees. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance with this order by the United States, its agencies, its officers, or any other person.

7-702. Executive Order 12606 of September 2, 1987 is revoked.

WILLIAM J. CLINTON

THE WHITE HOUSE,

April 21, 1997.

Appendix VII – Americans with Disabilities Act – Amendment Act

SEC. 1. SHORT TITLE *[42 USCA § 12101 note]*

This Act may be cited as the "ADA Amendments Act of 2008".

SEC. 2. FINDINGS AND PURPOSES *[42 USCA § 12101 note]*

FINDINGS. – Congress finds that –

in enacting the Americans with Disabilities Act of 1990 (ADA), Congress intended that the Act "provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities" and provide broad coverage;

in enacting the ADA, Congress recognized that physical and mental disabilities in no way diminish a person's right to fully participate in all aspects of society, but that people with physical or mental disabilities are frequently precluded from doing so because of prejudice, antiquated attitudes, or the failure to remove societal and institutional barriers;

while Congress expected that the definition of disability under the ADA would be interpreted consistently with how courts had applied the definition of a handicapped individual under the Rehabilitation Act of 1973, that expectation has not been fulfilled;

the holdings of the Supreme Court in Sutton v. United Air Lines, Inc., 527 U.S. 471 (1999) and its companion cases have narrowed the broad scope of protection intended to be afforded by the ADA, thus eliminating protection for many individuals whom Congress intended to protect;

the holding of the Supreme Court in Toyota Motor Manufacturing, Kentucky, Inc. v. Williams, 534 U.S. 184 (2002) further narrowed the broad scope of protection intended to be afforded by the ADA;

(6) as a result of these Supreme Court cases, lower courts have incorrectly found in individual cases that people with a range of substantially limiting impairments are not people with disabilities;

in particular, the Supreme Court, in the case of Toyota Motor Manufacturing, Kentucky, Inc. v. Williams, 534 U.S. 184 (2002), interpreted the term "substantially limits" to require a greater degree of limitation than was intended by Congress; and

Congress finds that the current Equal Employment Opportunity Commission ADA regulations defining the term "substantially limits" as "significantly restricted" are inconsistent with congressional intent, by expressing too high a standard.

PURPOSES. – The purposes of this Act are—

to carry out the ADA's objectives of providing "a clear and comprehensive national mandate for the elimination of discrimination" and "clear, strong, consistent, enforceable standards addressing discrimination" by reinstating a broad scope of protection to be available under the ADA;

to reject the requirement enunciated by the Supreme Court in Sutton v. United Air Lines, Inc., 527 U.S. 471 (1999) and its companion cases that whether an impairment substantially limits a major life activity is to be determined with reference to the ameliorative effects of mitigating measures;

to reject the Supreme Court's reasoning in Sutton v. United Air Lines, Inc., 527 U.S. 471 (1999) with regard to coverage under the third prong of the definition of disability and to reinstate the reasoning of the Supreme Court in School Board of Nassau County v. Arline, 480 U.S. 273 (1987) which set forth a broad view of the third prong of the definition of handicap under the Rehabilitation Act of 1973;

to reject the standards enunciated by the Supreme Court in Toyota Motor Manufacturing, Kentucky, Inc. v. Williams, 534 U.S. 184 (2002), that the terms "substantially" and "major" in the definition of disability under the ADA "need to be interpreted strictly to create a demanding standard for qualifying as disabled," and that to be substantially limited in performing a major life activity under the ADA "an individual must have an impairment that prevents or severely restricts the individual from doing activities that are of central importance to most people's daily lives";

to convey congressional intent that the standard created by the Supreme Court in the case of Toyota Motor Manufacturing, Kentucky, Inc. v. Williams, 534 U.S. 184 (2002) for "substantially limits", and applied by lower courts in numerous decisions, has created an inappropriately high level of limitation necessary to obtain coverage

under the ADA, to convey that it is the intent of Congress that the primary object of attention in cases brought under the ADA should be whether entities covered under the ADA have complied with their obligations, and to convey that the question of whether an individual's impairment is a disability under the ADA should not demand extensive analysis; and

to express Congress' expectation that the Equal Employment Opportunity Commission will revise that portion of its current regulations that defines the term "substantially limits" as "significantly restricted" to be consistent with this Act, including the amendments made by this Act.

SEC. 3. CODIFIED FINDINGS.

Section 2(a) of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101) is amended—

by amending paragraph (1) to read as follows: "(1) physical or mental disabilities in no way diminish a person's right to fully participate in all aspects of society, yet many people with physical or mental disabilities have been precluded from doing so because of discrimination; others who have a record of a disability or are regarded as having a disability also have been subjected to discrimination;";

by striking paragraph (7); and

by redesignating paragraphs (8) and (9) as paragraphs (7) and (8), respectively.

SEC. 4. DISABILITY DEFINED AND RULES OF CONSTRUCTION.

DEFINITION OF DISABILITY.—Section 3 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12102) is amended to read as follows:

"SEC. 3. DEFINITION OF DISABILITY.

"As used in this Act:

"(1) DISABILITY.—The term 'disability' means, with respect to an individual—

"(A) a physical or mental impairment that substantially limits one or more major life activities of such individual;

"(B) a record of such an impairment; or

"(C) being regarded as having such an impairment (as described in paragraph (3)).

"(2) MAJOR LIFE ACTIVITIES.—

"(A) IN GENERAL.—For purposes of paragraph (1), major life activities include, but are not limited to, caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, communicating, and working.

"(B) MAJOR BODILY FUNCTIONS.—For purposes of paragraph (1), a major life activity also includes the operation of a major bodily function, including but not limited to, functions of the immune system, normal cell growth, digestive, bowel, bladder, neurological, brain, respiratory, circulatory, endocrine, and reproductive functions.

"(3) REGARDED AS HAVING SUCH AN IMPAIRMENT.—For purposes of paragraph (1)(C):

"(A) An individual meets the requirement of 'being regarded as having such an impairment' if the individual establishes that he or she has been subjected to an action prohibited under this Act because of an actual or perceived physical or mental impairment whether or not the impairment limits or is perceived to limit a major life activity.

"(B) Paragraph (1)(C) shall not apply to impairments that are transitory and minor. A transitory impairment is an impairment with an actual or expected duration of 6 months or less.

"(4) RULES OF CONSTRUCTION REGARDING THE DEFINITION OF DISABILITY.—The definition of 'disability' in paragraph (1) shall be construed in accordance with the following:

"(A) The definition of disability in this Act shall be construed in favor of broad coverage of individuals under this Act, to the maximum extent permitted by the terms of this Act.

"(B) The term 'substantially limits' shall be interpreted consistently with the findings and purposes of the ADA Amendments Act of 2008.

"(C) An impairment that substantially limits one major life activity need not limit other major life activities in order to be considered a disability.

"(D) An impairment that is episodic or in remission is a disability if it would substantially limit a major life activity when active.

"(E)(i) The determination of whether an impairment substantially limits a major life activity shall be made without regard to the ameliorative effects of mitigating measures such as—

"(I) medication, medical supplies, equipment, or appliances, low-vision devices (which do not include ordinary eyeglasses or contact lenses), prosthetics including limbs and devices, hearing aids and cochlear implants or other implantable hearing devices, mobility devices, or oxygen therapy equipment and supplies;

"(II) use of assistive technology;
"(III) reasonable accommodations or auxiliary aids or services; or
"(IV) learned behavioral or adaptive neurological modifications.
"(ii) The ameliorative effects of the mitigating measures of ordinary eyeglasses or contact lenses shall be considered in determining whether an impairment substantially limits a major life activity.
"(iii) As used in this subparagraph—
"(I) the term 'ordinary eyeglasses or contact lenses' means lenses that are intended to fully correct visual acuity or eliminate refractive error; and
"(II) the term 'low-vision devices' means devices that magnify, enhance, or otherwise augment a visual image.".
CONFORMING AMENDMENT.—The Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) is further amended by adding after section 3 the following:
"SEC. 4. ADDITIONAL DEFINITIONS.
"As used in this Act:
"(1) AUXILIARY AIDS AND SERVICES.—The term 'auxiliary aids and services' includes—
"(A) qualified interpreters or other effective methods of making aurally delivered materials available to individuals with hearing impairments;
"(B) qualified readers, taped texts, or other effective methods of making visually delivered materials available to individuals with visual impairments;
"(C) acquisition or modification of equipment or devices; and
"(D) other similar services and actions.
"(2) STATE.—The term 'State' means each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Virgin Islands of the United States, the Trust Territory of the Pacific Islands, and the Commonwealth of the Northern Mariana Islands."
AMENDMENT TO THE TABLE OF CONTENTS.—The table of contents contained in section 1(b) of the Americans with Disabilities Act of 1990 is amended by striking the item relating to section 3 and inserting the following items:
"Sec. 3. Definition of disability.
"Sec. 4. Additional definitions.".
SEC. 5. DISCRIMINATION ON THE BASIS OF DISABILITY.
ON THE BASIS OF DISABILITY.—Section 102 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12112) is amended—
in subsection (a), by striking "with a disability because of the disability of such individual" and inserting "on the basis of disability"; and
in subsection (b) in the matter preceding paragraph (1), by striking "discriminate" and inserting "discriminate against a qualified individual on the basis of disability".
QUALIFICATION STANDARDS AND TESTS RELATED TO UNCORRECTED VISION.—Section 103 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12113) is amended by redesignating subsections (c) and (d) as subsections (d) and (e), respectively, and inserting after subsection (b) the following new subsection:
"(c) QUALIFICATION STANDARDS AND TESTS RELATED TO UNCORRECTED VISION.— Notwithstanding section 3(4)(E)(ii), a covered entity shall not use qualification standards, employment tests, or other selection criteria based on an individual's uncorrected vision unless the standard, test, or other selection criteria, as used by the covered entity, is shown to be job-related for the position in question and consistent with business necessity."
CONFORMING AMENDMENTS.—
Section 101(8) of the Americans with Disabilities Act of 1990 (42 U.S.C. 12111(8)) is amended—
in the paragraph heading, by striking "WITH A DISABILITY"; and
by striking "with a disability" after "individual" both places it appears.
Section 104(a) of the Americans with Disabilities Act of 1990 (42 U.S.C. 12114(a)) is amended by striking "the term 'qualified individual with a disability' shall" and inserting "a qualified individual with a disability shall".
SEC. 6. RULES OF CONSTRUCTION.
Title V of the Americans with Disabilities Act of 1990 (42 U.S.C. 12201 et seq.) is amended—
by adding at the end of section 501 the following:
"(e) BENEFITS UNDER STATE WORKER'S COMPENSATION LAWS.—Nothing in this Act alters the standards for determining eligibility for benefits under State worker's compensation laws or under State and Federal disability benefit programs.

"(f) FUNDAMENTAL ALTERATION.—Nothing in this Act alters the provision of section 302(b)(2)(A)(ii), specifying that reasonable modifications in policies, practices, or procedures shall be required, unless an entity can demonstrate that making such modifications in policies, practices, or procedures, including academic requirements in postsecondary education, would fundamentally alter the nature of the goods, services, facilities, privileges, advantages, or accommodations involved.
"(g) CLAIMS OF NO DISABILITY.—Nothing in this Act shall provide the basis for a claim by an individual without a disability that the individual was subject to discrimination because of the individual's lack of disability.
"(h) REASONABLE ACCOMMODATIONS AND MODIFICATIONS.—A covered entity under title I, a public entity under title II, and any person who owns, leases (or leases to), or operates a place of public accommodation under title III, need not provide a reasonable accommodation or a reasonable modification to policies, practices, or procedures to an individual who meets the definition of disability in section 3(1) solely under subparagraph (C) of such section.";
by redesignating section 506 through 514 as sections 507 through 515, respectively, and adding after section 505 the following:
"SEC. 506. RULE OF CONSTRUCTION REGARDING REGULATORY AUTHORITY.
"The authority to issue regulations granted to the Equal Employment Opportunity Commission, the Attorney General, and the Secretary of Transportation under this Act includes the authority to issue regulations implementing the definitions of disability in section 3 (including rules of construction) and the definitions in section 4, consistent with the ADA Amendments Act of 2008."; and
in section 511 (as redesignated by paragraph (2)) (42 U.S.C. 12211), in subsection (c), by striking "511(b)(3)" and inserting "512(b)(3)".
The table of contents contained in section 1(b) of the Americans with Disabilities Act of 1990 is amended by redesignating the items relating to sections 506 through 514 as the items relating to sections 507 through 515, respectively, and by inserting after the item relating to section 505 the following new item:
"Sec. 506. Rule of construction regarding regulatory authority."
SEC. 7. CONFORMING AMENDMENTS.
Section 7 of the Rehabilitation Act of 1973 (29 U.S.C. 705) is amended—
in paragraph (9)(B), by striking "a physical" and all that follows through "major life activities", and inserting "the meaning given it in section 3 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12102)"; and
in paragraph (20)(B), by striking "any person who" and all that follows through the period at the end, and inserting "any person who has a disability as defined in section 3 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12102).".

Appendix VIII: Age Discrimination Act

The Age Discrimination in Employment Act of 1967

EDITOR'S NOTE: The following is the text of the Age Discrimination in Employment Act of 1967 (Pub. L. 90-202) (ADEA), as amended, as it appears in volume 29 of the United States Code, beginning at section 621. The ADEA prohibits employment discrimination against persons 40 years of age or older. The Older Workers Benefit Protection Act (Pub. L. 101-433) amended several sections of the ADEA. In addition, section 115 of the Civil Rights Act of 1991 (P.L. 102-166) amended section 7(e) of the ADEA (29 U. S.C. 626(e)). Cross references to the ADEA as enacted appear in italics following each section heading. Editor's notes also appear in italics.

An Act
To prohibit age discrimination in employment.
Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that this Act may be cited as the "Age Discrimination in Employment Act of 1967."
* * *

CONGRESSIONAL STATEMENT OF FINDINGS AND PURPOSE

SEC. 621. [Section 2]

(a) The Congress hereby finds and declares that-

(1) in the face of rising productivity and affluence, older workers find themselves disadvantaged in their efforts to retain employment, and especially to regain employment when displaced from jobs;

(2) the setting of arbitrary age limits regardless of potential for job performance has become a common practice, and certain otherwise desirable practices may work to the disadvantage of older persons;

(3) the incidence of unemployment, especially long-term unemployment with resultant deterioration of skill, morale, and employer acceptability is, relative to the younger ages, high among older workers; their numbers are great and growing; and their employment problems grave;

(4) the existence in industries affecting commerce, of arbitrary discrimination in employment because of age, burdens commerce and the free flow of goods in commerce.

(b) It is therefore the purpose of this chapter to promote employment of older persons based on their ability rather than age; to prohibit arbitrary age discrimination in employment; to help employers and workers find ways of meeting problems arising from the impact of age on employment.

EDUCATION AND RESEARCH PROGRAM; RECOMMENDATION TO CONGRESS

SEC. 622. [Section 3]

(a) The EEOC [originally, the Secretary of Labor] shall undertake studies and provide information to labor unions, management, and the general public concerning the needs and abilities of older workers, and their potentials for continued employment and contribution to the economy. In order to achieve the purposes of this chapter, the EEOC [originally, the Secretary of Labor] shall carry on a continuing program of education and information, under which he may, among other measures-

(1) undertake research, and promote research, with a view to reducing barriers to the employment of older persons, and the promotion of measures for utilizing their skills;

(2) publish and otherwise make available to employers, professional societies, the various media of communication, and other interested persons the findings of studies and other materials for the promotion of employment;

(3) foster through the public employment service system and through cooperative effort the development of facilities of public and private agencies for expanding the opportunities and potentials of older persons;

(4) sponsor and assist State and community informational and educational programs.

(b) Not later than six months after the effective date of this chapter, the Secretary shall recommend to the Congress any measures he may deem desirable to change the lower or upper age limits set forth in section 631 of this title [section 12].

PROHIBITION OF AGE DISCRIMINATION

SEC. 623. [Section 4]

(a) Employer practices
It shall be unlawful for an employer-

(1) to fail or refuse to hire or to discharge any individual or otherwise discriminate against any individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's age;

(2) to limit, segregate, or classify his employees in any way which would deprive or tend to deprive any individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's age; or

(3) to reduce the wage rate of any employee in order to comply with this chapter.

(b) It shall be unlawful for an employment agency to fail or refuse to refer for employment, or otherwise to discriminate against, any individual because of such individual's age, or to classify or refer for employment any individual on the basis of such individual's age.

(c) Labor organization practices

It shall be unlawful for a labor organization-

(1) to exclude or to expel from its membership, or otherwise to discriminate against, any individual because of his age;

(2) to limit, segregate, or classify its membership, or to classify or fail or refuse to refer for employment any individual, in any way which would deprive or tend to deprive any individual of employment opportunities, or would limit such employment opportunities or otherwise adversely affect his status as an employee or as an applicant for employment, because of such individual's age;

(3) to cause or attempt to cause an employer to discriminate against an individual in violation of this section.

(d) Opposition to unlawful practices; participation in investigations, proceedings, or litigation

It shall be unlawful for an employer to discriminate against any of his employees or applicants for employment, for an employment agency to discriminate against any individual, or for a labor organization to discriminate against any member thereof or applicant for membership, because such individual, member or applicant for membership has opposed any practice made unlawful by this

section, or because such individual, member or applicant for membership has made a charge, testified, assisted, or participated in any manner in an investigation, proceeding, or litigation under this chapter.

(e) Printing or publication of notice or advertisement indicating preference, limitation, etc.

It shall be unlawful for an employer, labor organization, or employment agency to print or publish, or cause to be printed or published, any notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by such a labor organization, or relating to any classification or referral for employment by such an employment agency, indicating any preference, limitation, specification, or discrimination, based on age.

(f) Lawful practices; age an occupational qualification; other reasonable factors; laws of foreign workplace; seniority system; employee benefit plans; discharge or discipline for good cause

It shall not be unlawful for an employer, employment agency, or labor organization-

(1) to take any action otherwise prohibited under subsections (a), (b), (c), or (e) of this section where age is a bona fide occupational qualification reasonably necessary to the normal operation of the particular business, or where the differentiation is based on reasonable factors other than age, or where such practices involve an employee in a workplace in a foreign country, and compliance with such subsections would cause such employer, or a corporation controlled by such employer, to violate the laws of the country in which such workplace is located;

(2) to take any action otherwise prohibited under subsection (a), (b), (c), or (e) of this section—

(A) to observe the terms of a bona fide seniority system that is not intended to evade the purposes of this chapter, except that no such seniority system shall require or permit the involuntary retirement of any individual specified by section 631(a) of this title because of the age of such individual; or

(B) to observe the terms of a bona fide employee benefit plan-

(i) where, for each benefit or benefit package, the actual amount of payment made or cost incurred on behalf of an older worker is no less than that made or incurred on behalf of a younger worker, as permissible under section 1625.10, title 29, Code of Federal Regulations (as in effect on June 22, 1989); or

(ii) that is a voluntary early retirement incentive plan consistent with the relevant purpose or purposes of this chapter.

Notwithstanding clause (i) or (ii) of subparagraph (B), no such employee benefit plan or voluntary early retirement incentive plan shall excuse the failure to hire any individual, and no such employee benefit plan shall require or permit the involuntary retirement of any individual specified by section 631(a) of this title, because of the age of such individual. An employer, employment agency, or labor organization acting under subparagraph (A), or under clause (i) or (ii) of subparagraph (B), shall have the burden of proving that such actions are lawful in any civil enforcement proceeding brought under this chapter; or

(3) to discharge or otherwise discipline an individual for good cause.

(g) [Repealed]

(h) Practices of foreign corporations controlled by American employers; foreign employers not controlled by American employers; factors determining control

(1) If an employer controls a corporation whose place of incorporation is in a foreign country, any practice by such corporation prohibited under this section shall be presumed to be such practice by such employer.

(2) The prohibitions of this section shall not apply where the employer is a foreign person not controlled by an American employer.

(3) For the purpose of this subsection the determination of whether an employer controls a corporation shall be based upon the-

(A) interrelation of operations,

(B) common management,

(C) centralized control of labor relations, and

(D) common ownership or financial control,

of the employer and the corporation.

(i) Employee pension benefit plans; cessation or reduction of benefit accrual or of allocation to employee account; distribution of benefits after attainment of normal retirement age; compliance; highly compensated employees

(1) Except as otherwise provided in this subsection, it shall be unlawful for an employer, an employment agency, a labor organization, or any combination thereof to establish or maintain an employee pension benefit plan which requires or permits—

(A) in the case of a defined benefit plan, the cessation of an employee's benefit accrual, or the reduction of the rate of an employee's benefit accrual, because of age, or

(B) in the case of a defined contribution plan, the cessation of allocations to an employee's account, or the reduction of the rate at which amounts are allocated to an employee's account, because of age.

(2) Nothing in this section shall be construed to prohibit an employer, employment agency, or labor organization from observing any provision of an employee pension benefit plan to the extent that such provision imposes (without regard to age) a limitation on the amount of benefits that the plan provides or a limitation on the number of years of service or years of participation which are taken into account for purposes of determining benefit accrual under the plan.

(3) In the case of any employee who, as of the end of any plan year under a defined benefit plan, has attained normal retirement age under such plan—

(A) if distribution of benefits under such plan with respect to such employee has commenced as of the end of such plan year, then any requirement of this subsection for continued accrual of benefits under such plan with respect to such employee during such plan year shall be treated as satisfied to the extent of the actuarial equivalent of in-service distribution of benefits, and

(B) if distribution of benefits under such plan with respect to such employee has not commenced as of the end of such year in accordance with section 1056(a)(3) of this title [section 206(a)(3) of the Employee Retirement Income Security Act of 1974] and section 401(a)(14)(C) of Title 26 [the Internal Revenue Code of 1986], and the payment of benefits under such plan with respect to such employee is not suspended during such plan year pursuant to section 1053(a)(3)(B) of this title or section 411(a)(3)(B) of Title 26 [the Internal Revenue Code of 1986], then any requirement of this subsection for continued accrual of benefits under such plan with respect to such employee during such plan year shall be treated as satisfied to the extent of any adjustment in the benefit payable under the plan during such

plan year attributable to the delay in the distribution of benefits after the attainment of normal retirement age.

The provisions of this paragraph shall apply in accordance with regulations of the Secretary of the Treasury. Such regulations shall provide for the application of the preceding provisions of this paragraph to all employee pension benefit plans subject to this subsection and may provide for the application of such provisions, in the case of any such employee, with respect to any period of time within a plan year.

(4) Compliance with the requirements of this subsection with respect to an employee pension benefit plan shall constitute compliance with the requirements of this section relating to benefit accrual under such plan.

(5) Paragraph (1) shall not apply with respect to any employee who is a highly compensated employee (within the meaning of section 414(q) of Title 26 [the Internal Revenue Code of 1986]) to the extent provided in regulations prescribed by the Secretary of the Treasury for purposes of precluding discrimination in favor of highly compensated employees within the meaning of subchapter D of chapter 1 of Title 26 [the Internal Revenue Code of 1986].

(6) A plan shall not be treated as failing to meet the requirements of paragraph (1) solely because the subsidized portion of any early retirement benefit is disregarded in determining benefit accruals or it is a plan permitted by subsection (m) of this section.

(7) Any regulations prescribed by the Secretary of the Treasury pursuant to clause (v) of section 411(b)(1)(H) of Title 26 [the Internal Revenue Code of 1986] and subparagraphs (C) and (D), of section 411(b)(2) of Title 26 [the Internal Revenue Code of 1986] shall apply with respect to the requirements of this subsection in the same manner and to the same extent as such regulations apply with respect to the requirements of such sections 411(b)(1)(H) and 411(b)(2).

(8) A plan shall not be treated as failing to meet the requirements of this section solely because such plan provides a normal retirement age described in section 1002(24)(B) [section 2(24)(B) of the Employee Retirement Income Security Act of 1974] of this title and section 411(a)(8)(B) of Title 26 [the Internal Revenue Code of 1986].

(9) For purposes of this subsection-

(A) The terms “employee pension benefit plan”, “defined benefit plan”, “defined contribution plan”, and “normal retirement age” have the meanings provided such terms in section 1002 of this title [section 3 of the Employee Retirement Income Security Act of 1974].

(B) The term “compensation” has the meaning provided by section 414(s) of Title 26 [the Internal Revenue Code of 1986].

(10) Special rules relating to age

(A) Comparison to similarly situated younger individual

(i) In general—A plan shall not be treated as failing to meet the requirements of paragraph (1) if a participant’s accrued benefit, as determined as of any date under the terms of the plan, would be equal to or greater than that of any similarly situated, younger individual who is or could be a participant.

(ii) Similarly situated—For purposes of this subparagraph, a participant is similarly situated to any other individual if such participant is identical to such other individual in every respect (including period of service, compensation, position, date of hire, work history, and any other respect) except for age.

(iii) Disregard of subsidized early retirement benefits—In determining the accrued benefit as of any date for purposes of this clause, the subsidized portion of any early retirement benefit or retirement-type subsidy shall be disregarded.

(iv) Accrued benefit—For purposes of this subparagraph, the accrued benefit may, under the terms of the plan, be expressed as an annuity payable at normal retirement age, the balance of a hypothetical account, or the current value of the accumulated percentage of the employee's final average compensation.

(B) Applicable defined benefit plans

(i) Interest credits

(I) In general—An applicable defined benefit plan shall be treated as failing to meet the requirements of paragraph (1) unless the terms of the plan provide that any interest credit (or an equivalent amount) for any plan year shall be at a rate which is not greater than a market rate of return. A plan shall not be treated as failing to meet the requirements of this subclause merely because the plan provides for a reasonable minimum guaranteed rate of return or for a rate of return that is equal to the greater of a fixed or variable rate of return

(II) Preservation of capital—An interest credit (or an equivalent amount) of less than zero shall in no event result in the account balance or similar amount being less than the aggregate amount of contributions credited to the account.

(III) Market rate of return—The Secretary of the Treasury may provide by regulation for rules governing the calculation of a market rate of return for purposes of subclause (I) and for permissible methods of crediting interest to the account (including fixed or variable interest rates) resulting in effective rates of return meeting the requirements of subclause (I). In the case of a governmental plan (as defined in the first sentence of section 414(d) of Title 26 [the Internal Revenue Code of 1986], a rate of return or a method of crediting interest established pursuant to any provision of Federal, State, or local law (including any administrative rule or policy adopted in accordance with any such law) shall be treated as a market rate of return for purposes of subclause (I) and a permissible method of crediting interest for purposes of meeting the requirements of subclause (I), except that this sentence shall only apply to a rate of return or method of crediting interest if such rate or method does not violate any other requirement of this chapter.

(ii) Special rule for plan conversions—If, after June 29, 2005, an applicable plan amendment is adopted, the plan shall be treated as failing to meet the requirements of paragraph (1)(H) unless the requirements of clause (iii) are met with respect to each individual who was a participant in the plan immediately before the adoption of the amendment.

(iii) Rate of benefit accrual—Subject to clause (iv), the requirements of this clause are met with respect to any participant if the accrued benefit of the participant under the terms of the plan as in effect after the amendment is not less than the sum of—
(I) the participant's accrued benefit for years of service before the effective date of the amendment, determined under the terms of the plan as in effect before the amendment, plus
(II) the participant's accrued benefit for years of service after the effective date of the amendment, determined under the terms of the plan as in effect after the amendment.
(iv) Special rules for early retirement subsidies—For purposes of clause (iii)(I), the plan shall credit the accumulation account or similar amount with the amount of any early retirement benefit or retirement-type subsidy for the plan year in which the participant retires if, as of such time, the participant has met

the age, years of service, and other requirements under the plan for entitlement to such benefit or subsidy.
(v) Applicable plan amendment—For purposes of this subparagraph—
(I) In general—The term "applicable plan amendment" means an amendment to a defined benefit plan which has the effect of converting the plan to an applicable defined benefit plan.
(II) Special rule for coordinated benefits—If the benefits of 2 or more defined benefit plans established or maintained by an employer are coordinated in such a manner as to have the effect of the adoption of an amendment described in subclause (I), the sponsor of the defined benefit plan or plans providing for such coordination shall be treated as having adopted such a plan amendment as of the date such coordination begins.
(III) Multiple amendments—The Secretary of the Treasury shall issue regulations to prevent the avoidance of the purposes of this subparagraph through the use of 2 or more plan amendments rather than a single amendment.
(IV) Applicable defined benefit plan—For purposes of this subparagraph, the term "applicable defined benefit plan" has the meaning given such term by section 1053(f)(3) of this title [section 203(f)(3) of the Employee Retirement Income Security Act of 1974].
(vi) Termination requirements—An applicable defined benefit plan shall not be treated as meeting the requirements of clause (i) unless the plan provides that, upon the termination of the plan—
(I) if the interest credit rate (or an equivalent amount) under the plan is a variable rate, the rate of interest used to determine accrued benefits under the plan shall be equal to the average of the rates of interest used under the plan during the 5-year period ending on the termination date, and
(II) the interest rate and mortality table used to determine the amount of any benefit under the plan payable in the form of an annuity payable at normal retirement age shall be the rate and table specified under the plan for such purpose as of the termination date, except that if such interest rate is a variable rate, the interest rate shall be determined under the rules of subclause (I).
(C) Certain offsets permitted—A plan shall not be treated as failing to meet the requirements of paragraph (1) solely because the plan provides offsets against benefits under the plan to the extent such offsets are allowable in applying the requirements of section 401(a) of Title 26 [the Internal Revenue Code of 1986].
(D) Permitted disparities in plan contributions or benefits—A plan shall not be treated as failing to meet the requirements of paragraph (1) solely because the plan provides a disparity in contributions or benefits with respect to which the requirements of section 401(l) of Title 26 [the Internal Revenue Code of 1986] are met.
(E) Indexing permitted—
(i) In general—A plan shall not be treated as failing to meet the requirements of paragraph (1) solely because the plan provides for indexing of accrued benefits under the plan.
(ii) Protection against loss—Except in the case of any benefit provided in the form of a variable annuity, clause (i) shall not apply with respect to any indexing which results in an accrued benefit less than the accrued benefit determined without regard to such indexing.
(iii) Indexing—For purposes of this subparagraph, the term "indexing" means, in connection with an accrued benefit, the periodic adjustment of the accrued benefit by means of the application of a recognized investment index or methodology.
(F) Early retirement benefit or retirement-type subsidy—For purposes of this paragraph, the terms "early retirement benefit" and "retirement-type subsidy" have the meaning given such terms in section 1053(g)(2)(A) of this title [section 203(g)(2)(A) of the Employee Retirement Income Security Act of 1974].
(G) Benefit accrued to date—For purposes of this paragraph, any reference to the accrued benefit shall be a reference to such benefit accrued to date.
(j) Employment as firefighter or law enforcement officer

It shall not be unlawful for an employer which is a State, a political subdivision of a State, an agency or instrumentality of a State or a political subdivision of a State, or an interstate agency to fail or refuse to hire or to discharge any individual because of such individual's age if such action is taken-
(1) with respect to the employment of an individual as a firefighter or as a law enforcement officer, the employer has complied with section 3(d)(2) of the Age Discrimination in Employment Amendments of 1996 if the individual was discharged after the date described in such section, and the individual has attained-
(A) the age of hiring or retirement, respectively, in effect under applicable State or local law on March 3, 1983; or
(B) (i) if the individual was not hired, the age of hiring in effect on the date of such failure or refusal to hire under applicable State or local law enacted after September 30, 1996; or
(ii) if applicable State or local law was enacted after September 30, 1996, and the individual was discharged, the higher of-
(I) the age of retirement in effect on the date of such discharge under such law; and
(II) age 55; and
(2) pursuant to a bona fide hiring or retirement plan that is not a subterfuge to evade the purposes of this chapter.
(k) Seniority system or employee benefit plan; compliance
A seniority system or employee benefit plan shall comply with this chapter regardless of the date of adoption of such system or plan.
(l) Lawful practices; minimum age as condition of eligibility for retirement benefits; deductions from severance pay; reduction of long-term disability benefits
Notwithstanding clause (i) or (ii) of subsection (f)(2)(B) of this section-
(1) (A) It shall not be a violation of subsection (a), (b), (c), or (e) of this section solely because-
(i) an employee pension benefit plan (as defined in section 1002(2) of this title [section 2(2) of the Employee Retirement Income Security Act of 1974]) provides for the attainment of a minimum age as a condition of eligibility for normal or early retirement benefits; or
(ii) a defined benefit plan (as defined in section 1002(35) of this title [section 2(35) of the Employee Retirement Income Security Act]) provides for-
(I) payments that constitute the subsidized portion of an early retirement benefit; or
(II) social security supplements for plan participants that commence before the age and terminate at the age (specified by the plan) when participants are eligible to receive reduced or unreduced old-age insurance benefits under title II of the Social Security Act (42 U.S.C. 401 et seq.), and that do not exceed such old-age insurance benefits.
(B) A voluntary early retirement incentive plan that—
(i) is maintained by—
(I) a local educational agency (as defined in section 7801 of Title 20 [the Elementary and Secondary Education Act of 1965], or
(II) an education association which principally represents employees of 1 or more agencies described in subclause (I) and which is described in section 501(c) (5) or (6) of Title 26 [the Internal Revenue Code of 1986] and exempt from taxation under section 501(a) of Title 26 [the Internal Revenue Code of 1986], and
(ii) makes payments or supplements described in subclauses (I) and (II) of subparagraph (A)(ii) in coordination with a defined benefit plan (as so defined) maintained by an eligible employer described in section 457(e)(1) (A) of Title 26 [the Internal Revenue Code of 1986] or by an education association described in clause (i)(II),

shall be treated solely for purposes of subparagraph (A)(ii) as if it were a part of the defined benefit plan with respect to such payments or supplements. Payments or supplements under such a voluntary early retirement incentive plan shall not constitute severance pay for purposes of paragraph (2).

(2) (A) It shall not be a violation of subsection (a), (b), (c), or (e) of this section solely because following a contingent event unrelated to age—

(i) the value of any retiree health benefits received by an individual eligible for an immediate pension;
(ii) the value of any additional pension benefits that are made available solely as a result of the contingent event unrelated to age and following which the individual is eligible for not less than an immediate and unreduced pension; or
(iii) the values described in both clauses (i) and (ii); are deducted from severance pay made available as a result of the contingent event unrelated to age.
(B) For an individual who receives immediate pension benefits that are actuarially reduced under subparagraph (A)(i), the amount of the deduction available pursuant to subparagraph (A)(i) shall be reduced by the same percentage as the reduction in the pension benefits.
(C) For purposes of this paragraph, severance pay shall include that portion of supplemental unemployment compensation benefits (as described in section 501(c)(17) of Title 26 [the Internal Revenue Code of 1986]) that-
(i) constitutes additional benefits of up to 52 weeks;
(ii) has the primary purpose and effect of continuing benefits until an individual becomes eligible for an immediate and unreduced pension; and
(iii) is discontinued once the individual becomes eligible for an immediate and unreduced pension.
(D) For purposes of this paragraph and solely in order to make the deduction authorized under this paragraph, the term "retiree health benefits'' means benefits provided pursuant to a group health plan covering retirees, for which (determined as of the contingent event unrelated to age)—
(i) the package of benefits provided by the employer for the retirees who are below age 65 is at least comparable to benefits provided under title XVIII of the Social Security Act (42 U.S.C. 1395 et seq.);
(ii) the package of benefits provided by the employer for the retirees who are age 65 and above is at least comparable to that offered under a plan that provides a benefit package with one-fourth the value of benefits provided under title XVIII of such Act; or
(iii) the package of benefits provided by the employer is as described in clauses (i) and (ii).

(E) (i) If the obligation of the employer to provide retiree health benefits is of limited duration, the value for each individual shall be calculated at a rate of $3,000 per year for benefit years before age 65, and $750 per year for benefit years beginning at age 65 and above.

(ii) If the obligation of the employer to provide retiree health benefits is of unlimited duration, the value for each individual shall be calculated at a rate of $48,000 for individuals below age 65, and $24,000 for individuals age 65 and above.
(iii) The values described in clauses (i) and (ii) shall be calculated based on the age of the individual as of the date of the contingent event unrelated to age. The values are effective on October 16, 1990, and shall be adjusted on an annual basis, with respect to a contingent event that occurs subsequent to the first year after October 16, 1990, based on the medical component of the Consumer Price Index for all-urban consumers published by the Department of Labor.
(iv) If an individual is required to pay a premium for retiree health benefits, the value calculated pursuant to this subparagraph shall be reduced by whatever percentage of the overall premium the individual is required to pay.
(F) If an employer that has implemented a deduction pursuant to subparagraph (A) fails to fulfill the obligation described in subparagraph (E), any aggrieved individual may bring an action for specific

performance of the obligation described in subparagraph (E). The relief shall be in addition to any other remedies provided under Federal or State law.
(3) It shall not be a violation of subsection (a), (b), (c), or (e) of this section solely because an employer provides a bona fide employee benefit plan or plans under which long-term disability benefits received by an individual are reduced by any pension benefits (other than those attributable to employee contributions)—
(A) paid to the individual that the individual voluntarily elects to receive; or
(B) for which an individual who has attained the later of age 62 or normal retirement age is eligible.
(m) Voluntary retirement incentive plans
Notwithstanding subsection (f)(2)(b) of this section, it shall not be a violation of subsection (a), (b), (c), or (e) of this section solely because a plan of an institution of higher education (as defined in section 1001 of Title 20 [the Higher Education Act of 1965]) offers employees who are serving under a contract of unlimited tenure (or similar arrangement providing for unlimited tenure) supplemental benefits upon voluntary retirement that are reduced or eliminated on the basis of age, if—
(1) such institution does not implement with respect to such employees any age-based reduction or cessation of benefits that are not such supplemental benefits, except as permitted by other provisions of this chapter;
(2) such supplemental benefits are in addition to any retirement or severance benefits which have been offered generally to employees serving under a contract of unlimited tenure (or similar arrangement providing for unlimited tenure), independent of any early retirement or exit-incentive plan, within the preceding 365 days; and
(3) any employee who attains the minimum age and satisfies all non-age-based conditions for receiving a benefit under the plan has an opportunity lasting not less than 180 days to elect to retire and to receive the maximum benefit that could then be elected by a younger but otherwise similarly situated employee, and the plan does not require retirement to occur sooner than 180 days after such election.
STUDY BY SECRETARY OF LABOR; REPORTS TO PRESIDENT AND CONGRESS; SCOPE OF STUDY; IMPLEMENTATION OF STUDY; TRANSMITTAL DATE OF REPORTS
SEC. 624. [Section 5]

(a) (1) The EEOC [originally, the Secretary of Labor] is directed to undertake an appropriate study of institutional and other arrangements giving rise to involuntary retirement, and report his findings and any appropriate legislative recommendations to the President and to the Congress. Such study shall include—

(A) an examination of the effect of the amendment made by section 3(a) of the Age Discrimination in Employment Act Amendments of 1978 in raising the upper age limitation established by section 631(a) of this title [section 1(a)] to 70 years of age;
(B) a determination of the feasibility of eliminating such limitation;
(C) a determination of the feasibility of raising such limitation above 70 years of age; and
(D) an examination of the effect of the exemption contained in section 631(c) of this title [section 1(c)], relating to certain executive employees, and the exemption contained in section 631(d) of this title [section 1(d)], relating to tenured teaching personnel.
(2) The EEOC [originally, the Secretary of Labor] may undertake the study required by paragraph (1) of this subsection directly or by contract or other arrangement.
(b) The report required by subsection (a) of this section shall be transmitted to the President and to the Congress as an interim report not later than January 1, 1981, and in final form not later than January 1, 1982.
Transfer of Functions [All functions relating to age discrimination administration and enforcement vested by Section 6 in the Secretary of Labor or the Civil Service Commission were transferred to the

Equal Employment Opportunity Commission effective January 1, 1979 under the President's Reorganization Plan No. 1.]

ADMINISTRATION

SEC. 625. [Section 6]

The EEOC [originally, the Secretary of Labor] shall have the power-

(a) Delegation of functions; appointment of personnel; technical assistance

to make delegations, to appoint such agents and employees, and to pay for technical assistance on a fee for service basis, as he deems necessary to assist him in the performance of his functions under this chapter;

(b) Cooperation with other agencies, employers, labor organizations, and employment agencies

to cooperate with regional, State, local, and other agencies, and to cooperate with and furnish technical assistance to employers, labor organizations, and employment agencies to aid in effectuating the purposes of this chapter.

RECORDKEEPING, INVESTIGATION, AND ENFORCEMENT

SEC. 626. [Section 7]

(a) Attendance of witnesses; investigations, inspections, records, and homework regulations

The Equal Employment Opportunity Commission shall have the power to make investigations and require the keeping of records necessary or appropriate for the administration of this chapter in accordance with the powers and procedures provided in sections 209 and 211 of this title [sections 9 and 11 of the Fair Labor Standards Act of 1938, as amended].

(b) Enforcement; prohibition of age discrimination under fair labor standards; unpaid minimum wages and unpaid overtime compensation; liquidated damages; judicial relief; conciliation, conference, and persuasion

The provisions of this chapter shall be enforced in accordance with the powers, remedies, and procedures provided in sections 211(b), 216 (except for subsection (a) thereof), and 217 of this title [sections 11(b), 16 (except for subsection (a) thereof), and 17 of the Fair Labor Standards Act of 1938, as amended], and subsection (c) of this section. Any act prohibited under section 623 of this title [section 4] shall be deemed to be a prohibited act under section 215 of this title [section 15 of the Fair Labor Standards Act of 1938, as amended]. Amounts owing to a person as a result of a violation of this chapter shall be deemed to be unpaid minimum wages or unpaid overtime compensation for purposes of sections 216 and 217 of this title [sections 16 and 17 of the Fair Labor Standards Act of 1938, as amended]: Provided, That liquidated damages shall be payable only in cases of willful violations of this chapter. In any action brought to enforce this chapter the court shall have jurisdiction to grant such legal or equitable relief as may be appropriate to effectuate the purposes of this chapter, including without limitation judgments compelling employment, reinstatement or promotion, or enforcing the liability for amounts deemed to be unpaid minimum wages or unpaid overtime compensation under this section. Before instituting any action under this section, the Equal Employment Opportunity Commission shall attempt to eliminate the discriminatory practice or practices alleged, and to effect voluntary compliance with the requirements of this chapter through informal methods of conciliation, conference, and persuasion.

(c) Civil actions; persons aggrieved; jurisdiction; judicial relief; termination of individual action upon commencement of action by Commission; jury trial

(1) Any person aggrieved may bring a civil action in any court of competent jurisdiction for such legal or equitable relief as will effectuate the purposes of this chapter: Provided, That the right of any person to bring such action shall terminate upon the commencement of an action by the Equal Employment Opportunity Commission to enforce the right of such employee under this chapter.

(2) In an action brought under paragraph (1), a person shall be entitled to a trial by jury of any issue of fact in any such action for recovery of amounts owing as a result of a violation of this chapter, regardless of whether equitable relief is sought by any party in such action.
(d)(1) Filing of charge with Commission; timeliness; conciliation, conference, and persuasion
No civil action may be commenced by an individual under this section until 60 days after a charge alleging unlawful discrimination has been filed with the Equal Employment Opportunity Commission. Such a charge shall be filed-
(A) within 180 days after the alleged unlawful practice occurred; or
(B) in a case to which section 633(b) of this title applies, within 300 days after the alleged unlawful practice occurred, or within 30 days after receipt by the individual of notice of termination of proceedings under State law, whichever is earlier.
(2) Upon receiving such a charge, the Commission shall promptly notify all persons named in such charge as prospective defendants in the action and shall promptly seek to eliminate any alleged unlawful practice by informal methods of conciliation, conference, and persuasion.
(3) For purposes of this section, an unlawful practice occurs, with respect to discrimination in compensation in violation of this Act, when a discriminatory compensation decision or other practice is adopted, when a person becomes subject to a discriminatory compensation decision or other practice, or when a person is affected by application of a discriminatory compensation decision or other practice, including each time wages, benefits, or other compensation is paid, resulting in whole or in part from such a decision or other practice.
(e) Reliance on administrative rulings; notice of dismissal or termination; civil action after receipt of notice
Section 259 of this title [section 10 of the Portal to Portal Act of 1947] shall apply to actions under this chapter. If a charge filed with the Commission under this chapter is dismissed or the proceedings of the Commission are otherwise terminated by the Commission, the Commission shall notify the person aggrieved. A civil action may be brought under this section by a person defined in section 630(a) of this title [section 11(a)] against the respondent named in the charge within 90 days after the date of the receipt of such notice.—
(f) Waiver
(1) An individual may not waive any right or claim under this chapter unless the waiver is knowing and voluntary. Except as provided in paragraph (2), a waiver may not be considered knowing and voluntary unless at a minimum—
(A) the waiver is part of an agreement between the individual and the employer that is written in a manner calculated to be understood by such individual, or by the average individual eligible to participate;
(B) the waiver specifically refers to rights or claims arising under this chapter;
(C) the individual does not waive rights or claims that may arise after the date the waiver is executed;
(D) the individual waives rights or claims only in exchange for consideration in addition to anything of value to which the individual already is entitled;
(E) the individual is advised in writing to consult with an attorney prior to executing the agreement;
(F) (i) the individual is given a period of at least 21 days within which to consider the agreement; or
(ii) if a waiver is requested in connection with an exit incentive or other employment termination program offered to a group or class of employees, the individual is given a period of at least 45 days within which to consider the agreement;
(G) the agreement provides that for a period of at least 7 days following the execution of such agreement, the individual may revoke the agreement, and the agreement shall not become effective or enforceable until the revocation period has expired;

(H) if a waiver is requested in connection with an exit incentive or other employment termination program offered to a group or class of employees, the employer (at the commencement of the period specified in subparagraph (F)) informs the individual in writing in a manner calculated to be understood by the average individual eligible to participate, as to—
(i) any class, unit, or group of individuals covered by such program, any eligibility factors for such program, and any time limits applicable to such program; and
(ii) the job titles and ages of all individuals eligible or selected for the program, and the ages of all individuals in the same job classification or organizational unit who are not eligible or selected for the program.
(2) A waiver in settlement of a charge filed with the Equal Employment Opportunity Commission, or an action filed in court by the individual or the individual's representative, alleging age discrimination of a kind prohibited under section 623 or 633a of this title [section 4 or 15] may not be considered knowing and voluntary unless at a minimum—
(A) subparagraphs (A) through (E) of paragraph (1) have been met; and
(B) the individual is given a reasonable period of time within which to consider the settlement agreement.
(3) In any dispute that may arise over whether any of the requirements, conditions, and circumstances set forth in subparagraph (A), (B), (C), (D), (E), (F), (G), or (H) of paragraph (1), or subparagraph (A) or (B) of paragraph (2), have been met, the party asserting the validity of a waiver shall have the burden of proving in a court of competent jurisdiction that a waiver was knowing and voluntary pursuant to paragraph (1) or (2).
(4) No waiver agreement may affect the Commission's rights and responsibilities to enforce this chapter. No waiver may be used to justify interfering with the protected right of an employee to file a charge or participate in an investigation or proceeding conducted by the Commission.

NOTICES TO BE POSTED

SEC. 627. [Section 8]

Every employer, employment agency, and labor organization shall post and keep posted in conspicuous places upon its premises a notice to be prepared or approved by the Equal Employment Opportunity Commission setting forth information as the Commission deems appropriate to effectuate the purposes of this chapter.

RULES AND REGULATIONS

SEC. 628. [Section 9]

In accordance with the provisions of subchapter II of chapter 5 of title 5 [Administrative Procedures Act, 5 U.S.C. § 551 et seq.], the Equal Employment Opportunity Commission may issue such rules and regulations as it may consider necessary or appropriate for carrying out this chapter, and may establish such reasonable exemptions to and from any or all provisions of this chapter as it may find necessary and proper in the public interest.

CRIMINAL PENALTIES

SEC. 629. [Section 10]

Whoever shall forcibly resist, oppose, impede, intimidate or interfere with a duly authorized representative of the Equal Employment Opportunity Commission while it is engaged in the performance of duties under this chapter shall be punished by a fine of not more than $500 or by imprisonment for not more than one year, or by both: Provided, however, That no person shall be imprisoned under this section except when there has been a prior conviction hereunder.

DEFINITIONS

SEC. 630. [Section 11]

For the purposes of this chapter-

(a) The term "person" means one or more individuals, partnerships, associations, labor organizations, corporations, business trusts, legal representatives, or any organized groups of persons.
(b) The term "employer" means a person engaged in an industry affecting commerce who has twenty or more employees for each working day in each of twenty or more calendar weeks in the current or preceding calendar year: Provided, That prior to June 30, 1968, employers having fewer than fifty employees shall not be considered employers. The term also means (1) any agent of such a person, and (2) a State or political subdivision of a State and any agency or instrumentality of a State or a political subdivision of a State, and any interstate agency, but such term does not include the United States, or a corporation wholly owned by the Government of the United States.
(c) The term "employment agency" means any person regularly undertaking with or without compensation to procure employees for an employer and includes an agent of such a person; but shall not include an agency of the United States.
(d) The term "labor organization" means a labor organization engaged in an industry affecting commerce, and any agent of such an organization, and includes any organization of any kind, any agency, or employee representation committee, group, association, or plan so engaged in which employees participate and which exists for the purpose, in whole or in part, of dealing with employers concerning grievances, labor disputes, wages, rates of pay, hours, or other terms or conditions of employment, and any conference, general committee, joint or system board, or joint council so engaged which is subordinate to a national or international labor organization.
(e) A labor organization shall be deemed to be engaged in an industry affecting commerce if (1) it maintains or operates a hiring hall or hiring office which procures employees for an employer or procures for employees opportunities to work for an employer, or (2) the number of its members (or, where it is a labor organization composed of other labor organizations or their representatives, if the aggregate number of the members of such other labor organization) is fifty or more prior to July 1, 1968, or twenty-five or more on or after July 1, 1968, and such labor organization—
(1) is the certified representative of employees under the provisions of the National Labor Relations Act, as amended [29 U.S.C. 151 et seq.], or the Railway Labor Act, as amended [45 U.S.C. 151 et seq.]; or
(2) although not certified, is a national or international labor organization or a local labor organization recognized or acting as the representative of employees of an employer or employers engaged in an industry affecting commerce; or
(3) has chartered a local labor organization or subsidiary body which is representing or actively seeking to represent employees of employers within the meaning of paragraph (1) or (2); or
(4) has been chartered by a labor organization representing or actively seeking to represent employees within the meaning of paragraph (1) or (2) as the local or subordinate body through which such employees may enjoy membership or become affiliated with such labor organization; or
(5) is a conference, general committee, joint or system board, or joint council subordinate to a national or international labor organization, which includes a labor organization engaged in an industry affecting commerce within the meaning of any of the preceding paragraphs of this subsection.
(f) The term "employee" means an individual employed by any employer except that the term "employee" shall not include any person elected to public office in any State or political subdivision of any State by the qualified voters thereof, or any person chosen by such officer to be on such officer's personal staff, or an appointee on the policymaking level or an immediate adviser with respect to the exercise of the constitutional or legal powers of the office. The exemption set forth in the preceding sentence shall not include employees subject to the civil service laws of a State government, governmental agency, or political subdivision. The term "employee" includes any individual who is a citizen of the United States employed by an employer in a workplace in a foreign country.
[The exclusion from the term "employee" of any person chosen by an elected official "to be on such official's personal staff, or an appointee on the policymaking level or an immediate advisor with respect

to the exercise of the constitutional or legal powers of the office," remains in section 11(f). However, the Civil Rights Act of 1991 now provides special procedures for such persons who feel they are victims of age and other types of discrimination prohibited by EEOC enforced statutes. See section 321 of the Civil Rights Act of 1991.]

(g) The term "commerce" means trade, traffic, commerce, transportation, transmission, or communication among the several States; or between a State and any place outside thereof; or within the District of Columbia, or a possession of the United States; or between points in the same State but through a point outside thereof.

(h) The term "industry affecting commerce" means any activity, business, or industry in commerce or in which a labor dispute would hinder or obstruct commerce or the free flow of commerce and includes any activity or industry "affecting commerce" within the meaning of the Labor-Management Reporting and Disclosure Act of 1959 [29 U.S.C. 401 et seq.].

(i) The term "State" includes a State of the United States, the District of Columbia, Puerto Rico, the Virgin Islands, American Samoa, Guam, Wake Island, the Canal Zone, and Outer Continental Shelf lands defined in the Outer Continental Shelf Lands Act [43 U.S.C. 1331 et seq.].

(j) The term "firefighter" means an employee, the duties of whose position are primarily to perform work directly connected with the control and extinguishment of fires or the maintenance and use of firefighting apparatus and equipment, including an employee engaged in this activity who is transferred to a supervisory or administrative position.

(k) The term "law enforcement officer" means an employee, the duties of whose position are primarily the investigation, apprehension, or detention of individuals suspected or convicted of offenses against the criminal laws of a State, including an employee engaged in this activity who is transferred to a supervisory or administrative position. For the purpose of this subsection, "detention" includes the duties of employees assigned to guard individuals incarcerated in any penal institution.

(l) The term "compensation, terms, conditions, or privileges of employment" encompasses all employee benefits, including such benefits provided pursuant to a bona fide employee benefit plan.

AGE LIMITS

SEC. 631. [Section 12]

(a) Individuals of at least 40 years of age

The prohibitions in this chapter shall be limited to individuals who are at least 40 years of age.

(b) Employees or applicants for employment in Federal Government

In the case of any personnel action affecting employees or applicants for employment which is subject to the provisions of section 633a of this title [section 15], the prohibitions established in section 633a of this title [section 15] shall be limited to individuals who are at least 40 years of age.

(c) Bona fide executives or high policymakers

(1) Nothing in this chapter shall be construed to prohibit compulsory retirement of any employee who has attained 65 years of age and who, for the 2-year period immediately before retirement, is employed in a bona fide executive or a high policymaking position, if such employee is entitled to an immediate nonforfeitable annual retirement benefit from a pension, profit-sharing, savings, or deferred compensation plan, or any combination of such plans, of the employer of such employee, which equals, in the aggregate, at least $44,000.

(2) In applying the retirement benefit test of paragraph (1) of this subsection, if any such retirement benefit is in a form other than a straight life annuity (with no ancillary benefits), or if employees contribute to any such plan or make rollover contributions, such benefit shall be adjusted in accordance with regulations prescribed by the Equal Employment Opportunity Commission, after consultation with the Secretary of the Treasury, so that the benefit is the equivalent of a straight life annuity (with no ancillary benefits) under a plan to which employees do not contribute and under which no rollover contributions are made.

ANNUAL REPORT
SEC. 632. [Section 13]
[Repealed]
FEDERAL-STATE RELATIONSHIP
SEC. 633. [Section 14]
(a) Federal action superseding State action
Nothing in this chapter shall affect the jurisdiction of any agency of any State performing like functions with regard to discriminatory employment practices on account of age except that upon commencement of action under this chapter such action shall supersede any State action.
(b) Limitation of Federal action upon commencement of State proceedings
In the case of an alleged unlawful practice occurring in a State which has a law prohibiting discrimination in employment because of age and establishing or authorizing a State authority to grant or seek relief from such discriminatory practice, no suit may be brought under section 626 of this title [section 7] before the expiration of sixty days after proceedings have been commenced under the State law, unless such proceedings have been earlier terminated: Provided, That such sixty-day period shall be extended to one hundred and twenty days during the first year after the effective date of such State law. If any requirement for the commencement of such proceedings is imposed by a State authority other than a requirement of the filing of a written and signed statement of the facts upon which the proceeding is based, the proceeding shall be deemed to have been commenced for the purposes of this subsection at the time such statement is sent by registered mail to the appropriate State authority.
NONDISCRIMINATION ON ACCOUNT OF AGE IN FEDERAL GOVERNMENT EMPLOYMENT
SEC. 633a. [Section 15]
(a) Federal agencies affected
All personnel actions affecting employees or applicants for employment who are at least 40 years of age (except personnel actions with regard to aliens employed outside the limits of the United States) in military departments as defined in section 102 of Title 5 [5 U.S.C. § 102], in executive agencies as defined in section 105 of Title 5 [5 U.S.C. § 105] (including employees and applicants for employment who are paid from nonappropriated funds), in the United States Postal Service and the Postal Regulatory Commission, in those units in the government of the District of Columbia having positions in the competitive service, and in those units of the judicial branch of the Federal Government having positions in the competitive service, in the Smithsonian Institution, and in the Government Printing Office, the Government Accountability Office, and the Library of Congress shall be made free from any discrimination based on age.
(b) Enforcement by Equal Employment Opportunity Commission and by Librarian of Congress in the Library of Congress; remedies; rules, regulations, orders, and instructions of Commission: compliance by Federal agencies; powers and duties of Commission; notification of final action on complaint of discrimination; exemptions: bona fide occupational qualification
Except as otherwise provided in this subsection, the Equal Employment Opportunity Commission is authorized to enforce the provisions of subsection (a) of this section through appropriate remedies, including reinstatement or hiring of employees with or without backpay, as will effectuate the policies of this section. The Equal Employment Opportunity Commission shall issue such rules, regulations, orders, and instructions as it deems necessary and appropriate to carry out its responsibilities under this section. The Equal Employment Opportunity Commission shall-
(1) be responsible for the review and evaluation of the operation of all agency programs designed to carry out the policy of this section, periodically obtaining and publishing (on at least a semiannual basis) progress reports from each department, agency, or unit referred to in subsection (a) of this section;
(2) consult with and solicit the recommendations of interested individuals, groups, and organizations relating to nondiscrimination in employment on account of age; and

(3) provide for the acceptance and processing of complaints of discrimination in Federal employment on account of age.

The head of each such department, agency, or unit shall comply with such rules, regulations, orders, and instructions of the Equal Employment Opportunity Commission which shall include a provision that an employee or applicant for employment shall be notified of any final action taken on any complaint of discrimination filed by him the reunder. Reasonable exemptions to the provisions of this section may be established by the Commission but only when the Commission has established a maximum age requirement on the basis of a determination that age is a bona fide occupational qualification necessary to the performance of the duties of the position. With respect to employment in the Library of Congress, authorities granted in this subsection to the Equal Employment Opportunity Commission shall be exercised by the Librarian of Congress.

(c) Civil actions; jurisdiction; relief

Any person aggrieved may bring a civil action in any Federal district court of competent jurisdiction for such legal or equitable relief as will effectuate the purposes of this chapter.

(d) Notice to Commission; time of notice; Commission notification of prospective defendants; Commission elimination of unlawful practices

When the individual has not filed a complaint concerning age discrimination with the Commission, no civil action may be commenced by any individual under this section until the individual has given the Commission not less than thirty days' notice of an intent to file such action. Such notice shall be filed within one hundred and eighty days after the alleged unlawful practice occurred. Upon receiving a notice of intent to sue, the Commission shall promptly notify all persons named therein as prospective defendants in the action and take any appropriate action to assure the elimination of any unlawful practice.

(e) Duty of Government agency or official

Nothing contained in this section shall relieve any Government agency or official of the responsibility to assure nondiscrimination on account of age in employment as required under any provision of Federal law.

(f) Applicability of statutory provisions to personnel action of Federal departments, etc.

Any personnel action of any department, agency, or other entity referred to in subsection (a) of this section shall not be subject to, or affected by, any provision of this chapter, other than the provisions of sections 7(d)(3) and 631(b) of this title [section 12(b)] and the provisions of this section.

(g) Study and report to President and Congress by Equal Employment Opportunity Commission; scope

(1) The Equal Employment Opportunity Commission shall undertake a study relating to the effects of the amendments made to this section by the Age Discrimination in Employment Act Amendments of 1978, and the effects of section 631(b) of this title [section 12(b)].

(2) The Equal Employment Opportunity Commission shall transmit a report to the President and to the Congress containing the findings of the Commission resulting from the study of the Commission under paragraph (1) of this subsection. Such report shall be transmitted no later than January 1, 1980.

[Section 16 of the ADEA (not reproduced in the U.S. Code)]

Appendix IX: Executive Order 13166

Executive Order 13166 of August 11, 2000

Improving Access to Services for Persons With Limited English Proficiency

By the authority vested in me as President by the Constitution and the laws of the United States of America, and to improve access to federally conducted and federally assisted programs and activities for persons who, as a result of national origin, are limited in their English proficiency (LEP), it is hereby ordered as follows:

Section 1. *Goals.*

The Federal Government provides and funds an array of services that can be made accessible to otherwise eligible persons who are not proficient in the English language. The Federal Government is committed to improving the accessibility of these services to eligible LEP persons, a goal that reinforces its equally important commitment to promoting programs and activities designed to help individuals learn English. To this end, each Federal agency shall examine the services it provides and develop and implement a system by which LEP persons can meaningfully access those services consistent with, and without unduly burdening, the fundamental mission of the agency. Each Federal agency shall also work to ensure that recipients of Federal financial assistance (recipients) provide meaningful access to their LEP applicants and beneficiaries. To assist the agencies with this endeavor, the Department of Justice has today issued a general guidance document (LEP Guidance), which sets forth the compliance standards that recipients must follow to ensure that the programs and activities they normally provide in English are accessible to LEP persons and thus do not discriminate on the basis of national origin in violation of title VI of the Civil Rights Act of 1964, as amended, and its implementing regulations. As described in the LEP Guidance, recipients must take reasonable steps to ensure meaningful access to their programs and activities by LEP persons.

Sec. 2. *Federally Conducted Programs and Activities.*

Each Federal agency shall prepare a plan to improve access to its federally conducted programs and activities by eligible LEP persons. Each plan shall be consistent with the standards set forth in the LEP Guidance, and shall include the steps the agency will take to ensure that eligible LEP persons can meaningfully access the agency's programs and activities. Agencies shall develop and begin to implement these plans within 120 days of the date of this order, and shall send copies of their plans to the Department of Justice, which shall serve as the central repository of the agencies' plans.

Sec. 3. *Federally Assisted Programs and Activities.*

Each agency providing Federal financial assistance shall draft title VI guidance specifically tailored to its recipients that is consistent with the LEP Guidance issued by the Department of Justice. This agency-specific guidance shall detail how the general standards established in the LEP Guidance will be applied to the agency's recipients. The agency-specific guidance shall take into account the types of services provided by the recipients, the individuals served by the recipients, and other factors set out in the LEP Guidance. Agencies that already have developed title VI guidance that the Department of Justice determines is consistent with the LEP Guidance shall examine their existing guidance, as well as their programs and activities, to determine if additional guidance is necessary to comply with this order. The Department of Justice shall consult with the agencies in creating their guidance and, within 120 days of the date of this order, each agency shall submit its specific guidance to the Department of Justice for review and approval. Following approval by the Department of Justice, each agency shall publish its guidance document in the **Federal Register** for public comment.

Sec. 4. *Consultations.*

In carrying out this order, agencies shall ensure that stakeholders, such as LEP persons and their representative organizations, recipients, and other appropriate individuals or entities, have an adequate opportunity to provide input. Agencies will evaluate the particular needs of the LEP persons they and their recipients serve and the burdens of compliance on the agency and its recipients. This input from stakeholders will assist the agencies

in developing an approach to ensuring meaningful access by LEP persons that is practical and effective, fiscally responsible, responsive to the particular circumstances of each agency, and can be readily implemented.

Sec. 5. *Judicial Review.*
This order is intended only to improve the internal management of the executive branch and does not create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers or employees, or any person.

THE WHITE HOUSE,
August 11, 2000.
[FR Doc. 00–20938
Filed 8–15–00; 8:45 am]
Billing code 3195–01–P

Appendix X - Environmental Justice Impact Evaluation

FDM 21-15 Attachment 5.7 Environmental Justice Evaluation

ENVIRONMENTAL JUSTICE IMPACT EVALUATION Wisconsin Department of Transportation

DT2093 2004

Alternative	Preferred ☐ Yes ☐ No
Length of Center Line and Termini This Sheet is Evaluating	

1. Determine the presence and estimate the size of the minority population and/or low-income population affected by the proposed action. Visit www.fhwa.dot/legsregs/directives/orders/6640_23.htm and www.aoa.gov/prof/poverty_guidelines/poverty_guidelines.asp for definitions of Environmental justice protected populations.

   ☐ No minority populations or low-income populations are present in the project's area of influence. (Process is complete.)

   ☐ Yes, a minority population or low-income population is located in the project's area of influence. (Proceed with the evaluation.)

2. Identify and give a brief description of the minority populations or low-income populations affected by the proposed action. Include the relative size of the populations and their pertinent demographic characteristics. (Check all that apply.)

   ☐ Black (having origins in any of the black racial groups of Africa)
   ☐ Low income ☐ Elderly ☐ Disabled

   ☐ Hispanic (of Mexican, Puerto Rican, Cuban or South American, or other Spanish culture or origin, regardless of race)
   ☐ Low income ☐ Elderly ☐ Disabled

   ☐ Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands)
   ☐ Low income ☐ Elderly ☐ Disabled

   ☐ American Indian and Alaska Native (having origins in any of the original people of North American and who maintains cultural identification through tribal affiliation or community recognition)
   ☐ Low income ☐ Elderly ☐ Disabled

   ☐ White and any combination of the above.
   ☐ Low income ☐ Elderly ☐ Disabled

   ☐ Non-minority low-income population
   ☐ Elderly ☐ Disabled

3. As a result of public involvement and inter-agency coordination, identify and describe issues of concern or controversy to the minority population or low-income population.

   ☐ No issues of concern or controversy identified.
   ☐ Issues of concern or controversy identified below. Describe issues and how they were resolved.

FDM 21-15 Attachment 5.7 Environmental Justice Evaluation

4. Based on data and scientific analyses (e.g., modeling, regression analysis, etc.), identify and describe effect(s) to the minority population or low-income population.

Indicate which other environmental factors are involved or inter-related.

☐ General Economics	☐ Community & Residential	☐ Economic Development & Business
☐ Agriculture	☐ Wetlands	☐ Streams & Floodplains
☐ Lakes & Other Open Water	☐ Upland	☐ Erosion Control
☐ Storm Water Management	☐ Air Quality	☐ Construction Stage Sound Quality
☐ Traffic Noise	☐ Section 4(f) & 6(f)	☐ Historic Resources
☐ Archeological Resources	☐ Hazardous Substances & USTs	☐ Aesthetics
☐ Coastal Zone	☐ Noise	☐ Other

(NOTE: 3 and 4 above may overlap)

5. Indicate whether effects to a minority population or a low-income population are beneficial or adverse.

☐ Only beneficial effects will occur. Describe effects on affected population and discuss whether they are direct, indirect or cumulative. Include a discussion of any measures to enhance beneficial effects. (Process is complete.)

☐ Identified adverse effects are proportionate to those experienced by the general population. Describe effects on affected population and discuss whether they are direct, indirect or cumulative. Include a discussion of any measures to avoid, minimize, or mitigate adverse effects. (Process is complete.)

☐ Identified effects are disproportionately high and adverse. A disproportionately high and adverse effect means an adverse effect that: 1) is predominately borne by a minority population and/or a low-income population; or 2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Describe disproportionately high and adverse effects on affected population and discuss whether they are direct, indirect or cumulative. Include a discussion of any measures to avoid, minimize, or mitigate disproportionately high and adverse effects or enhance beneficial effects.

6. Indicate whether the individuals in the affected population(s) are protected under Title VI of the 1964 Civil Rights Act. (Title IV prohibits discrimination on the basis of race, color, or country of origin. See item 2 above for definitions of Title VI minorities.)

☐ No – Title VI protections do not apply, but other requirements under the Age Discrimination Act or Americans With Disabilities Act do apply. Describe effects and how they will be avoided, minimized or mitigated.

☐ Yes - Title VI protections apply. Describe any special services, considerations, or mitigation that will be used to avoid, minimize, or mitigate effects to Title VI individuals.

7. Will the Alternative/Project be carried out even with disproportionately high and adverse effects on a minority population or low-income population?

☐ No, the Alternative/Project will not be carried out because of disproportionately high and adverse effects on a minority population or low-income population.

☐ There is no substantial need for the Alternative/Project.

☐ Another alternative with less severe effects on the minority population or low-income population can meet the needs of this and is practical.

FDM 21-15 Attachment 5.7 Environmental Justice Evaluation

☐ Yes, the Alternative/Project will be carried out with the mitigation of disproportionately high and adverse effects.

☐ Yes, a substantial need for the Alternative/Project exists based on the overall public interest. Alternatives that would have less adverse effects on minority populations or low-income populations have either:

- ☐ Adverse social, economic, environmental, or human health impacts that are more severe; or
- ☐ Would involve increased costs of an extraordinary magnitude.

8. Identify and discuss mitigation and enhancement efforts to address disproportionately high and adverse effects to Title VI protected minority people if different from those shown in item 5 above.

INDIRECT AND CUMULATIVE EFFECTS ANALYSIS

I-94 East-West Corridor Study

Wisconsin Department of Transportation

JANUARY, 2016

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1 INTRODUCTION

The purpose of this report is to assess the potential for indirect and cumulative effects (ICE) for the I-94 East-West Corridor Study as required by National Environmental Policy Act (NEPA). The report is divided into two parts: The first half describes indirect effects, and the second half describes cumulative effects.

This report is a standalone document that is a component of the I-94 East-West Corridor Environmental Impact Statement (EIS). A full description and evaluation of the project's alternatives, costs, proposed actions and environmental impacts is provided in the EIS. A summary of this document is included in the EIS.

1.1 I-94 East-West Corridor Study Background

The I-94 East-West corridor is located in central Milwaukee County, Wisconsin, and includes 3.5 miles of I-94 from 70th Street (west terminus) to 16th Street (east terminus). The termini for this study generally match the termini for two previously completed studies of the Southeastern Wisconsin freeway system: the Zoo Interchange study, located west of the I-94 East-West Corridor study area; and the Marquette Interchange study, located to the east of the study area.

The I-94 East-West freeway is one of the busiest routes in Southeastern Wisconsin. It is a vital link to downtown Milwaukee and the western suburbs, and it is part of a major east-west Interstate route serving national, regional and local traffic for trips within and through the study area.

The I-94 East-West Corridor Study area contains the following seven interchanges:

- Service interchanges along I-94:
  - 68th Street/70th Street
  - Hawley Road
  - Mitchell Boulevard
  - 35th Street
  - 25th Street/26th Street
- Service interchanges along U.S. Highway 41 (US 41) and Miller Park Way:
  - Wisconsin Avenue/Wells Street
- System interchange:
  - Stadium Interchange (I-94/US 41/Miller Park Way)

1.2 Purpose of and Need for the Project

The purpose of and need for this project are described in EIS Section 1, Purpose and Need, for the I-94 East-West Corridor Study. The purpose and need are summarized below as a reference for this ICE report.

The I-94 East-West Corridor project would accomplish the following:

- Maintain a key link in the local, state and national transportation network.
- Address obsolete design of I-94 to improve safety, which includes potentially replacing left-hand entrances and exits and providing proper weaving distances between exit and entrance ramps.
- Replace deteriorating pavement. The original pavement from the 1960s construction is still in place. Although there have been three pavement overlays, each has a shorter life span than the previous overlay.
- Accommodate future traffic volumes at an acceptable level of service.

A combination of factors, including the following, demonstrates the transportation improvement need in the I-94 East-West corridor:

- Regional land use and transportation planning
  - The Southeastern Wisconsin Regional Planning Commission's (SEWRPC's) 2003 *A Regional Freeway Reconstruction Plan for Southeastern Wisconsin* identifies the need for additional freeway traffic lanes on I-94 (SEWRPC 2003).
- System linkage and route importance
  - I-94 is a major east-west freeway link across the northern United States, connecting Detroit, Chicago, Milwaukee, Madison, St. Paul, Minneapolis and Billings, Montana.
  - I-94 is part of the National Highway System and is a designated federal and state long truck route.
  - I-94 is a designated "backbone" route in WisDOT's *Connections 2030 Long-Range Multimodal Transportation Plan* (WisDOT 2009).
  - I-94 connects Milwaukee County's eastern and western freeway systems and is an important commuter route.
  - I-94 provides a connection to several local destinations.
- High crash rates
  - Crash rates in the corridor are at least two to three times higher than the statewide average for large urban freeways, and several sections are more than four times higher than the statewide average.
  - Only two sections of the corridor have crash rates below the statewide average.
- Existing freeway conditions and deficiencies associated with:
  - This segment of I-94 was completed in 1962. Over the years, the concrete pavement has become worn and cracked. WisDOT resurfaced I-94 in the mid-1970s, late 1990s, and again in 2011–2012, which returned a smooth riding surface to the roadway but did not address the pavement cracks or voids in the gravel base under the pavement. In addition to the physical condition, there are other substandard design elements, such as inadequate ramp spacing. Perhaps the most notable existing design issue is the combination of left- and right-hand entrance and exit ramps that impact traffic flow as drivers are required to weave across several lanes, which can be unsafe.
- Existing and future traffic volumes
  - This segment of I-94 carries 143,000 to 160,500 vehicles on an average weekday.
  - By 2040, traffic volumes are expected to rise to about 160,000 to 186,000 vehicles per day, which represents a 7 percent to 14 percent traffic increase over the current conditions.

1.3 Freeway Corridor Alternatives

WisDOT and the Federal Highway Administration (FHWA) developed and evaluated a wide range of alternatives for this project (documented in EIS Section 2, Alternatives Considered). This report evaluates the four build alternatives that were retained for detailed study for the I-94 East-West Corridor and the No-build alternative (retained for comparative purposes). Each build alternative combines one of the following alternatives for each segment:

- West segment (70th Street to Yount Drive, just west of the Stadium Interchange):
  - Add a fourth lane in each direction, with either no Hawley Road interchange or a half interchange at Hawley Road (entrance/exit ramps to and from the west) and narrow lanes and shoulders through the cemetery area **(called the At-grade alternative)**
  - Add a fourth lane in each direction with full Hawley Road interchange and double deck (all up or partially down) through cemetery area **(called the Double Deck alternative)**

- East segment (Yount Drive to 16th Street):
  - Add a fourth lane in each direction, modified single-point interchange at Stadium Interchange and remaining nearly on-alignment east of 32nd Street **(called the On-alignment alternative)**[1]
  - Add a fourth lane in each direction, modified single-point interchange at Stadium Interchange with an off-alignment segment east of 32nd Street **(called the Off-alignment alternative)**

All of these alternatives are interchangeable, resulting in four possible combinations:

- At-grade (west segment) and On-alignment (east segment)
- At-grade (west segment) and Off-alignment (east segment)
- Double Deck (west segment) and On-alignment (east segment)
- Double Deck (west segment) and Off-alignment (east segment)

In the west segment (70th Street to Yount Drive, just west of the Stadium Interchange), both the At-grade alternative and the Double Deck alternative would have 8 lanes (4 in each direction). The Double Deck alternative would include interchanges at 68th Street/70th Streets and Hawley Road. The At-grade alternative would include an interchange at 68th Street/70th Streets and either no interchange at Hawley Road or a half interchange at Hawley Road. The half interchange would have an entrance ramp to westbound I-94 and an exit ramp from eastbound I-94 to Hawley Road. There would be no westbound exit ramp or eastbound entrance ramp as part of the half interchange at Hawley Road option. For both alternatives, the existing interchange at Mitchell Boulevard would be removed and replaced with a new local road interchange at the Stadium Interchange.

As part of the At-grade alternative with a half interchange at Hawley Road in the west segment, WisDOT would construct some off-interstate improvements to mitigate the traffic impacts of partially closing the Hawley Road interchange. The improvements include extending Washington Street to make it easier for drivers in the Hawley Road corridor to access the 68th Street/70th Street interchange with I-94 and improvements at three local road intersections to improve local road operations under the partial closure of the Hawley Road interchange.

In the east segment, both the On-alignment alternative and the Off-alignment alternative would have 8 lanes (4 in each direction), and both would have interchanges at the Stadium Interchange, 35th Street, at or near 27th Street, and a new local road interchange (44th/46th Streets) within the Stadium Interchange. Table 1 provides details for each alternative retained for detailed study.

Transportation System Management (TSM) measures discussed in EIS Section 2.5.2, Region-Wide TSM Elements, will be implemented as part of any of the remaining alternatives.

The No-build alternative does not include any safety improvements, capacity improvements, or pavement replacement. Only maintenance and minor improvements would be completed. While the No-build alternative does not meet the purpose of nor need for this project, it provides a baseline for comparing impacts related to the Modernization Alternatives.

[1] Although this alternative is referred to as "on-alignment," it would require right-of-way acquisition and commercial displacements on the south side of

Table 1: Modernization Alternatives Retained for Evaluation in the EIS and ICE Report

Segment	Alternative	Description
West Segment (70th Street to Yount Drive, just west of Stadium Interchange)	At-grade	• Reconstructs I-94 with 8 travel lanes (4 in each direction) at essentially the same elevation as the existing freeway. • Provides narrow driving lanes (11 feet) and narrow shoulders (minimum of 2 feet) through cemetery area (Hawley Road to Zablocki Drive). East and west of the cemeteries, the freeway would have standard 12-foot lanes and full shoulders. • Ramps at the Mitchell Boulevard interchange would be removed and replaced by a new local road interchange imbedded within the Stadium Interchange. A one-way westbound frontage road on the north side of I-94 will connect the new local road interchange to Mitchell Boulevard near the existing westbound I-94 exit ramp at Mitchell Boulevard. An underpass at Mitchell Boulevard would be provided. • Hawley Road interchange has two options. One option would remove all access and provide an underpass. The other option would provide partial access to and from the west only. • Maintains an underpass at 64th Street. • Reconstructs 68th/70th Street interchange in its current configuration as a split diamond interchange. Entrance and exit ramps would be longer than the existing ramps.
	Double Deck	• Reconstructs I-94 with 8 travel lanes (4 in each direction) and constructs a double deck (freeway lanes would be stacked with one set of freeway lanes elevated over the other) in the area between the cemeteries to avoid direct impacts. The transition back to side-by-side freeway lanes would occur at about 64th Street. • The Double Deck alternative has two options. Under the “all up” option the top level (eastbound roadway) of the freeway would be about 30 feet above the existing freeway elevation and the bottom level (westbound roadway) would be at about the same elevation as the existing freeway. Under the “partially down” option the top level (eastbound roadway) would be 22 to 24 feet above the existing freeway and the bottom level (westbound roadway) would be about 6 to 8 feet below the existing freeway elevation. • Ramps at the Mitchell Boulevard interchange would be removed and replaced by a new local road interchange imbedded within the Stadium Interchange. An underpass at Mitchell Boulevard would be provided. • Zablocki Drive would be shifted east where it would be parallel, but separate form Mitchell Boulevard. An underpass at Zablocki Drive would be provided. • Maintains entrance and exit ramps at Hawley Road interchange. • Reconstructs the 68th/70th Street split diamond interchange and Hawley Road interchange with configurations similar to existing conditions. Provides collector-distributor roads that connect the interchanges.

Segment	Alternative	Description
East Segment (Yount Drive, just west of Stadium Interchange, to 16th Street)	Off-alignment	• Reconstructs I-94 with 8 travel lanes (4 in each direction). East of 32nd Street, I-94 would be constructed several hundred feet south of its current alignment. I-94 would rejoin its existing alignment near 18th Street. • Reconstructs the Stadium Interchange as a hybrid between a service interchange and a system interchange. All of the exit ramps from I-94 to US 41/Miller Park Way would be free-flow ramps with no traffic signals. The ramps from southbound US 41 to eastbound I-94 and from northbound Miller Park Way to westbound I-94 would be controlled by a traffic signal. Also, a traffic signal would control through traffic on US 41/Miller Park Way. • Underneath the Stadium Interchange, new on- and off-ramps to 44th Street and a new local street (tentatively referred to as 46th Street) would be constructed. The ramps would replace the interchange that would be removed from Mitchell Boulevard. This interchange would connect to the existing Miller Park ring road and a new frontage road north of I-94. The new north frontage road would pass over Yount Drive and connect to Mitchell Boulevard near the existing westbound I-94 exit ramp at Mitchell Boulevard. • Reconstructs 35th Street interchange with braided ramps between the Stadium Interchange and the 35th Street interchange. • Reconstructs 27th Street interchange with braided ramps between the 35th Street and 27th Street interchanges. The 27th Street interchange would be reconstructed so that all ramps directly connect to 27th Street, a state highway.
	On-alignment	• Reconstructs I-94 with 8 travel lanes (4 in each direction). East of 32nd • Street, the freeway would remain close to its current alignment and be widened to the south. • Stadium Interchange would be the same as the off-alignment option. • The two options for the new 44th Street on- and off-ramps are the same as the off-alignment option. • Reconstructs 35th Street interchange with braided ramps between the Stadium Interchange and the 35th Street interchange. • The on- and off-ramps near 27th Street would remain where they are today at 25th, 26th and 28th Streets, and St. Paul Avenue.

After evaluating project purpose and need, cost, impacts to the human/natural environment, and public and agency comments received throughout the National Environmental Policy Act (NEPA) process and in direct response to the Draft EIS, WisDOT and FHWA identified the At-grade alternative with the half interchange at Hawley Road in the west segment and the On-alignment alternative in the east segment as the preferred alternative. See Section 2.3 of the Final EIS for additional information on the identification of the preferred alternative.

2 INDIRECT EFFECTS ANALYSIS

The Council on Environmental Quality (CEQ) defines indirect effects as project impacts "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." (40 CFR 1508.08)

The *WisDOT Guidance for Conducting an Indirect Effects Analysis* was used to guide the evaluation of indirect effects for the I-94 East-West corridor (WisDOT 2007b). The WisDOT guide is based on the methodology outlined in the National Cooperative Highway Research Program (NCHRP) Report 466, *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects* (National Cooperative Highway Research Program 2002).

The analysis used the following six-step methodology as provided in the guide:

1. Scoping, selecting activities and determining the indirect effects study area.
2. Inventory the indirect effects study area and notable features.
3. Identify the impact-causing activities of the proposed project alternatives.
4. Identify the potentially significant indirect effects.
5. Analyze the indirect effects and evaluate assumptions.
6. Assess consequences and identify mitigation activities.

The steps are summarized in the following subsections.

2.1 Step 1: Conduct Scoping, Selecting Activities, and Determine Study Area

The first step of the analysis included scoping, selecting the appropriate activities (including public involvement) to conduct the analysis and determine the indirect effects study area and timeframe for the analysis.

2.1.1 Scoping Indirect Effects

During the scoping process, the study team reviewed the project's actions, its purpose and need, and its geographic setting to prepare a preliminary list of indirect effects that could be caused by the transportation alternatives. It was determined that the transportation project has the potential to influence land use patterns because the corridor links the region's major economic centers in Milwaukee and Waukesha counties and provides local business districts that are undergoing redevelopment with access to the regional freeway system. In addition, the study team determined that the encroachment of transportation infrastructure resulting from the project has the potential to indirectly affect the quality of neighborhoods, the vitality of business areas, and the quality of natural and cultural resources adjacent to the project area.

Based on WisDOT's indirect effects guidance document, the study team determined a qualitative approach based on local and regional trend data, land use, and economic development plans, natural and historic resource inventories, and input from local and regional stakeholders would be used for the indirect effects analysis.

2.1.2 Stakeholder Input

WisDOT interviewed stakeholders early on in the analysis process (February and March 2013), meeting with local government representatives and economic development organizations to collect information and identify a preliminary indirect effects study area. Appendix A contains a summary of the meetings.

After early analysis, WisDOT conducted a focus group meeting on June 6, 2013, to obtain input on the indirect effects analysis and to finalize the study area boundary. The meeting included representatives from public and

private sectors such as local planners, regional planning commission staff, economic development organizations, representatives of large employers and real estate professionals. WisDOT sought participants' feedback on land use and development trends; indirect effects study area delineations; and potential indirect effects. Appendix B contains a summary about the focus group meeting.

WisDOT held a series of meetings in August 2013 with private-sector real estate professionals to obtain additional feedback on local and regional development trends and potential land use effects of the I-94 East-West corridor alternatives. Appendix C contains a summary of the meetings. WisDOT also met on Aug. 29, 2013, with stakeholders who represent downtown Milwaukee. The purpose of this meeting was to seek feedback about potential indirect effects to the downtown area. Appendix D contains a summary of the meeting.

Public and agency feedback that was collected as part of the overall EIS process for the I-94 East-West corridor study was also reviewed and considered in the indirect effects analysis. This includes comments from public meetings, government agency correspondence and meetings, stakeholders meetings, community and technical advisory committee meetings and elected official briefings. See EIS Section 5, Community Involvement and Agency Coordination, for information about the meetings held and comments received for the I-94 East-West corridor study.

2.1.3 Determining Indirect Effects Study Area

The study area is a defined geographic area that may experience indirect effects as a result of the proposed I-94 East-West corridor project. Limits for the analysis are extended beyond the project corridor because indirect effects can occur at some distance from the proposed project. This section defines the indirect effects study area and discusses the methodology the study team used to determine the boundaries. It also includes some of the key assumptions, data and stakeholder feedback that were used to delineate the boundaries.

2.1.3.1 Indirect Effects Study Area Boundaries

Two study areas – a primary and secondary – were evaluated for the indirect effects analysis. The primary study area, shown in Exhibit 1, includes lands within portions of Milwaukee, West Milwaukee, Wauwatosa and West Allis that are adjacent to the project corridor. The primary study area is generally bounded by Lake Michigan to the east, 84th Street to the west, North Avenue to the north and Lincoln Avenue to the south.

The primary study area is closest to the transportation project, so it identifies locations that have the greatest likelihood for indirect effects. It encompasses the local neighborhoods, business districts and natural, recreational, and historic resources that are most directly served by the freeway and its interchanges, and this area would be most susceptible to changes in access and mobility along the I-94 corridor past the transportation planning horizon of 2040. The primary study area also includes residential neighborhoods, business districts, natural resources, and historic resources that could be indirectly affected by the encroachment of infrastructure. The proposed Washington Avenue extension is located within the primary study area in the City of West Allis. The most detailed information was collected for the primary study area.

The secondary study area, shown in Exhibit 2, includes all of Milwaukee and Waukesha counties. The purpose of the secondary study area is to evaluate intraregional land use trends that may be influenced by the I-94 East-West corridor. The study team includes these two counties for the regional analysis because I-94 is a major transportation link between the region's two largest counties in terms of population and employment, and past trends show the largest redistribution of population and employment has occurred between these two counties.

2.1.3.2 Methodology for Determining Study Area Boundaries

The study team used a combination of accepted techniques for delineating the indirect effects study areas as discussed in the *WisDOT Guidance for Conducting an Indirect Effects Analysis* (WisDOT 2007b) and NCHRP's Report 466 (National Cooperative Highway Research Program 2002). The study team primarily relied on an interview/public involvement approach that involved delineating preliminary boundaries based on professional

judgment and data collection and then seeking feedback on the boundaries from stakeholders familiar with local and regional conditions. The study team also incorporated watershed and commuter boundary techniques to make sure the study areas include the full range of potential indirect effects. Developing the boundary was an iterative process that involved several modifications to the study area throughout the analysis process.

The following bullets summarize the general steps that were taken to delineate the study area boundary:

- Developed an initial primary and secondary study area based on a preliminary review of the project's components, socioeconomic trend data, and local and regional land use plans.
- Sought feedback on the indirect effects study areas by conducting stakeholder meetings with government representatives and economic development organizations (see Appendix A for meeting notes).
- Modified the study areas based on more extensive trend research and identification of notable features. This included a review of commuting patterns and watershed boundaries (see Section 2.2, Step 2: Inventory the Study Area and Notable Features).
- Revisited assumptions for the primary and secondary study areas and modified the areas based on evaluation of indirect effects (see Section 2.4 for evaluation of effects).
- Obtained input on the study area boundaries at the June 6, 2013, focus group meeting and made modifications based on focus group feedback (see Appendix B for a focus group meeting summary).
- Sought additional feedback on the study area boundaries and potential effects based additional stakeholder input from downtown stakeholders and local real estate professionals (see Appendix C and Appendix D).
- Finalized and reaffirmed the boundaries based on additional analysis of indirect effects and updates to the project alternatives.

Exhibit 1: Indirect Effects Primary Study Area

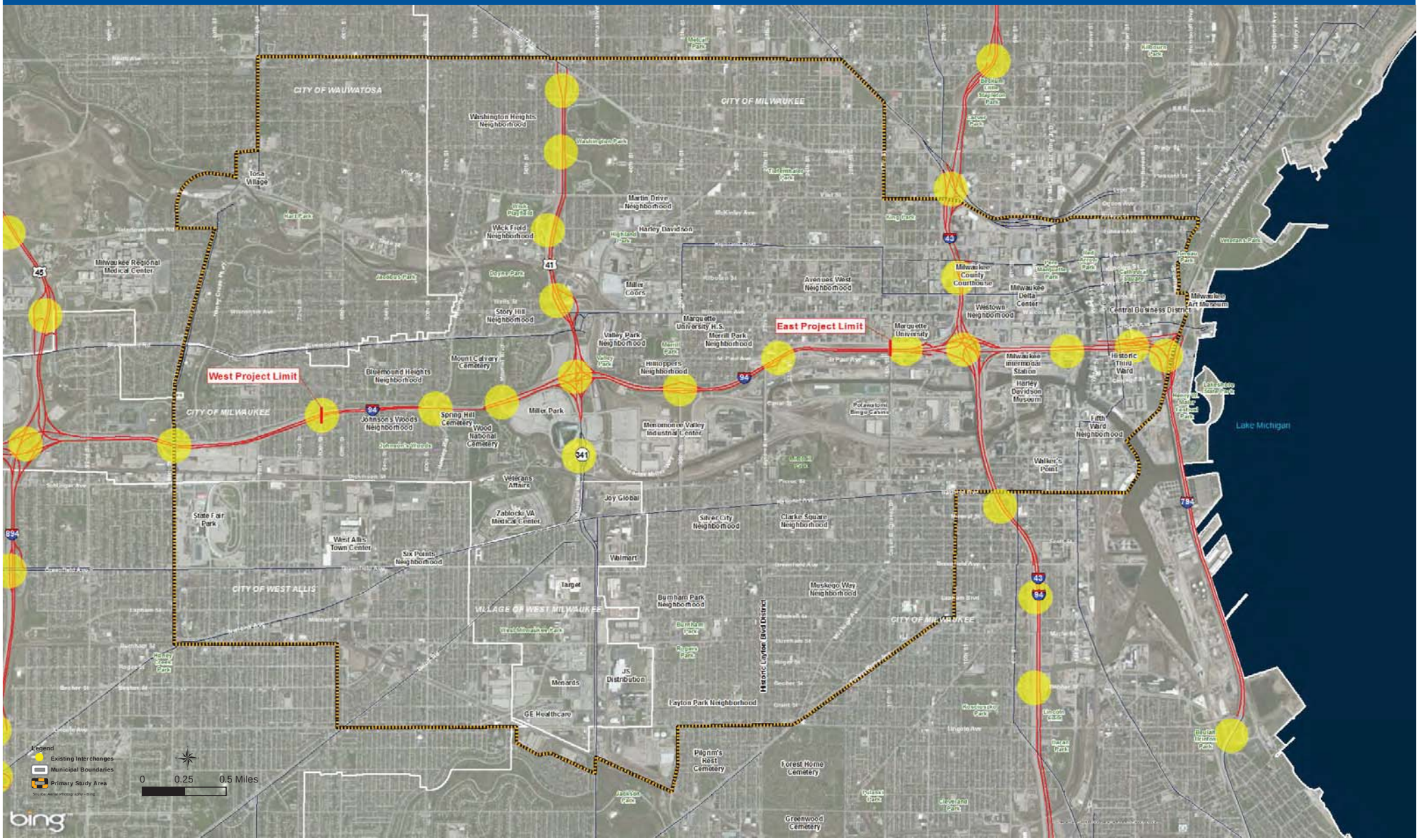
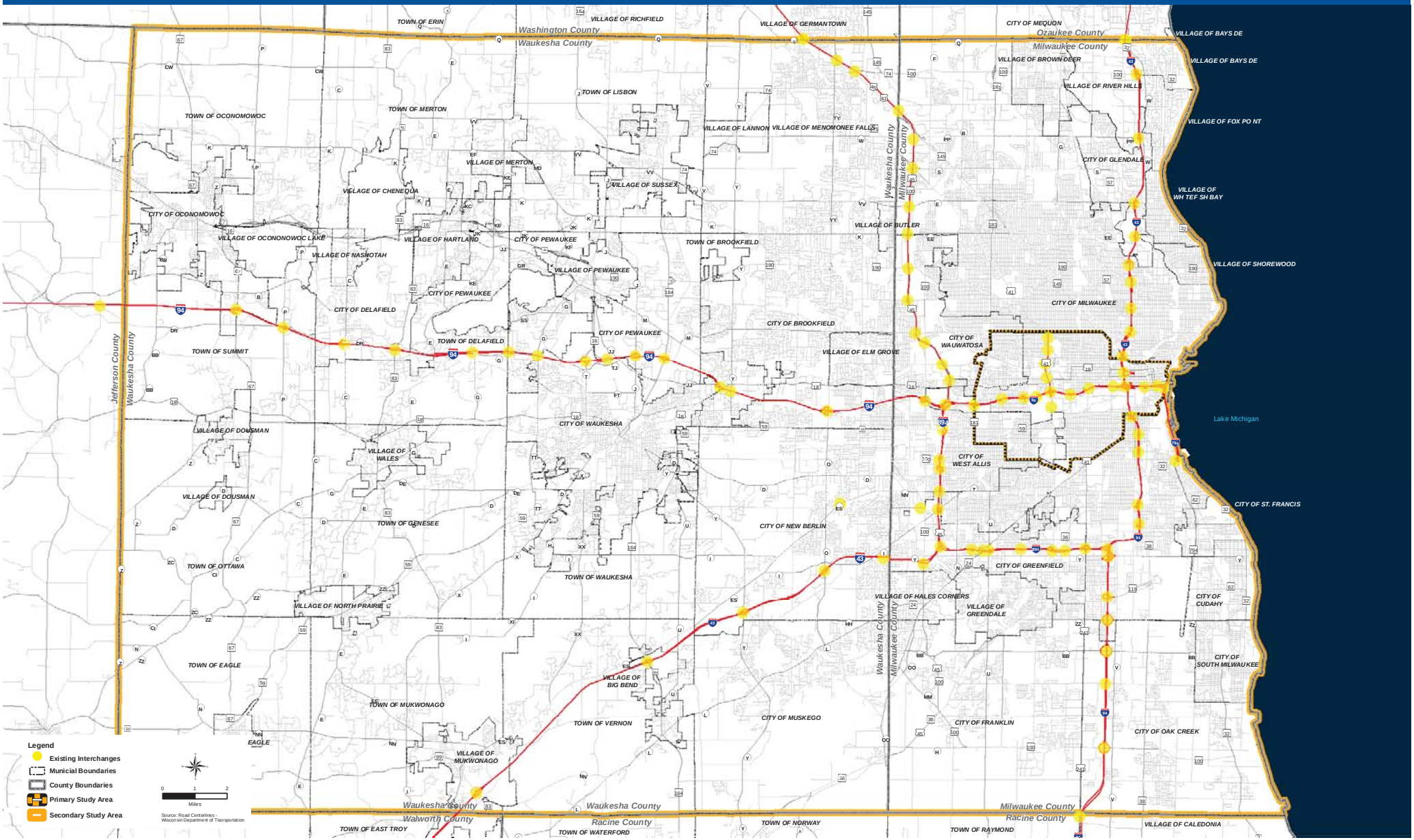


Exhibit 2: Indirect Effects Secondary Study Area



2.1.3.3 Study Area Delineations: Decisions/Assumptions

The study team considered a range of factors to delineate the indirect effects study areas. The first factor was the proposed project's actions and its ability to increase mobility and accessibility, which research has shown can affect land use and economic patterns over time by making land more desirable for residential, recreational and employment uses (Strategic Highway Research Program 2012). The I-94 East-West corridor project would improve mobility and travel time reliability by adding a new travel lane in each direction. Also, it would make modifications to existing interchange access points along the corridor (see Section 2.3 for more information about the project's impact causing activities). These effects could have both local and regional implications, and as a result, the study team determined primary and secondary study areas as described above would be evaluated for the indirect effects analysis.

The following subsections summarize additional key pieces of information that led to decisions about the selection of the boundaries for the primary and secondary study areas.

Primary Study Area Boundaries

As discussed previously, the primary study area identifies the local neighborhoods, business districts, and natural, historic and recreational resources that are served most directly by the freeway and its interchanges, and it is the area that would be most susceptible to changes in access and mobility along the I-94 corridor. As discussed previously, the primary study area boundaries were determined based on study area research and input from local stakeholders.

The following paragraphs describe some of the key assumptions used to delineate the western, eastern, northern and southern boundaries of the primary study area.

Western Boundary

The western boundary of the primary study area is roughly 84th Street. This line essentially delineates the areas that would be mostly influenced by the Zoo Interchange reconstruction project and the areas primarily influenced by the I-94 East-West corridor project. Development to the west of 84th Street such as the Milwaukee Regional Medical Center and Milwaukee County Research Park in Wauwatosa, and the Highway 100 commercial corridor in West Allis, are more susceptible to land use effects resulting from access modifications for the Zoo Interchange reconstruction and were not included the primary study area.

Eastern Boundary

The eastern boundary of the primary study area incorporates downtown Milwaukee and extends to Lake Michigan. Downtown was included in the primary study area because of its dense concentration of jobs and its many regional recreational, entertainment and cultural destinations. Because downtown borders the lakefront, no additional lands beyond downtown could be included.

Northern Boundary

The northern boundary of the primary study area is roughly North Avenue. It includes the neighborhoods and business districts that are most closely linked to the I-94 East-West corridor via north-south arterials (such as US 41, Hawley Road and 68th Street) and are undergoing concerted redevelopment and revitalization efforts. Examples include the State Street corridor in Wauwatosa; Miller Valley; a portion of the 30th Street Industrial Corridor; Avenues West; and various commercial corridors along Vliet Street and North Avenue.

Areas north of North Avenue were excluded from the primary study area because arterial street connections to I-94 beyond North Avenue become more circuitous, and therefore land use and development patterns north of North Avenue are less influenced by I-94 and are linked more to neighborhood-level conditions and other arterial connections to the regional freeway system.

Southern Boundary

The southern boundary of the primary study area is roughly Lincoln Avenue. It incorporates the neighborhoods and business districts that are most closely linked to the I-94 East-West corridor and that are undergoing concerted redevelopment and revitalization efforts. Examples include the Layton Boulevard West, Clarke Square and Muskego Way neighborhoods; commercial/industrial areas along Miller Park Way in West Milwaukee; and business districts in West Allis.

An extensive residential area is located south of the primary study area and west of 27th Street. This area was not included because the neighborhoods are considered stable middle-class neighborhoods that are not susceptible to change within the study's timeframe. Residential and commercial areas to the east of 27th Street and south of the primary study area boundary were not included because of their proximities and stronger relationships with the I-94 North-South corridor. The largest business district south of the primary study area is along the 27th Street corridor between approximately Cleveland Avenue and I-894. This area was not included because its land use and development is more closely linked to the I-894 and I-94 North-South corridors.

Secondary Study Area Boundaries

The study team recognized that the I-94 East-West corridor is an important transportation corridor within the region that many travelers utilize for work trip; access to goods and services; visits to recreational, entertainment or cultural destinations; or business shipment deliveries. As a result, the I-94 project could benefit mobility throughout the region. For example, freight users would benefit from less travel delay along this corridor and improve on-time deliveries. The region's labor force would more easily access the region's employment centers, and employers could be able to draw from a larger pool of workers. However, research has shown that isolating economic impacts from transportation projects within large, growing metropolitan areas is difficult, as these impacts become more dispersed and obscured by other economic influences further removed from the transportation investment (Strategic Highway Research Program 2012). As a result, the study team determined that the regional analysis must be narrowed to identify the most significant, indirect land use effects.

To help determine the extent of the secondary study area, the study team evaluated socioeconomic and land use information for the seven-county Southeastern Wisconsin region. Table 2 shows some of the key pieces of data that were used to make the secondary study area determination. Because historic data trends show that population and employment have been decentralizing for several decades from the urban core in Milwaukee County, the data identified in Table 2 is from the Milwaukee County perspective. It shows the following data sets:

- The number of workers who work in Milwaukee County from other counties in the region.
- The average weekday person trips to Milwaukee County from the other counties in the region.
- The net population migration from Milwaukee County to other counties in the region.

The data in Table 2 shows that while Ozaukee, Washington and Racine counties exhibit some influence on Milwaukee County, it is Waukesha County that exhibits the largest influence on Milwaukee County. Of the workers from other counties that are employed in Milwaukee County, the majority (57 percent) are from Waukesha County. Of the average weekday person trips that are coming into Milwaukee County from other counties in the region, 62 percent are from Waukesha County. Furthermore, the most significant net population migration losses from Milwaukee County have been to Waukesha County, accounting for a net loss of over 30,000 people between 2000 and 2010.

Table 2: Regional Workplace, Travel Pattern and Net Migration Trends

County	Work in Milwaukee County (2010)		Average weekday persons trips to Milwaukee County (2001)		Net Population Migration from Milwaukee County (2000 to 2010)	
	Number	Percent	Number	Percent	Number	Percent
Waukesha	61,602	57	239,700	62	-30,340	-58
Ozaukee	14,515	13	55,800	14	-7,230	-14
Washington	14,123	13	38,100	10	-9,250	-18
Racine	15,196	14	45,900	12	-5,400	-10
Kenosha	3,256	3	9,000	2	710	1
Walworth	2,761	3	7,700	2	-640	-1
Total	**108,692**	**100**	**388,500**	**100**	**52,150**	**100**

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2006-2010.
Note: Data does not include geographic areas outside the seven-county Southeastern Wisconsin region.
Note: Kenosha County was the only county in the region that experienced a net population loss to Milwaukee County.

Table 3 shows the projected population and employment growth for the seven counties in the region. SEWRPC projections show Waukesha County would not necessarily be the fastest growing county in the region, but in terms of actual numbers it would experience the largest gains in population and employment, and it would receive the largest percentage of the region's anticipated population and employment growth. SEWRPC projects Waukesha County's population will increase by 74,500 between 2010 and 2040, capturing 28 percent of the region's projected population growth (265,800). SEWRPC projects Waukesha County's employment levels will increase by 69,500 jobs between 2010 and 2050, capturing 33 percent of the region's projected employment growth (210,300).

Table 3: Projected Population and Employment Growth in the Region

County	Population Growth (2010 to 2040)			Employment Growth (2010 to 2050)		
	Difference	Percent Increase	Percent of Regional Growth	Difference	Percent Increase	Percent of Regional Growth
Milwaukee	25,500	3	10	33,500	6	16
Waukesha	74,500	19	28	69,500	26	33
Ozaukee	18,300	21	7	16,800	32	8
Washington	38,400	29	14	23,500	37	11
Racine	25,500	13	10	24,000	27	11
Kenosha	54,300	33	20	26,400	35	13
Walworth	29,300	29	11	16,600	32	8
Total Region	**265,800**	**13**	**100**	**210,300**	**18**	**100**

Source: SEWRPC. The Population of Southeastern Wisconsin. Technical Report No. 11 (5th Edition). 2013.
Source: SEWRPC. The Economy of Southeastern Wisconsin. Technical Report No. 10 (5th Edition). 2013.

Based on this information, the study team determined the secondary study area should evaluate Milwaukee and Waukesha counties because they comprise the area within the region that has the greatest potential for intraregional land use shifts in development within the analysis timeframe. The selection of Waukesha and Milwaukee counties for the secondary study area is also consistent with stakeholder feedback. Public outreach for this study found some stakeholders were concerned that adding new travel lanes to the freeway could facilitate development in Waukesha County by reducing commute times to downtown Milwaukee. The likelihood and magnitude of this potential effect is evaluated and considered in more detail in Section 2.4.3 of this report.

2.1.4 Analysis Timeframe

One of the goals of scoping is to determine a timeframe for the analysis. This is important because research has shown that land use and economic impacts related to transportation projects can occur over time, and those different impacts can appear at different times (Strategic Highway Research Program 2012). According to NCHRP Report 466, the timeframe for an indirect effects analysis should be short enough in duration to anticipate reasonably foreseeable events, but also long enough to capture changes that may occur over several business cycles (National Cooperative Highway Research Program 2002). Report 466 states that most indirect effects assessments set a time horizon equal to the typical transportation planning horizon of about 20 to 25 years. This timeframe typically is consistent with the planning horizons used for regional land use and transportation planning purposes.

Based on the guidance and preliminary information collected during the scoping process, the study team determined the timeframe for the indirect effects analysis is 2040, about 20 years after the implementation of the proposed I-94 East-West corridor project. This is long enough for indirect effects to unfold but it would not be so far into the future that the effects become too difficult for the study team to reasonably anticipate, or for local and regional stakeholders to provide meaningful feedback.

Also, the study team determined sufficient data and plans are available to assess anticipated conditions in 2040. The current regional land use and transportation plan time horizons are 2035, which leaves about a five-year gap. However, other resources are available to assess trends beyond the 2035 timeframe. The relevant 2035 regional documents and plans include the following:

- SEWRPC – A Regional Transportation System Plan for Southeastern Wisconsin: 2035
- SEWRPC – A Regional Land Use Plan for Southeastern Wisconsin: 2035
- SEWRPC – A Regional Housing Plan for Southeastern Wisconsin: 2035

Trend data and plans available beyond the 2035 timeframe:

- SEWRPC – The Population of Southeastern Wisconsin (provides population and household in five year increments by county through 2050.)
- SEWRPC – The Economy of Southeastern Wisconsin (provides employment and labor force projections by county for 2050.)
- Wisconsin Department of Administration (WDOA) – Population and household projections: 2010 – 2040 (provides population and household projections by county and municipality in five year increments through 2040).

2.2 Step 2: Inventory the Study Area and Notable Features

The purpose of Step 2 is to collect data and information to understand the general trends and goals associated with social, economic, natural and historic resources within the study areas. Documenting this information is important because research shows that transportation investments result in land use changes only in the presence of other supportive non-transportation factors such as local government development policies and

incentives; availability of infrastructure; the amount of developable land; and the overall economic conditions of an area (Strategic Highway Research Program 2012).

This section contains the following data and information for the primary and secondary study areas: Socioeconomic data and trends; Existing land use patterns; Development trends and planned land use; and Notable natural and historic resources.

2.2.1 Socioeconomic Data and Trends

This section reviews the following socioeconomic data sets for the primary and secondary study areas: population, employment, racial composition, persons in poverty, county-to-county worker flows, means of transportation to work and vehicles available.

The socioeconomic data for the primary study area was obtained by compiling the census tracts that are within or intersect with the primary study area boundary. If census tract data was not available for a particular topic, then the next largest unit of geography was used and specified within the relevant subsection. The data tables for the secondary study area were collected on a countywide basis. The secondary study area exhibits show information for the Milwaukee and Waukesha counties by census tract.

2.2.1.1 Population

This section provides an overview of past and projected population trends for the primary and secondary study areas.

Primary Study Area Population

Past Population

Table 4 shows the population between 2000 and 2010 in the primary study area census tracts (U.S. Census Bureau 2014). The primary study area had a total population of 175,932 in 2010, which was an increase of 887 people since 2000. The populations for the Milwaukee, West Allis and West Milwaukee portions of the primary study area increased slightly by 452, 504 and 56 people, respectively. The population of the Wauwatosa portion of the primary study area declined by 125 people.

Table 4: Primary Study Area Population – 2000 to 2010

Location	2000	2010	Absolute Change	Percent Change
City of Milwaukee	134,590	135,042	452	0.3
City of West Allis	17,363	17,867	504	2.9
Village of West Milwaukee	4,249	4,305	56	1.3
City of Wauwatosa	18,843	18,718	-125	-0.7
Primary Study Area Total	**175,045**	**175,932**	**887**	**0.5**

Source: U.S Census Bureau, 2000 and 2010 Census of Population. Census Tracts

Exhibit 3 shows a map of the population change between the 2000 and 2010 by census tracts in the primary study area. The fastest rate of growth occurred in downtown Milwaukee, and the Third Ward and Fifth Ward neighborhoods. The west side of downtown and the Avenues West and Near South Side neighborhoods in the City of Milwaukee also had population increases. Population increases in West Allis occurred in the Six Points neighborhood and adjacent to Wisconsin State Fair Park. The overall population of the Wauwatosa portion of the primary study area declined slightly, but the Wauwatosa Village area along State Street had population increases. The most significant population declines occurred in the City of Milwaukee neighborhoods north of I-94; east of the Stadium Interchange; and west of I-43 in the Merrill Park and Valley Park neighborhoods.

Exhibit 3: Primary Study Area Population Change - 2000 to 2010

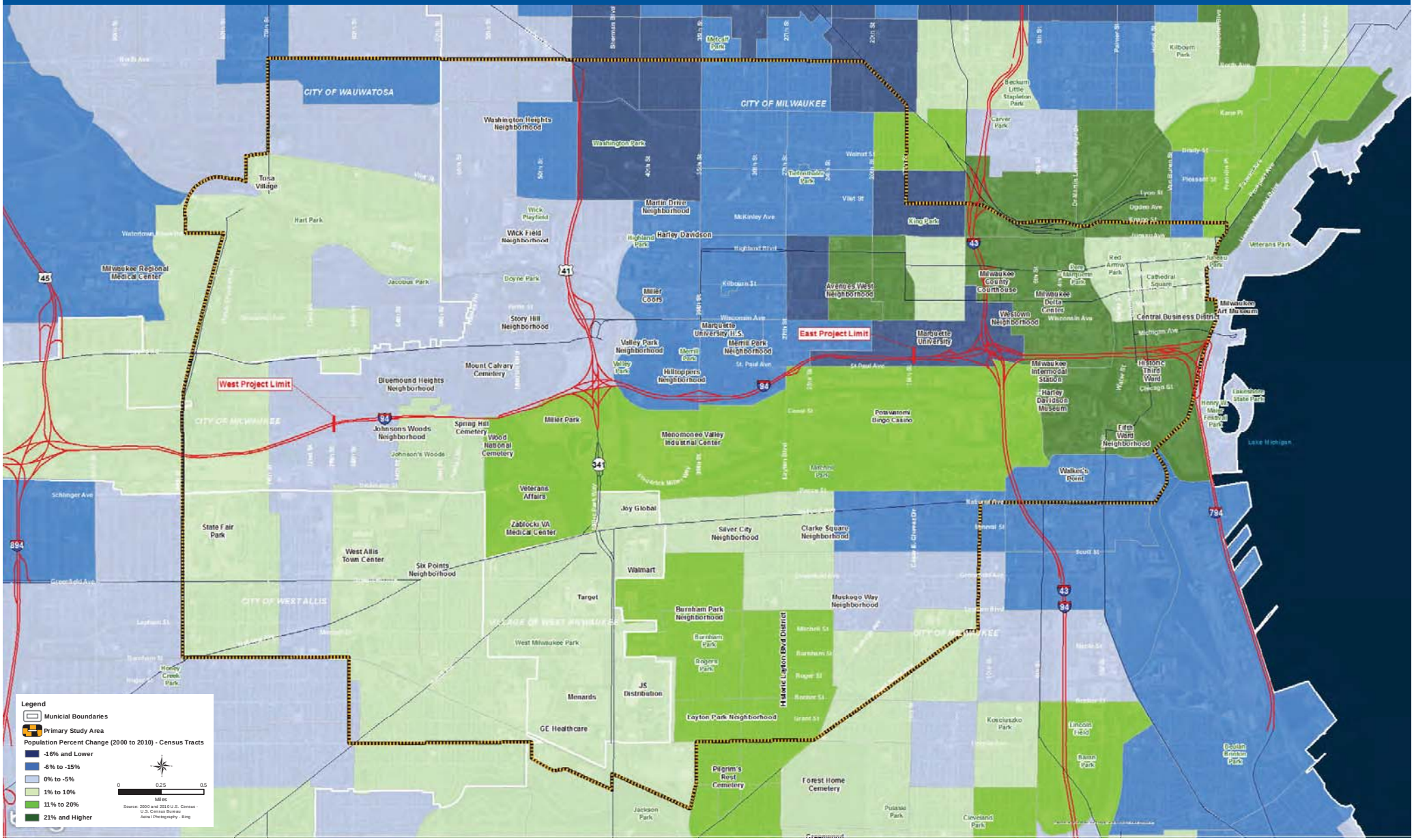
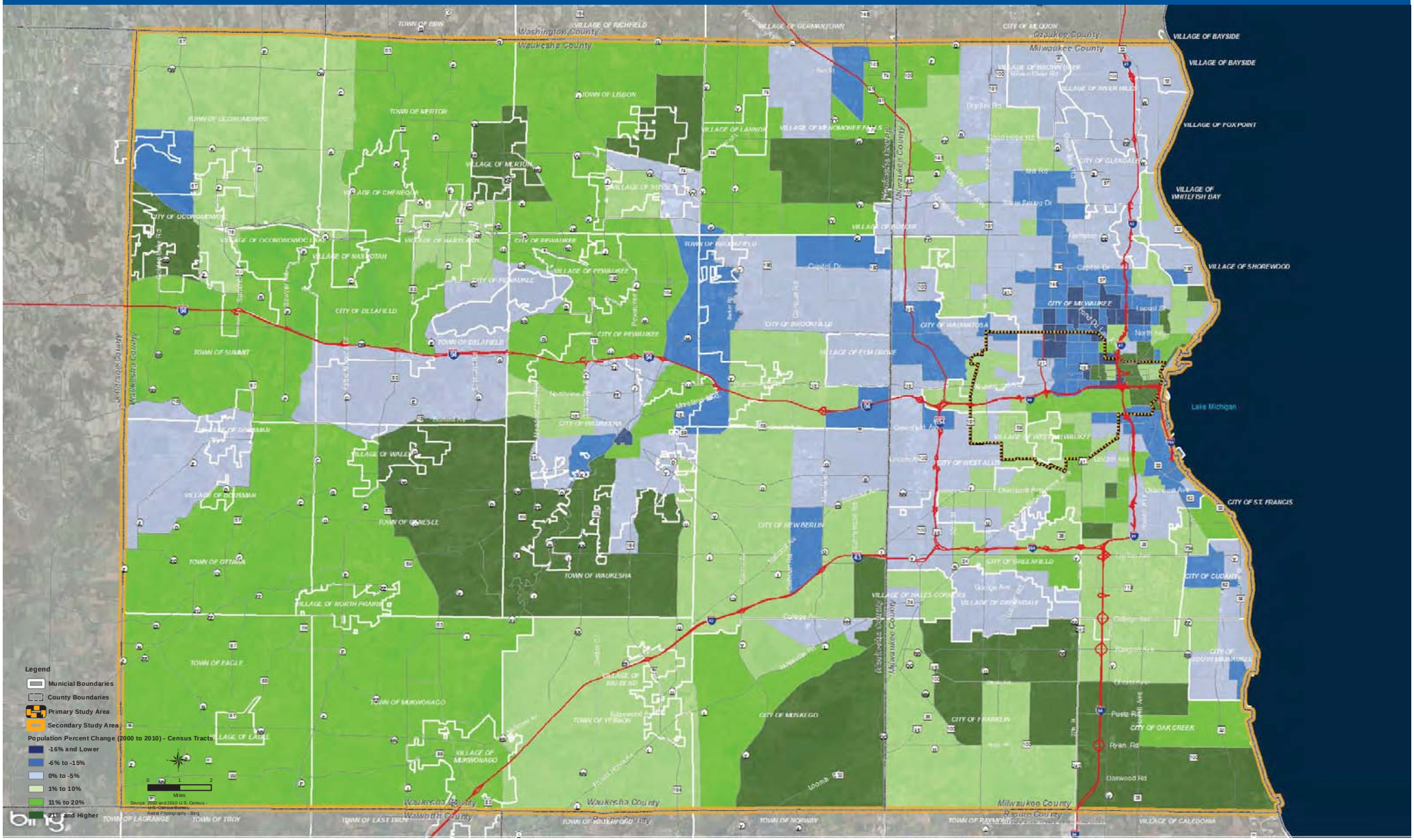


Exhibit 4: Secondary Study Area Population Change - 2000 to 2010



Projected Population

Population projections are not available at a census tract level, so population projections for the entire primary study area communities were collected to gauge future population levels for the primary study area. The population projections presented in Table 5 show the study area communities are expected to collectively experience a small increase in population between 2010 and 2040 (WDOA 2013).

Table 5: Corridor Community Population Projections – 2010 to 2040

Location	2010 Census	2040 Projection	Absolute Change	Percent Change
City of Milwaukee	594,833	627,400	32,567	5.5
City of West Allis	60,411	61,850	1,439	2.4
Village of West Milwaukee	4,206	4,580	374	8.9
City of Wauwatosa	46,396	49,270	2,874	6.2

Source: Municipal Population Projections, 2010-2040. WDOA, Division of Intergovernmental Relations, Demographic Services Center. 2013.

The study team reviewed the comprehensive plans for the communities within the primary study area to identify another set of population projections. The summarized findings are as follows:

- City of Milwaukee: 622,738 by 2025 (City of Milwaukee 2010a)
- City of West Allis: 67,290 by 2030 (City of West Allis 2011)
- Village of West Milwaukee: 4,991 by 2025 (Village of West Milwaukee 2009)
- City of Wauwatosa: 54,039 by 2030 (City of Wauwatosa 2008)

Secondary Study Area Population

Past Population

Milwaukee and Waukesha counties are located within the Southeastern Wisconsin region that includes Milwaukee, Waukesha, Racine, Kenosha, Ozaukee, Washington and Walworth counties. In 2010, the region had a population of 2,019,970, which was a 4.6 percent increase since 2000 (SEWRPC 2013c). Milwaukee County is the most populous county in the region, containing 947,735 people in 2010. Waukesha County has the second largest population in the region with 389,891 people in 2010. The two counties combined contained 66 percent of the region's population in 2010 (SEWRPC 2013c).

Table 6 shows the historic population trends for the two counties (SEWRPC 2013c). Milwaukee County's population peaked in 1970 at over 1 million people. The most significant population loss (-89,261) occurred in Milwaukee County between 1970 and 1980. Milwaukee County continued to lose population during the 1980s and 1990s, but at a slower pace compared with the 1970s. The population decline reversed between 2000 and 2010, when Milwaukee County added 7,571 people.

Waukesha County more than doubled its population between 1960 and 2010. The rapid growth of the county is evident going back to the 1950s. Between 1950 and 1960 the county added over 72,000 people and between 1960 and 1970 the county again added over 73,000. The county also experienced fairly rapid growth during the 1970s and 1990s, but had more moderated growth during the 1980s and 2000s.

According to SEWRPC, the largest historic shift of population within the region has occurred between Milwaukee and Waukesha counties (SEWRPC 2013c). In 1960, Milwaukee County contained 65.8 percent of the region's population, and in 2010 it contained 46.9 percent. Waukesha County's percentage of the regional population increased during the same timeframe from 10.1 percent to 19.3 percent.

Table 6: Past Population for Milwaukee and Waukesha Counties – 1960 to 2010

	Milwaukee County				Waukesha County			
		Change from Previous Decade		Percent of Region Total		Change from Previous Decade		Percent of Region Total
Year	Number	Absolute Number	Percent Change		Number	Absolute Number	Percent Change	
1960	1,036,041	164,994	18.9	65.8	158,249	72,348	84.2	10.1
1970	1,054,249	18,208	1.8	60.0	231,335	73,086	46.2	13.2
1980	964,988	-89,261	-8.5	54.7	280,203	48,868	21.1	15.9
1990	959,275	-5,713	-0.6	53.0	304,715	24,512	8.7	16.8
2000	940,164	-19,111	-2.0	48.7	360,767	56,052	18.4	18.7
2010	947,735	7,571	0.8	46.9	389,891	29,124	8.1	19.3

Source: SEWRPC. The Population of Southeastern Wisconsin. Technical Report No. 11 (5th Edition). 2013.

Exhibit 4 shows the population percent change between 2000 and 2010 by census tracts for Milwaukee and Waukesha counties. The greatest percent increases in Milwaukee County occurred in Oak Creek and Franklin, in Milwaukee's downtown neighborhoods, and in some of Milwaukee's south side neighborhoods. The largest population percent increases in Waukesha County typically occurred in areas where land is still available for development such as Pewaukee, Delafield, Muskego and Oconomowoc and in several of the townships. Slight population declines typically occurred in the existing urbanized areas of the county including Brookfield, Elm Grove, portions of New Berlin and portions of the City of Waukesha.

Projected Population

Table 7 shows SEWRPC's population projections for Milwaukee County, Waukesha County and the region (SEWRPC 2013c). The region's population is expected to increase by 334,000, or 16.5 percent, between 2010 and 2050. The projected rate of growth is only slightly higher than the previous 40-year period (1970 to 2010) when the region increased its population by 15 percent.

As shown in Table 7, Milwaukee County is expected to add 28,969 persons between 2010 and 2050, which is a 3.1 percent increase. This is a change from the previous 40-year period (1970 to 2010), when Milwaukee County lost 10.1 percent of its population.

Waukesha County is expected to add 91,478 persons by 2050, which is a 23.5 percent increase. This rate of growth is robust, but it is substantially slower in comparison to the previous 40-year period (1970 to 2010), when Waukesha County's population increased by 68.5 percent.

Table 7: SEWRPC Population Projections – Milwaukee and Waukesha Counties – 2050

Area	2010	2050	Absolute Change	Percent Change	Percent of Region (2010)	Percent of Region (2050)
Milwaukee County	947,735	976,704	28,969	3.1	46.9	41.5
Waukesha County	389,891	481,369	91,478	23.5	19.3	20.4
Region	2,019,970	2,354,000	334,000	16.5	100.0	100.0

Source: SEWRPC. The Population of Southeastern Wisconsin Preliminary Draft. Technical Report No. 11 (5th Edition). 2013.

Between 2010 and 2050, Milwaukee County is expected to continue to decrease its share of the regional population, changing from 46.9 percent in 2010 to 41.5 percent in 2050, which is a decrease of 5.4 percentage points (SEWRPC 2013c). This difference is much less compared with the previous 40-year period (1970 to 2010), when Milwaukee County's regional population share decreased by 13.1 percentage points. Waukesha County is expected to continue to increase its regional population share from 19.3 percent in 2010 to 20.4 percent in 2050. The percentage point change between 2010 and 2050, which is expected to be 1.1, is less than the 6.6 percentage point change that occurred during the previous 40-year period (1970 to 2010) for Waukesha County population.

Table 8 shows the population projections developed by W DOA for 2040 for Milwaukee County, Waukesha County and the region (WDOA 2013). The WDOA projects the region's population to increase by 12.7 percent between 2010 and 2040. Waukesha County's population growth (16.9 percent) is expected to increase at a faster pace than the region during this timeframe. Milwaukee County's rate of growth (7.2 percent) between 2010 and 2040 is expected to be slower than the region, but its absolute population gains of 68,515 are slightly more than Waukesha County's projected population gains of 65,829.

Table 8: WDOA Population Projections – Milwaukee and Waukesha Counties –2040

Area	2010	2040	Absolute Change	Percent Change
Milwaukee County	947,735	1,016,250	68,515	7.2
Waukesha County	389,891	455,720	65,829	16.9
Region	2,019,970	2,277,340	257,370	12.7

Source: MCD and Municipal Population Projections, 2010-2040, Final Release, WDOA, Division of Intergovernmental Relations, Demographic Services Center

2.2.1.2 Employment

This section provides an overview of past and projected employment trends for the primary and secondary study areas.

Primary Study Area Employment

Past Employment

Table 9 shows the employment levels for the primary study area census tracts, comparing the 2000 census and 2006-2010 American Community Survey (ACS) reporting periods from the Census Transportation Planning Products (CTPP) files (AASHTO 2014). The data shows that while the City of Milwaukee portion of the primary study area contained the largest number of jobs (112,190) in 2006-2010, the most job growth occurred in the City of West Allis and Village of West Milwaukee portions of the primary study area. Employment levels in the primary study area portion of Wauwatosa remained nearly unchanged during this timeframe.

Table 9: Primary Study Area Employment – 2000 and 2010

Location	Primary Study Area			
	2000	2006-2010	Absolute Change	Percent Change
City of Milwaukee	121,089	112,190	-8,899	-7.3
City of West Allis	9,320	10,835	1,515	16.3
Village of West Milwaukee	4,460	5,765	1,305	29.3
City of Wauwatosa	8,875	8,895	20	0.2
Primary Study Area Total	**143,744**	**137,685**	**-6,059**	**-4.2**

Source: Census Transportation Planning Products (CTPP), American Association of State Highway and Transportation Officials (AASHTO).

Exhibit 5 shows the 2010 employment levels by census tract for the primary study area. The largest concentration of jobs in the primary study area is located in downtown Milwaukee. The next largest concentration of jobs is located in the Menomonee Valley. Other job concentrations are located in the Miller Valley and Harley-Davidson area; the West Allis Town Center; the Miller Park Way corridor in West Milwaukee; Walker's Point near downtown; and the area near Marquette University to the west of I-43. The State Street corridor in Wauwatosa shows a large concentration of jobs, but this is because the census tract captures a portion of the medical facilities associated with the Milwaukee Regional Medical Center.

Exhibit 5: Primary Study Area Employment - 2010

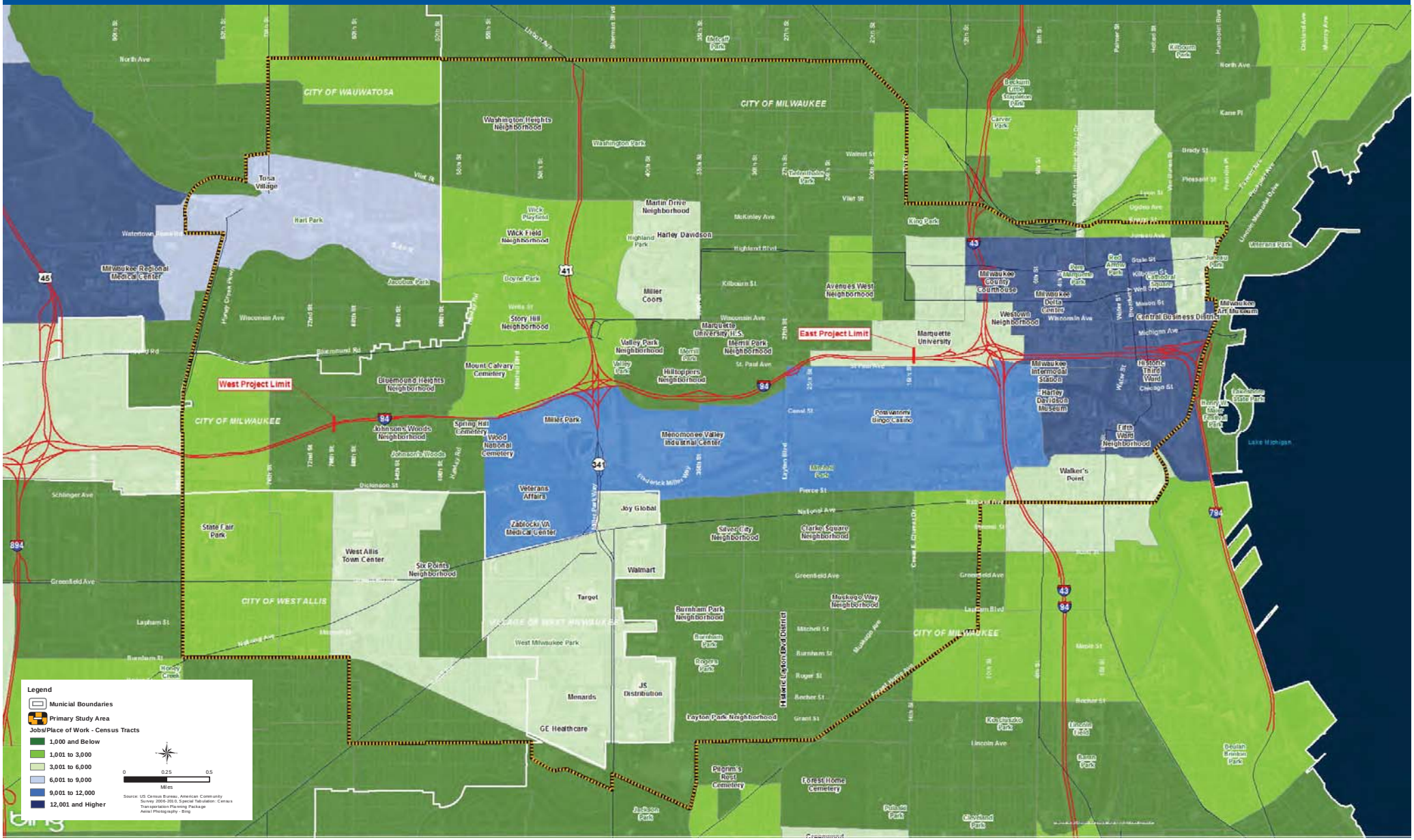
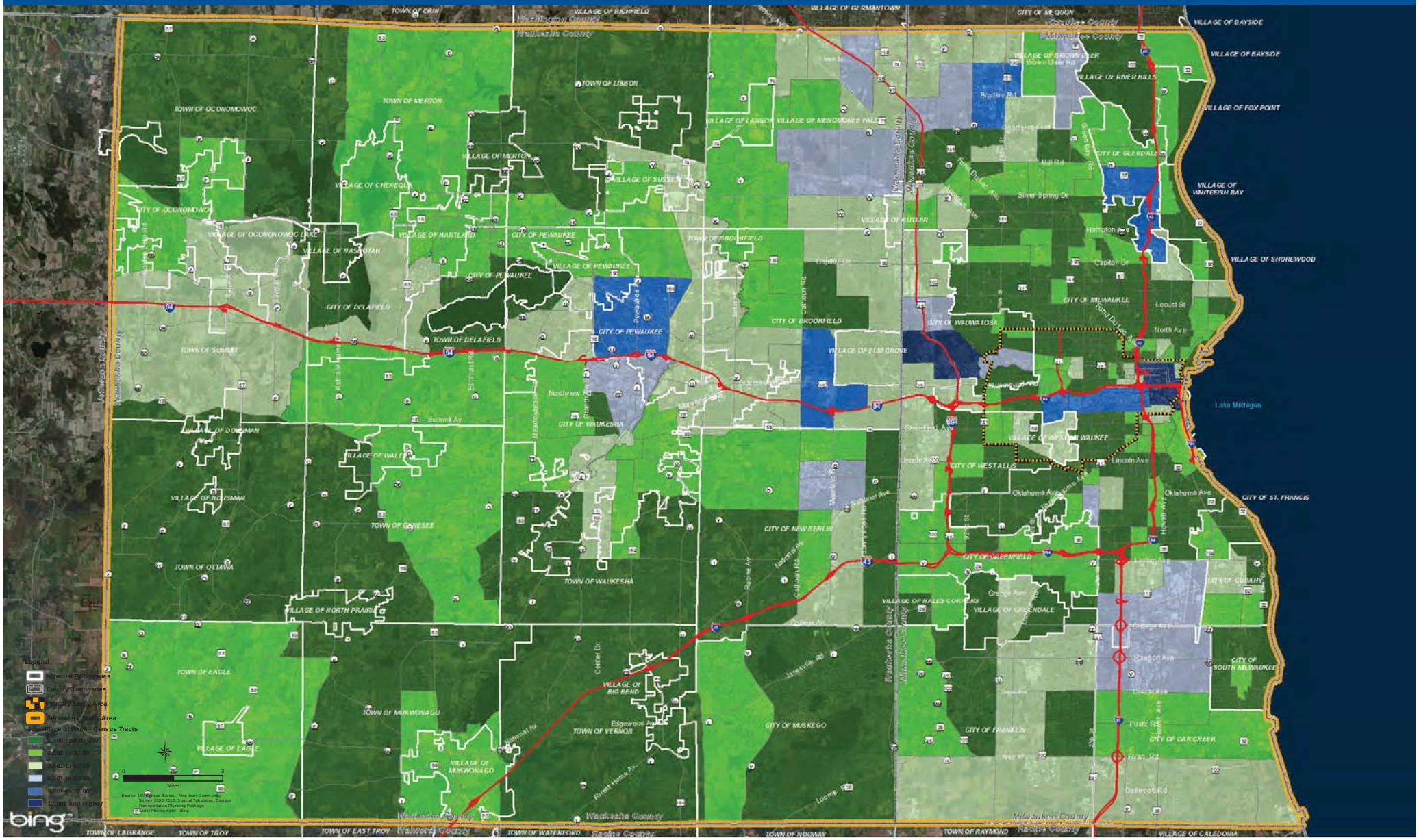


Exhibit 6: Secondary Study Area Employment - 2010



Projected Employment

SEWRPC does not provide employment projections at a census tract or municipal government level. See the next subsection for county-level employment projections.

Secondary Study Area Employment

Past Employment

The Southeastern Wisconsin region contained 1,176,600 jobs in 2010. Between 2000 and 2010, the region's employment levels declined 2.7 percent as a result of the national economic recession that occurred in the late 2000s. According to SEWRPC, before the 2000s, the region had experienced a substantial net increase in jobs each decade going back to at least the 1950s. The region gained 155,800 jobs during the 1990s; 108,100 during the 1980s; 161,000 during the 1970s; 111,900 during the 1960s; and 99,500 during the 1950s (SEWRPC 2013d).

Milwaukee and Waukesha counties contain the largest numbers of jobs in the region. In 2010, Milwaukee County had over 575,000 jobs, and Waukesha County had nearly 269,000 jobs. The two counties combined contain 72 percent of the region's employment (SEWRPC 2013d). Exhibit 6 shows the distribution of employment throughout Milwaukee and Waukesha counties. It shows the largest concentrations of jobs generally are located along the freeway corridors in the two counties. Downtown Milwaukee and the Milwaukee Regional Medical Center/Milwaukee County Research Park contain the largest concentration of jobs within the two counties. The next largest concentration of jobs is located in the Menomonee Valley, Glendale, Bradley Road/76th Street area, Brookfield Square shopping mall area and along Pewaukee Road in the City of Pewaukee. Other substantial job concentrations are located at General Mitchell International Airport; near Mayfair Mall; in Milwaukee's northwest side; in Menomonee Falls near Silver Spring Drive; at the New Berlin Industrial Park; and in the City of Waukesha south of I-94.

Table 10 shows the historic employment levels for Milwaukee and Waukesha counties. Within the region, Milwaukee County was the hardest hit by the economic recession of the late 2000s, and it lost 42,900 jobs during the 2000s. The rate of growth of Milwaukee County's employment levels before the 2000s could be characterized as slow but steady. Waukesha County's employment increased quite rapidly after 1960, when the county had only 32,600 jobs. During the 1960s, 1970s, 1980s and 1990s, the county's employment increased by 48,400, 51,500, 55,600 and 79,800 jobs, respectively. Between 2000 and 2010, Waukesha County's employment had only a slight net increase of 1,000 jobs as a result of the economic recession of the late 2000s.

Table 10: Past Employment for Milwaukee and Waukesha Counties – 1960 to 2010

	Milwaukee County				Waukesha County			
		Change from Previous Decade		Percent		Change from Previous Decade		Percent
Year	Number	Absolute Number	Percent Change	of Region Total	Number	Absolute Number	Percent Change	of Region Total
1960	503,300	49,800	11.0	74.8	32,600	16,200	98.8	4.8
1970	525,200	21,900	4.4	66.9	81,000	48,400	148.5	10.3
1980	581,700	56,500	10.8	61.5	132,500	51,500	63.6	14.0
1990	604,700	23,000	4.0	57.4	188,100	55,600	42.0	17.9
2000	618,300	13,600	2.2	51.1	267,900	79,800	42.4	22.1
2010	575,400	-42,900	-6.9	48.9	268,900	1,000	0.4	22.8

Source: SEWRPC. The Economy of Southeastern Wisconsin. Technical Report No. 10 (5th Edition). 2013.

According to SEWRPC, the largest historic shift of employment within the region has occurred between Milwaukee and Waukesha counties. Milwaukee County contained 74.8 percent of the region's total employment in 1960 and 48.9 percent in 2010. Waukesha County's percent of regional employment changed from 4.8 percent to 22.8 percent between 1960 and 2010.

Projected Employment

Table 11 shows the SEWRPC 2050 employment projections for Milwaukee County, Waukesha County and the region (SEWRPC 2013d). The region's employment is expected to increase by 210,300, or 17.9 percent, between 2010 and 2050. This is a substantially slower rate of employment growth compared with the previous 40-year period (1970 to 2010), when the region increased employment by 50 percent. Between 2010 and 2050, Milwaukee County is expected to add 33,500 jobs (5.8 percent increase) and Waukesha County is expected to add 69,500 jobs (25.8 percent increase).

Table 11: Employment Projections – Milwaukee and Waukesha Counties – 2050

Location	2010	2050	Absolute Change	Percent Change	Percent of Region (2010)	Percent of Region (2050)
Milwaukee County	575,400	608,900	33,500	5.8	48.9	43.9
Waukesha County	268,900	338,400	69,500	25.8	22.8	24.4
SE Region	1,176,600	1,386,900	210,300	17.9	100.0	100.0

Source: SEWRPC. The Economy of Southeastern Wisconsin. Technical Report No. 10 (5th Edition). 2013.

According to SEWRPC, the historical decrease in Milwaukee County's share of regional employment and the increase in Waukesha County's share would be moderated over the 2010-to-2050 projection period (SEWRPC 2013d). Milwaukee County's regional employment share is expected to change from 48.9 percent in 2010 to 43.9 percent in 2050. Waukesha County's regional employment share is expected to change from 22.8 percent in 2010 to 24.4 percent in 2050.

2.2.1.3 Racial Composition

This section describes the 2010 racial composition of the primary and secondary study areas.

Primary Study Area Racial Composition

Table 12 shows the racial composition for the primary study area census tracts (U.S. Census Bureau 2014).

Table 12: Primary Study Area – Racial Composition – 2010

Race	Location (Primary Study Area Portion Only)				
	City of Milwaukee	City of West Allis	Village of West Milwaukee	City of Wauwatosa	Total Primary Study Area
White	42,686	12,913	2,365	16,469	**74,433**
Hispanic	42,504	2,856	984	477	**46,821**
Black or African American	37,337	774	234	547	**38,892**
American Indian/Alaska Native	925	281	39	5	**1,250**
Asian	6,907	214	144	407	**7,672**
Native Hawaiian/Other Pacific Islander	105	0	0	0	**105**
Some other race	250	0	0	23	**273**
Two or more races	2,646	488	454	376	**3964**
Total Population	133,360	17,526	4,220	18,304	**173,410**
Total minority population*	90,674	4,613	1,855	1,835	**98,977**
Percent minority population*	68.0	26.3	44.0	10.0	**57.1**

Source: U.S. Census Bureau, 2010 Census of Population
** The minority population includes persons reported in the U.S. Census as being of Hispanic origin or reporting their race as Black or African American, American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, some other race, or more than one race.*

The primary study area contains a sizeable minority population. In 2010, the minority population in the primary study area was 98,977, accounting for 57.1 percent of the total primary study area population. Within the primary study area, the City of Milwaukee portion had the largest minority population percentage at 68 percent. The Village of West Milwaukee contained the second largest minority population percentage at 44 percent. The West Allis and Wauwatosa portions of the primary study area had minority population percentages of 26.3 percent and 10 percent, respectively, in 2010.

Exhibit 7 shows the minority population percentage by a census tract for the primary study area in 2010. The map shows the highest minority population percentage is located in the City of Milwaukee to the north and south of I-94, and to the east of US 41. The north side of I-94 contains a large black/African American population, and the south side of I-94 contains a large Hispanic population.

Secondary Study Area Racial Composition

The racial composition of Milwaukee and Waukesha counties was reviewed for the secondary study area and is presented Table 13 (U.S. Census Bureau 2014). In 2010, Milwaukee County had a total minority population of 432,777 or 45.7 percent of the total population. Waukesha County had a minority population of 36,777, which was 9.4 percent of the total population. The largest minority groups in Milwaukee County are black/African American and Hispanic. In Waukesha County, the largest minority groups are Hispanic and Asian.

Table 13: Secondary Study Area – Racial Composition – 2010

	Milwaukee County		Waukesha County	
Race/Ethnicity	**Number**	**Percent**	**Number**	**Percent**
White	514,958	54.3	353,114	90.6
Hispanic	126,039	13.3	16,123	4.1
Black or African American	248,794	26.3	4,726	1.2
American Indian/Alaska Native	5,212	0.5	863	0.2
Asian	32,007	3.4	10,675	2.7
Native Hawaiian/Other Pacific Islander	296	0.0	117	0.0
Other	1,139	0.1	252	0.1
Two or More Races	19,290	2.0	4,021	1.0
Total Population	947,735	100.0	389,891	100.0
Total minority population*	432,777	45.7	36,777	9.4

Source: U.S. Census Bureau, 2010 Census of Population
** The minority population includes persons reported in the U.S. Census as being of Hispanic origin or reporting their race as Black or African American, American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, some other race, or more than one race.*

Exhibit 8 shows the minority population percentage by census tract for the secondary study area in 2010. The map shows a substantial concentration of minority populations in the City of Milwaukee's near-north, northwest and near south-side neighborhoods. In Waukesha County, the only substantial concentration of minority populations is in the City of Waukesha.

According to SEWRPC, regional population trends show an increasing minority population and a decreasing non-Hispanic white population as a percentage of the total regional population. The minority share of the total regional population increased from 13 percent in 1980 to 29 percent in 2010. Conversely, the non-Hispanic white population share decreased from 87 percent in 1980 to 71 percent in 2010 (SEWRPC 2013c). If past trends continue, SEWRPC states the minority share of the total regional population would increase to almost 45 percent in 2050.

Exhibit 7: Primary Study Area - Minority Population Percentage - 2010

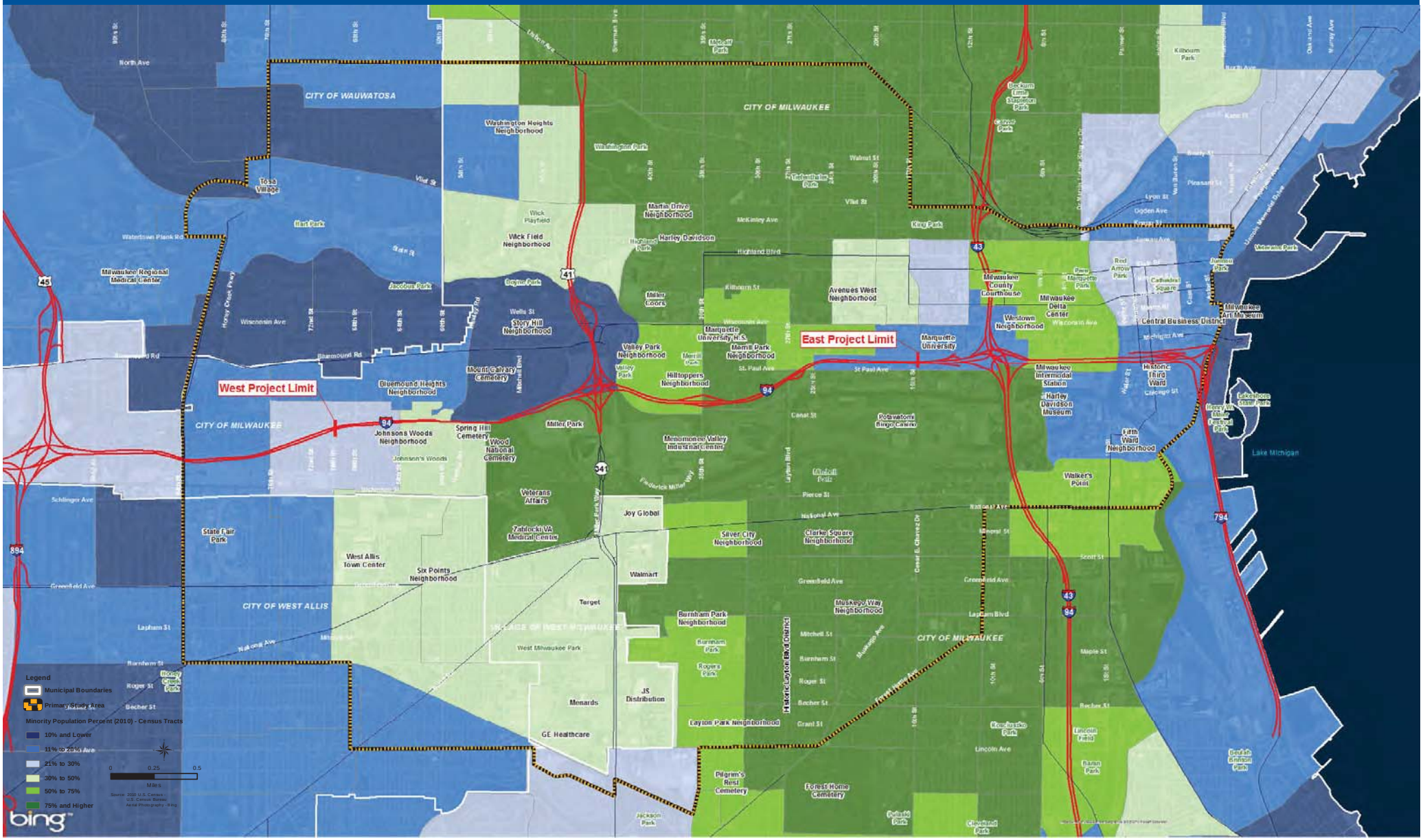
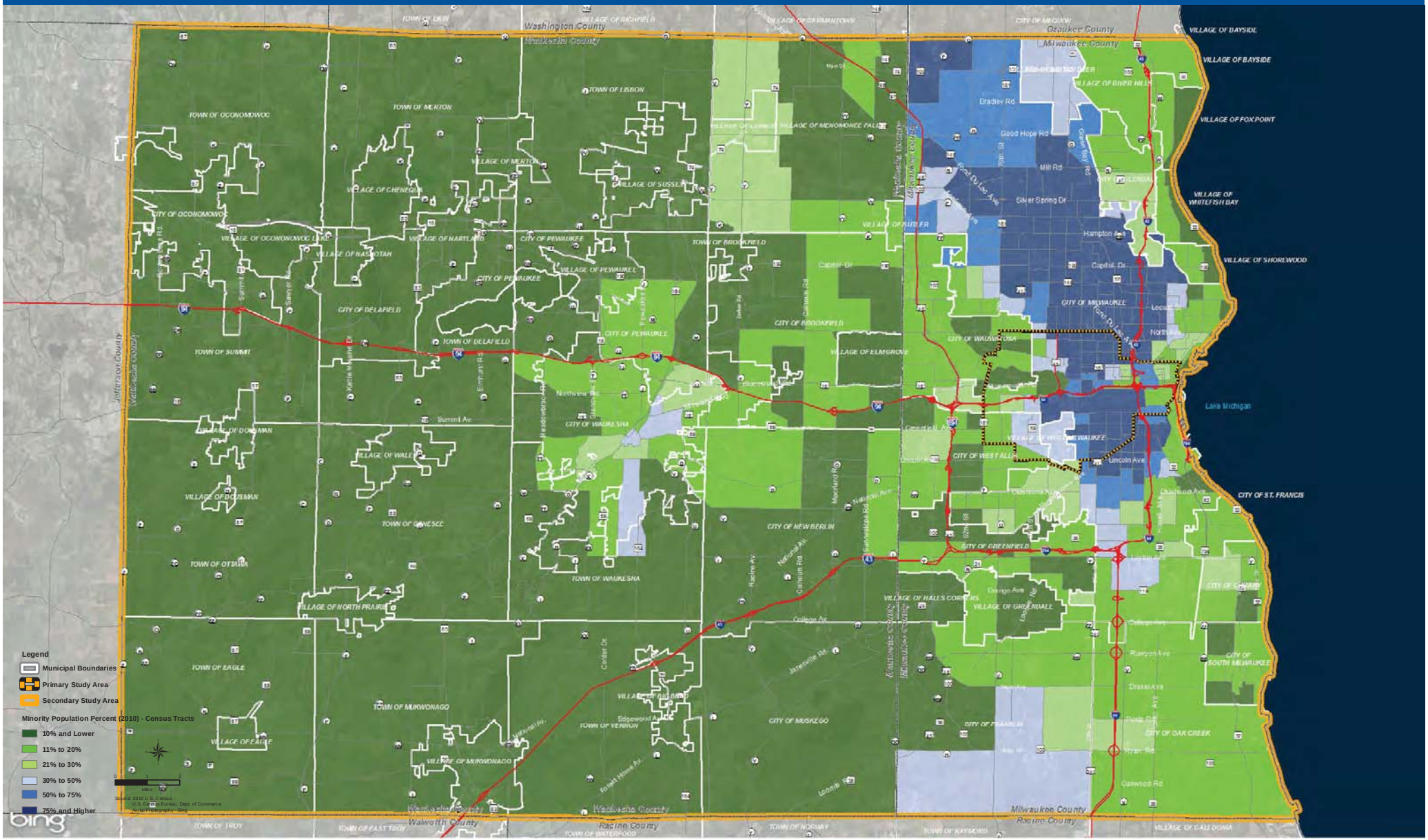


Exhibit 8: Secondary Study Area - Minorty Population Percentage - 2010



2.2.1.4 Persons in Poverty

This section discusses the poverty rates for the primary and secondary study areas.

Primary Study Area Poverty

Table 14 shows persons in poverty for the primary study area census tracts (U.S. Census Bureau 2014). In 2010, the primary study area had 48,121 persons in poverty, accounting for 30 percent of the total population. The City of Milwaukee portion of the primary study area had the highest percentage of persons in poverty at 34.4 percent. The City of West Allis and the Village of West Milwaukee had similar poverty rates of nearly half of the amount in the City of Milwaukee, while the City of Wauwatosa had the smallest poverty rate.

Table 14: Primary Study Area – Persons in Poverty – 2010

Location	Total Population	Persons in Poverty	Poverty Percentage
City of Milwaukee	126,622	43,513	34.4
City of West Allis	17,204	2,787	16.2
Village of West Milwaukee	4,220	704	16.7
City of Wauwatosa	18,015	1,117	6.2
Total primary study area	**166,061**	**48,121**	**30.0**

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2006-2010.

Exhibit 9 shows the percentage of persons in poverty by census tract for the primary study area in 2010. The map shows the highest rates of poverty are concentrated to the north of I-94, east of US 41 and west of I-43 in the City of Milwaukee. High rates of poverty are also found on the city's south side, especially to the east of 27th Street. The primary study area west of US 41/Miller Park Way has lower percentages of persons in poverty compared with the east side of the primary study area.

Secondary Study Area Poverty

The percentage of persons in poverty for Milwaukee and Waukesha counties was reviewed for the secondary study area and is shown in Table 15 (U.S. Census Bureau 2014). Milwaukee County had 176,196 persons in poverty in 2010, accounting for 19.2 percent of the population. Waukesha County had a substantially lower rate of poverty in 2010, accounting for 4.4 percent of the total population.

Table 15: Secondary Study Area – Persons in Poverty – 2010

Location	Total Population	Persons in Poverty	Poverty Percentage
Milwaukee County	915,325	176,196	19.2
Waukesha County	381,495	16,865	4.4

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2006-2010.

Exhibit 10 shows the percentage of persons in poverty by census tract for the secondary study area in 2010.The map shows the highest rates of poverty were concentrated within the City of Milwaukee, especially north of I-94 and east of US 41. Areas of the city's south side also had high rates of poverty to the south of I-94 and east of 27th Street. Some areas of the City of Waukesha also had higher rates of poverty compared with the surrounding communities, which had substantially lower percentages of persons in poverty.

Exhibit 9: Primary Study Area - Persons in Poverty Percentage - 2010

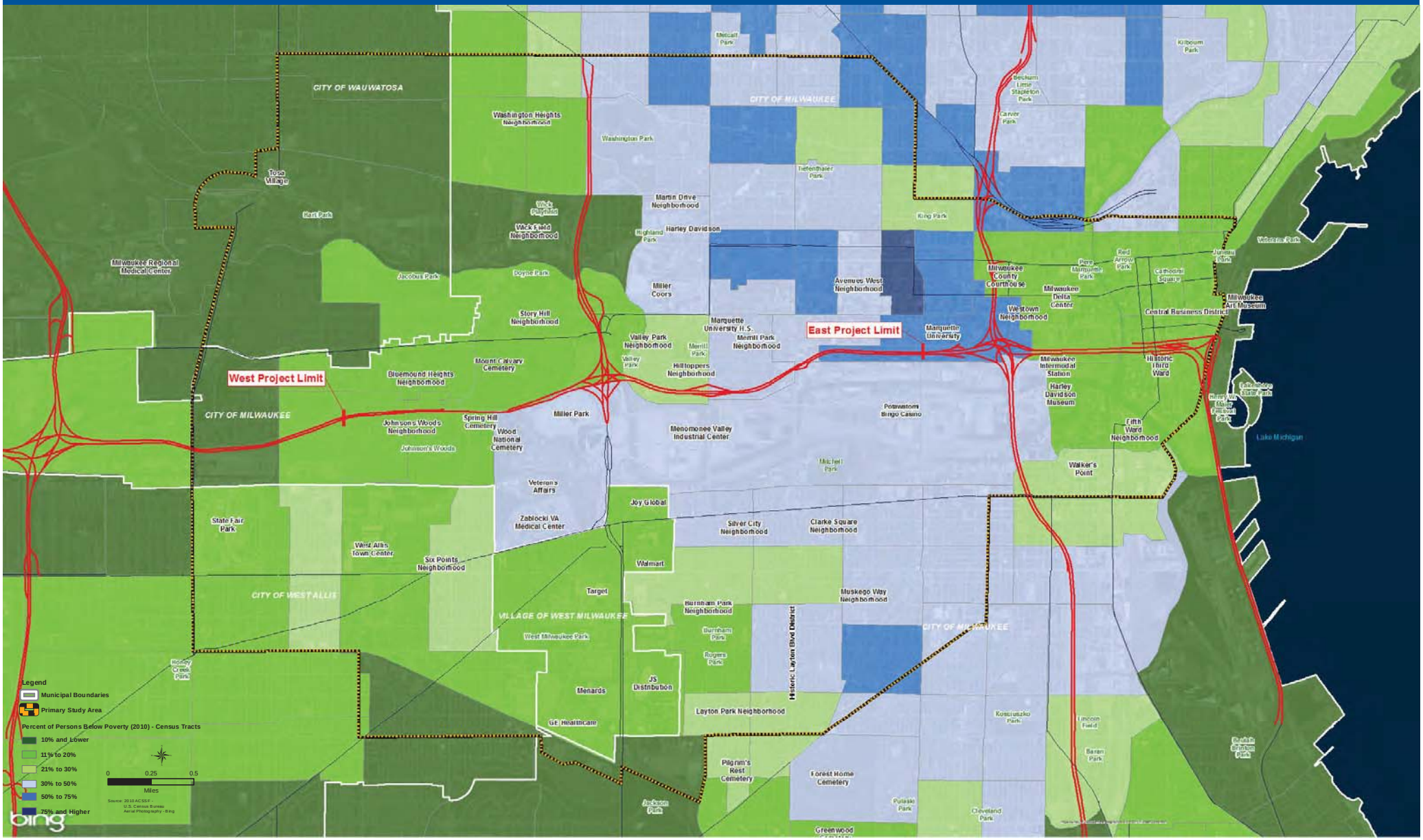
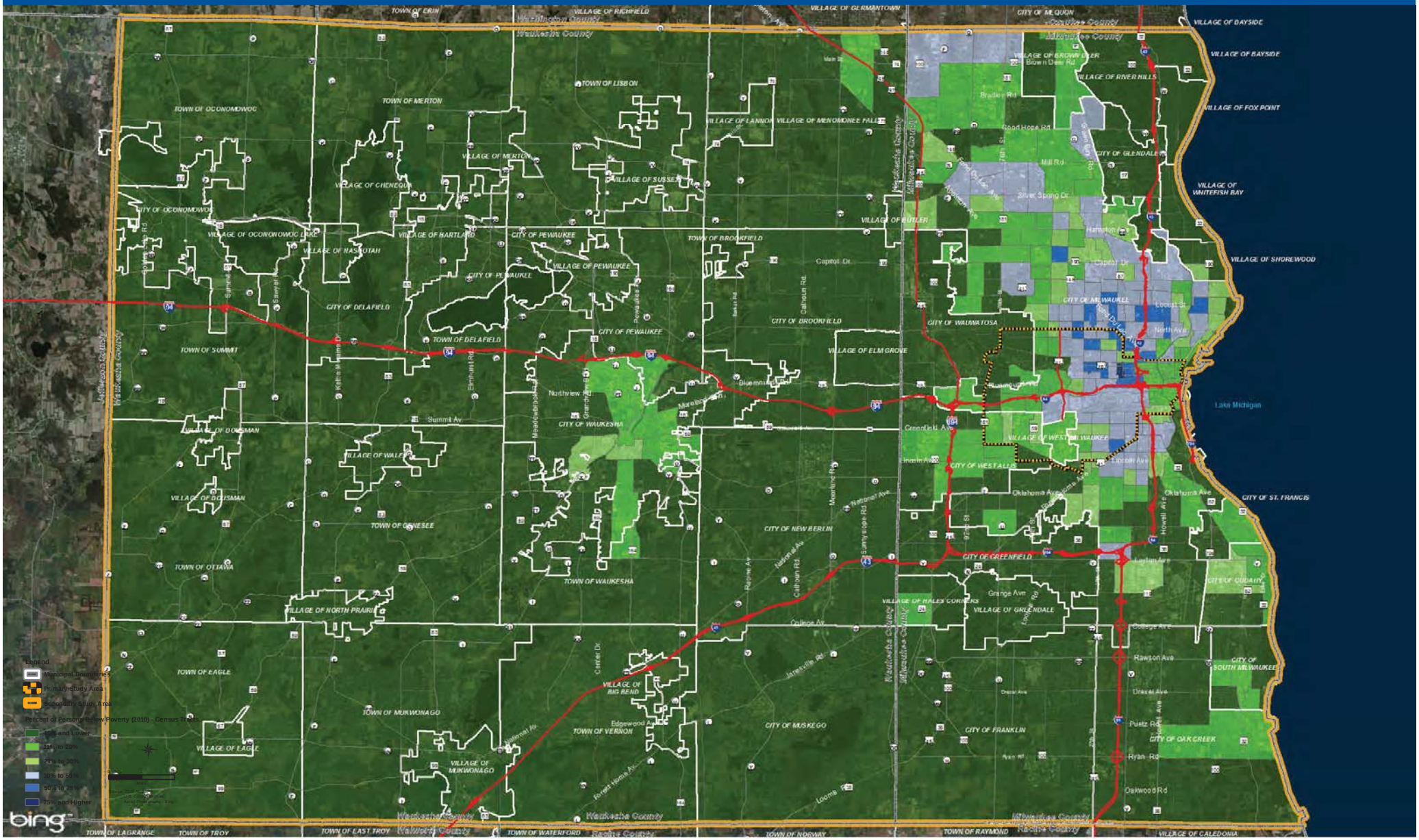


Exhibit 10: Secondary Study Area - Persons in Poverty Percentage - 2010



2.2.1.5 County-To-County Worker Flows

The study team reviewed county-to county worker flow data to understand communing patterns for workers within Milwaukee and Waukesha counties. This data is not available at the census tract or municipal levels; it is only available at the county level.

County-to-county worker flows for Milwaukee and Waukesha counties are shown in Table 16 (U.S. Census Bureau 2014). A large portion of Milwaukee County's workforce (80.8 percent) is employed within Milwaukee County. This is higher than the statewide percentage (72.1 percent) of workers who live and work in the same county. Waukesha County is the second largest place of employment for Milwaukee County workers, accounting for 13.1 percent of the Milwaukee County workforce. All of the other places of work combined represent about 6 percent of the Milwaukee County workforce.

In Waukesha County, 61.9 percent of the county's workforce is employed within Waukesha County. This is slightly less than the regionwide figure of 68.6 percent. Milwaukee County is the second largest place of work for Waukesha County residents, accounting for 30.6 percent of Waukesha County's workforce. All of the other places of work combined represent about 7 percent of the Waukesha County workforce.

Table 16: Place of Work for Milwaukee County and Waukesha County Labor Force

Place of Work	Milwaukee County Employed Residents		Waukesha County Employed Residents	
	Number	Percent	Number	Percent
Milwaukee County	350,824	80.8	61,602	30.6
Waukesha County	57,087	13.1	124,374	61.9
Ozaukee County	7,825	1.8	1,624	0.8
Washington County	4,378	1.0	3,501	1.7
Racine County	4,787	1.1	2,090	1.0
Kenosha County	1,760	0.4	554	0.3
Walworth County	748	0.2	1,245	0.6
All other counties in WI	3,369	0.8	3,949	2.0
Illinois	1,968	0.5	1,041	0.5
Other (international/out-of-state)	1,566	0.4	1,022	0.5
Total Workers	**434,312**	**100.0**	**201,002**	**100.0**

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2006-2010.

2.2.1.6 Means of Transportation to Work

This section discusses the means of transportation to work for people in the primary and secondary study areas.

Primary Study Area Means of Transportation to Work

Table 17 shows the means of transportation to work for the workers in the primary study area (U.S. Census Bureau 2014). The majority of workers (67.4 percent) commute by driving alone. Carpooling accounts for 13.5 percent of workers and 7.3 percent of workers use public transportation. Another 7.7 percent of workers walked to work.

Table 17: Primary Study Area - Means of Transportation to Work – 2010

Mode	Number	Percent
Drive Alone	51,105	67.4
Carpool	10,255	13.5
Public Transportation	5,573	7.3
Bicycle	483	0.6
Walked	5,857	7.7
Other	2,460	3.2
Total	**75,782**	**100**

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2006-2010.

Secondary Study Area Means of Transportation to Work

Table 18 summarizes the means of transportation to work for the secondary study area (U.S. Census Bureau 2014). Waukesha County has a higher percentage of people who drive alone to work (86.1 percent) compared with Milwaukee County (76.2 percent). This is because a higher percentage of Milwaukee County workers carpool (10.6 percent), take public transit (5.7 percent) or walk (3.5 percent) to work, compared with Waukesha County workers.

Table 18: Secondary Study Area - Means of Transportation to Work - 2010

	Milwaukee County		Waukesha County	
Mode	**Number**	**Percent**	**Number**	**Percent**
Drive Alone	330,905	76.2	173,000	86.1
Carpool	46,100	10.6	13,580	6.8
Public Transportation	24,800	5.7	1,585	0.8
Bicycle	2,685	0.6	385	0.2
Walked	15,400	3.5	2,980	1.5
Other	14,135	3.3	9,370	4.7
Total	**434,100**	**100**	**201,000**	**100**

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2006-2010.

2.2.1.7 Vehicles Available

Vehicles available by occupied housing units were reviewed for the primary and secondary study areas.

Primary Study Area Vehicles Available

Table 19 shows the vehicles available for occupied housing units within the primary study area (U.S. Census Bureau 2014). A substantial amount (19.6 percent) of the housing units in the primary study area has no vehicles available. Just over 42 percent of the housing units have one vehicle available, and 37.7 percent of housing units have two or more vehicles available.

Table 19: Primary Study Area – Vehicles Available - 2010

Number Vehicles	Number	Percent
None	12,810	19.6
One vehicle	27,825	42.6
Two or more vehicles	24,604	37.7

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2006-2010.

Secondary Study Area Vehicles Available

Table 20 shows the vehicles available for occupied housing units in the secondary study area (U.S. Census Bureau 2014). In Waukesha County, over 95 percent of housing units have at least one vehicle available, and 3.9 percent of housing units had no vehicle available. In Milwaukee County, over 86 percent of the housing units have at least one vehicle available, and 13.4 percent of housing units have no vehicle available.

Table 20: Secondary Study Area – Vehicles Available - 2010

	Milwaukee County		Waukesha County	
Number Vehicles	**Number**	**Percent**	**Number**	**Percent**
None	51,025	13.4	5,955	3.9
One vehicle	159,605	42.1	38,950	25.8
Two or more vehicles	168,745	44.5	106,255	70.3

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2006-2010.

2.2.2 Existing Land Use Patterns and Development Trends

This section describes the existing land use patterns and development trends for the primary and secondary study areas. The first subsection reviews the existing land use categories for the two study areas, and the following subsection discuss the development trends that the study team researched for the two study areas.

2.2.2.1 Existing Land Use

Primary Study Area Existing Land Use

Table 21 shows the existing land use acres for the primary study area (SEWRPC 2013a). Residential uses (29.8 percent) make up the largest percentage of land use acres, followed by transportation uses (27.4 percent). Government/institutional uses (9.3 percent) and industrial uses (8.4 percent) make up the next largest land use categories, followed closely by commercial uses (8.9 percent). Open lands make up 6.4 percent of the land uses in the primary study area.

Table 21: Primary Study Area - Existing Land Use – 2010

	Primary Study Area	
Land Use Category	**Acres**	**Percent of Total**
Commercial	1,002	8.2
Residential	3,713	30.6
Industrial	1,002	8.2
Government and Institutional	1,134	9.3
Transportation	3,371	27.7
Communications and Utilities	129	1.1
Open Lands*	770	6.4
Recreational	868	7.1
Agricultural	1	0.0
Water	164	1.4
Total Acres	**12,154**	**100**

Source: SEWRPC 2010 Land Use Files
**Open lands includes woodlands, wetlands, unused urban and rural lands and landfills.*

Exhibit 11 shows a map of the existing land uses for the primary study area in 2010. It shows large compact residential areas surrounding the central business district in downtown Milwaukee and large pockets of industrial and government/institutional uses. Linear commercial corridors bisect the residential areas along the east-west and north-south arterials. Large blocks of recreational uses can be seen at the major regional entertainment facilities and county park system. Open lands mostly are associated with small strips of environmental corridors along the river systems as well as a few vacant parcels of land.

Exhibit 11: Primary Study Area - Existing Land Use

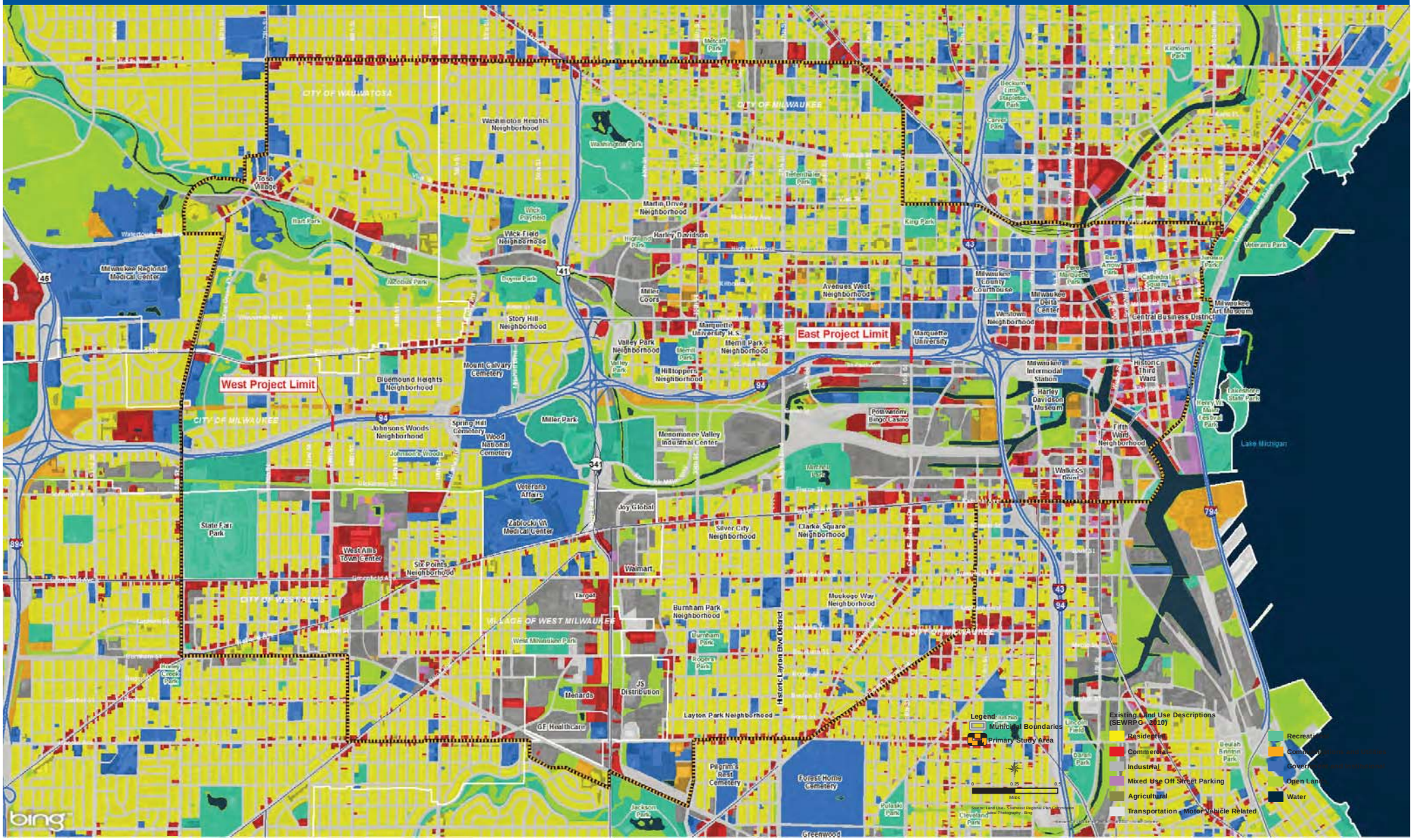
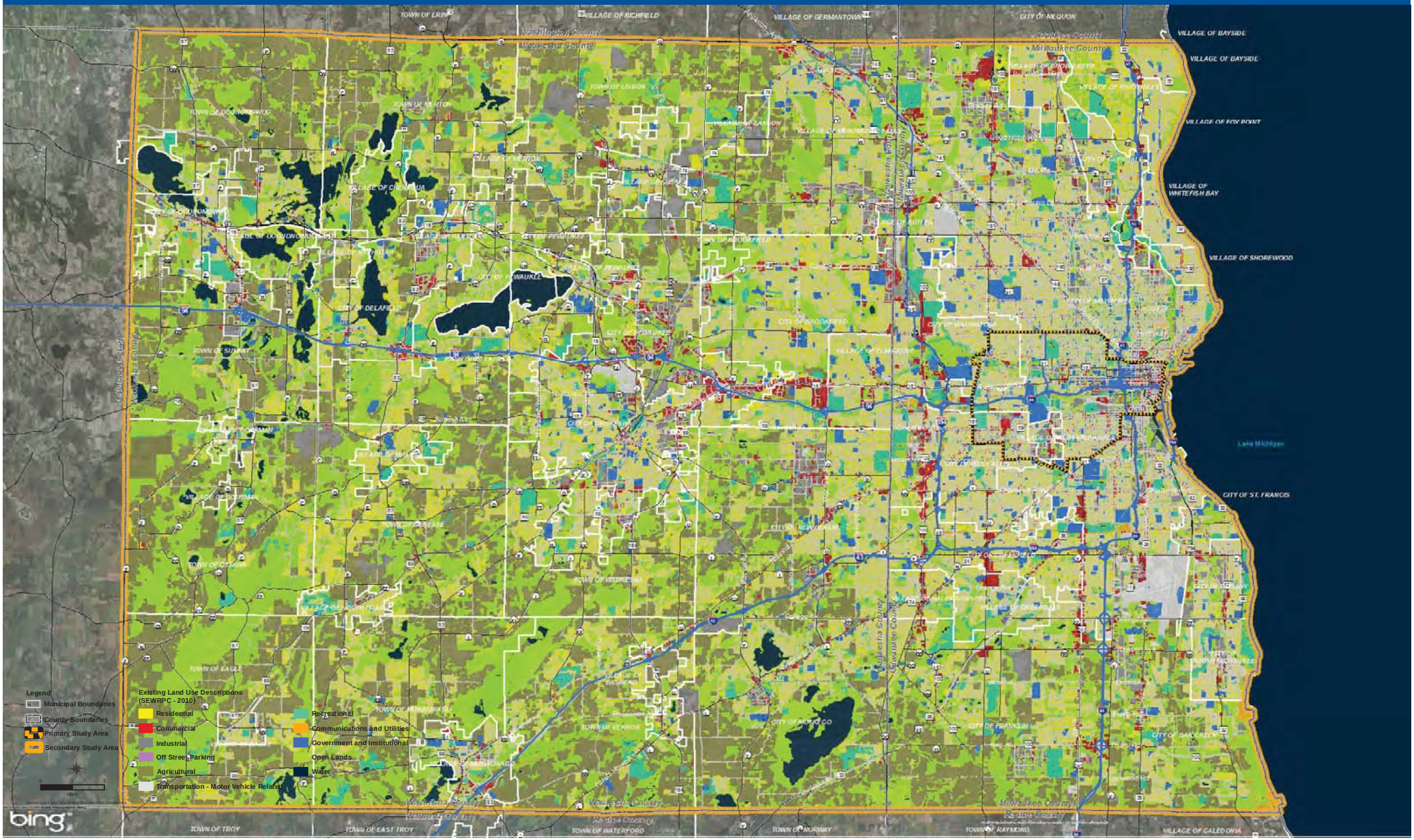


Exhibit 12: Secondary Study Area - Existing Land Use



Secondary Study Area Existing Land Use

Table 22 shows the existing land uses for the secondary study area (SEWRPC 2013a). In Milwaukee County, residential, transportation and open lands are the three largest land use categories making up 32.7 percent, 20.8 percent and 16.8 percent of the total acres, respectively. In Waukesha County, the three largest land use categories are open lands, (29.8 percent), agricultural (25.8 percent) and residential (22.4 percent). Commercial land uses make up 5.2 percent of Milwaukee County and 1.8 percent of Waukesha County. Industrial land uses in Milwaukee and Waukesha counties make up 4.9 percent and 2.6 percent, respectively.

Table 22: Secondary Study Area – Existing Land Use – 2010

	Milwaukee County		Waukesha County	
Land Use Category	**Acres**	**Percent of Total**	**Acres**	**Percent of Total**
Commercial	8,075	5.2	6,540	1.8
Residential	50,851	32.7	83,403	22.4
Industrial	7,582	4.9	9,755	2.6
Government and Institutional	8,548	5.5	5,638	1.5
Transportation	32,255	20.8	31,325	8.4
Communications and Utilities	1,476	1.0	850	0.2
Open Lands	26,026	16.8	110,841	29.8
Recreational	7,871	5.1	9,399	2.5
Agricultural	11,129	7.2	95,710	25.8
Water	1,531	1.0	18,076	4.9
Total Acres	**155,343**	**100**	**371,538**	**100**

Source: SEWRPC 2010 Land Use File

Exhibit 12 shows a map of the existing land uses for the secondary study area. The map shows the more urbanized and compact areas of Milwaukee County and the eastern side of Waukesha County (New Berlin, Elm Grove, Brookfield, Menomonee Falls, Waukesha) transition to areas of development surrounded by areas of open space and agricultural land use.

2.2.2.2 Development Trends

This section describes the land use and development trends for the primary and secondary study areas. The information is based on site visits, a review of local land use plans and stakeholder input that was described in Section 2.1.2. The following exhibits are also used to help convey information about the study areas: Exhibit 13, Primary Study Area Development Trends; Exhibit 14, Secondary Study Area Sewer and Water Services; and Exhibit 15, Secondary Study Area Economic Activity Centers.

Primary Study Area Development Trends

This section first generally describes primary study area land use and development trends, and then it describes development trends in more detail for the various communities within the primary study area. The development trends described in this section are summarized on Exhibit 13.

The primary study area is located within fully developed urban communities in Wauwatosa, West Allis, West Milwaukee and the City of Milwaukee. Land uses in the primary study area contain relatively compact/high-density residential neighborhoods with predominately single-family and two-family homes, and pockets of multifamily uses. Neighborhoods range from stable, middle-class residential areas on the west side of the study area to more fragile residential neighborhoods to the east side of the Stadium Interchange, where higher rates of poverty are present. Several neighborhood revitalization efforts are ongoing and have helped to improve the conditions within in the Avenues West, Layton Boulevard West, Clark Square and Muskego Way neighborhoods.

Exhibit 13: Primary Study Area — Development Trends

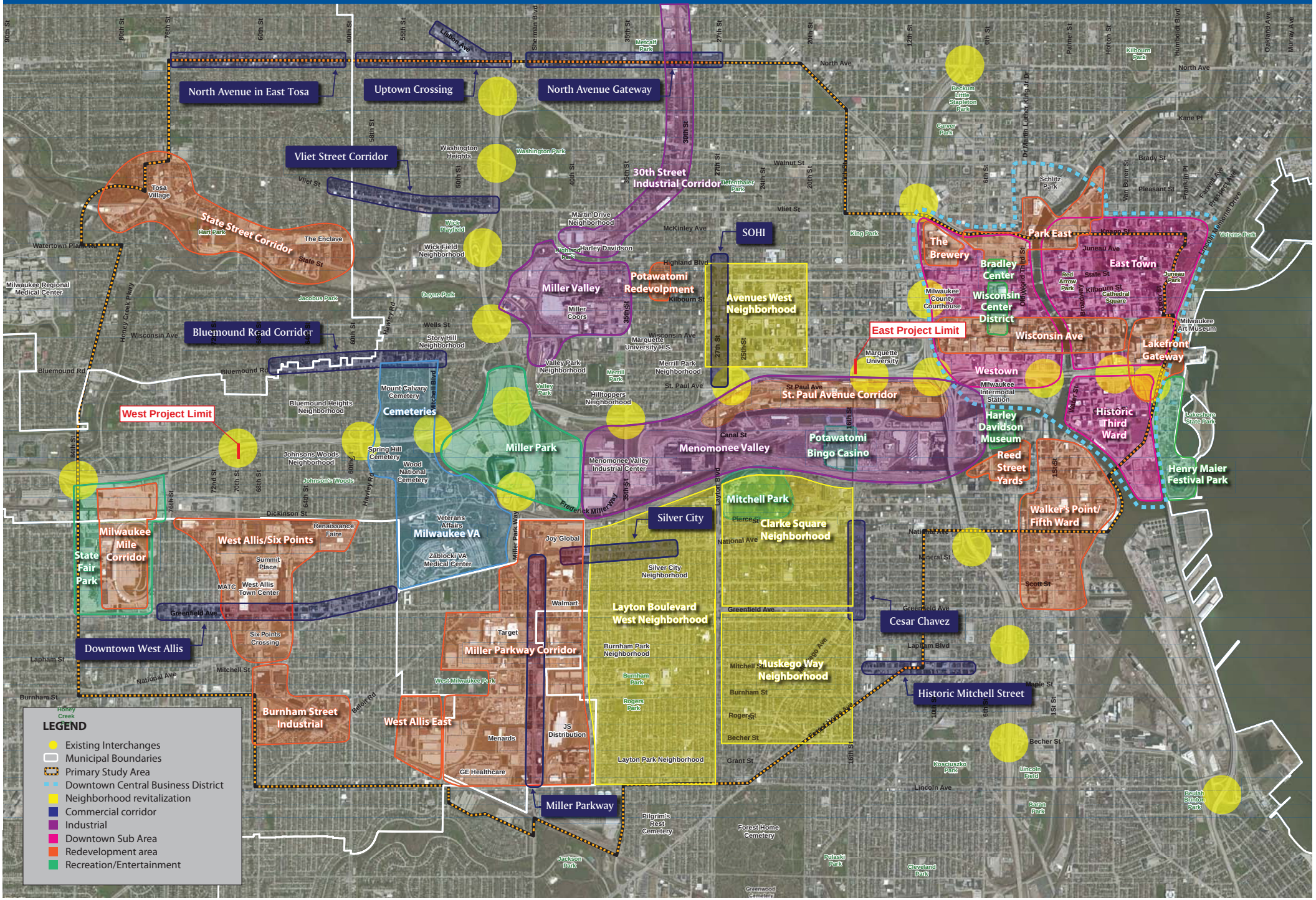


Exhibit 14: Secondary Study Area - Sewer and Water Services

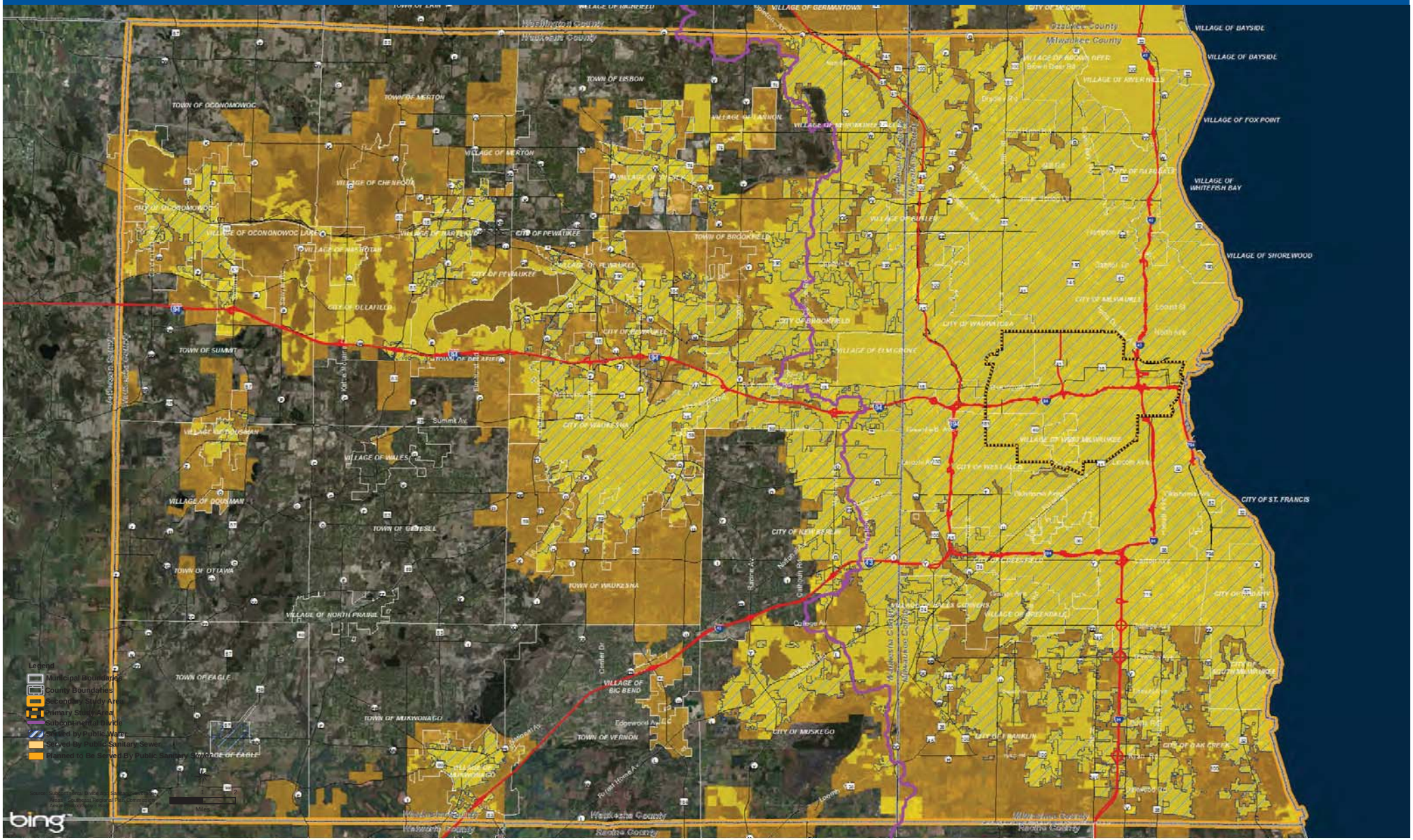
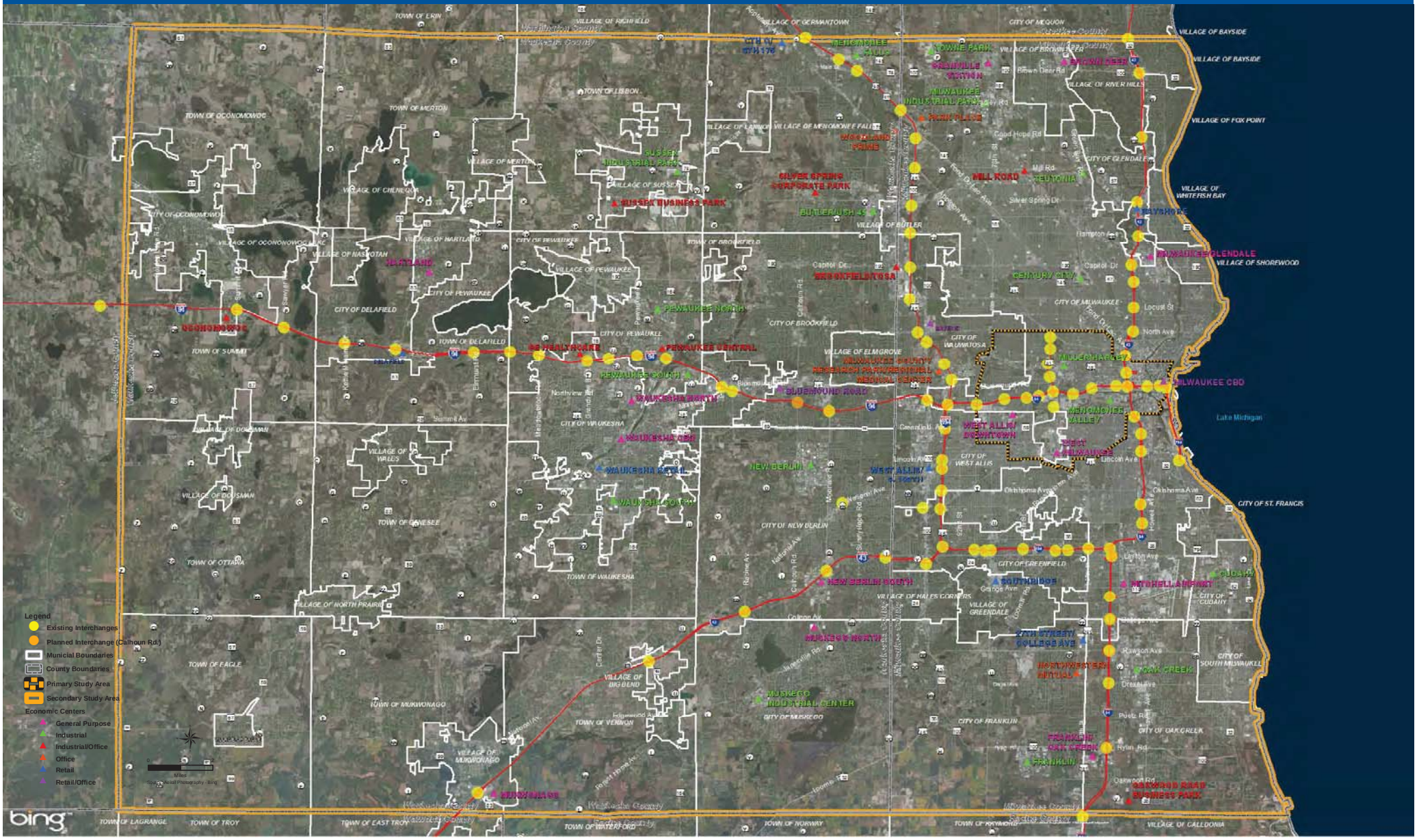


Exhibit 15: Secondary Study Area - Economic Activity Centers



The primary study area contains many existing urban commercial corridors, including Cesar Chavez Drive, the South of Highland (SOHI) district along 27th Street; Silver City along National Avenue; Greenfield Avenue/National Avenue in West Allis; and Bluemound Road, Vliet Street and North Avenue. The commercial corridors contain many small, main-street-like businesses such as eating and drinking establishments, and personal care and professional services. The Miller Park Way corridor is one of the few areas within the primary study area that contains large national chain retail stores.

The primary study area has large institutional uses associated with the Milwaukee Veterans' Affairs (VA) regional office, the Clement J. Zablocki VA Medical Center and cemeteries. It also has many recreational and entertainment destinations such as Potawatomi Hotel and Casino, Hank Aaron State Trail, Harley-Davidson Museum, Mitchell Park Horticultural Conservatory and Miller Park. These amenities draw millions of visitors annually. According to local stakeholder input, the influx of visitors and the increasing availability of recreational amenities have helped to revitalize adjacent neighborhoods. In addition, the primary study area has many downtown entertainment events that draw 4.3 million visitors annually to the BMO Harris Bradley Center, Henry Maier Festival Park and the Wisconsin Center District (Progressive Urban Management Associates 2012).

The primary study area contains several existing redevelopment areas, including the State Street corridor in Wauwatosa; the downtown/Six Points area in West Allis; the Miller Park Way corridor in West Milwaukee; and several redevelopment districts in and around downtown such as The Brewery, Park East and the Walker's Point/Fifth Ward area. The redevelopment areas have created new housing options and employment opportunities within the primary study area. Also, several areas within the primary study area have been identified for future redevelopment such as the St. Paul Avenue corridor, the Milwaukee Mile, Wisconsin Avenue and Reed Street Yards.

Downtown Milwaukee is included in the primary study area. Downtown is the central business district of the Milwaukee metropolitan area and sustains over 81,000 jobs (Progressive Urban Management Associates 2012). Downtown has many unique districts and can be divided into three main subareas: East Town, Westown and the Third Ward. Spillover development from the Third Ward has pushed into the Walker's Point/Fifth Ward area.

City of Wauwatosa

According to stakeholder interviews with city staff and local real estate professionals, Wauwatosa is a desirable inner ring Milwaukee County suburb that is attracting young professionals and young families due to its central regional location, good transportation access, compact and walkable neighborhoods, and the availability of regionally significant employment centers associated with the Milwaukee County Research Park and the Milwaukee Regional Medical Center.

The eastern side of the City of Wauwatosa is located within the primary study area on the west side of the project corridor and north of I-94. This portion of Wauwatosa was largely developed during the first half of the 1900s and includes the historic downtown Wauwatosa area known as the Tosa Village. The primary study area portion of Wauwatosa is served by the I-94 interchanges at 68th/70th Street and the Hawley Road, and by US 41.

The City of Wauwatosa has been actively pursuing redevelopment of former industrial parcels to maintain and increase its tax base. These pro-redevelopment policies are likely to continue as Wauwatosa is in the process of updating its economic development policies to encourage additional planned redevelopment that will continue to support its tax base into the future. (See stakeholder interview with Robert Simi in Appendix C.)

The State Street corridor is a redevelopment district within the Wauwatosa portion of the primary study area. The city adopted the *Village of Wauwatosa Strategic Development Plan* in 2011 to guide the redevelopment of this area (City of Wauwatosa 2011). The plan recommends several public-realm projects to improve the functionality and connectivity of the area. Also, it recommends several redevelopment sites that convert public lands or former industrial areas to new high-density residential and commercial uses.

The west end of the State Street corridor is anchored by the Tosa Village, which contains a mixture of local shops and restaurants. The city anticipates continued revitalization and smaller-scale infill development within the Tosa Village area. The city is currently exploring in the Tosa Village area options for residential/commercial mixed-use development for the site known locally as the remnant fire station parcel. To the east of the Tosa Village, along State Street between approximately 72nd and 74th streets, the city anticipates continued rehabilitation and existing property investment. The west side of the State Street corridor is planned for substantial residential development. The area between approximately 68th and 60th streets on the north side of State Street has already seen new residential investment with The Enclave 150-unit apartment building and The Reserve at Wauwatosa Village 230-unit apartment complex. Additional apartment buildings are being planned in this area including 40-unit The Annex @ Enclave apartment building. The city anticipates future residential development on the south side of State Street in this area when lands are taken out of the Menomonee River floodplain as a result of upstream improvements by the Milwaukee Metropolitan Sewerage District (MMSD).

The North Avenue corridor in East Tosa is a commercial corridor within the Wauwatosa portion of the primary study area that extends about 16 blocks between 76th Street and 60th Street. The *City of Wauwatosa Comprehensive Plan* calls this corridor "Tosa's Main Street" and says it is one of the most important neighborhood-oriented commercial corridors in the community (City of Wauwatosa 2008). It contains many neighborhood-serving commercial businesses such as restaurants, bakeries, coffee shops, health care services, professional services and other retail goods and services. The City of Wauwatosa adopted in 2011 the *Wauwatosa East Town North Avenue Plan*, which includes recommendations for how to improve way-finding, pedestrian safety, traffic flow, economic development and aesthetics (City of Wauwatosa 2011). The city anticipates continued investment in small-scale neighborhood-oriented businesses within this corridor, redevelopment of key sites, and ongoing rehabilitation of existing buildings.

City of West Allis

After a major loss of manufacturing employment, the City of West Allis since the early 1990s has aggressively pursued redevelopment of its former industrial areas. The city has created 13 tax increment districts (TIDs) to promote the reuse of land, create jobs and add new tax revenues. According to stakeholder interviews, the community's central regional location, convenient access to the freeway system, close proximity to a large pool of workers, and affordable neighborhoods has helped West Allis attract new investment and residents. The I-94 interchanges at 68th/70th Street and the Hawley Road serve developments within the West Allis portion of the primary study area. Stakeholder input has stressed that these interchanges have been key to West Allis' redevelopment efforts. (See interviews with City of West Allis and Van Buren Management in Appendices A and C.)

TIDs within the primary study area have spurred private development on the east side of the community to the north and south of Greenfield Avenue where the former Allis-Chalmers Company once existed. This area contains a mixture of uses and includes downtown West Allis and the Six Points neighborhood. Examples of develop in this area include the following:

- The West Allis Towne Center at the northeast quadrant of Greenfield Avenue and 70th Street.
- Office buildings and higher educational facilities including a Milwaukee Area Technical College (MATC) campus along 70th Street to the north of Greenfield Avenue.
- Several multifamily residential and commercial developments in the area known as the Six Points Crossings to the south of Greenfield Avenue. Examples include the Six Points Apartments and Six Points East Condominiums. An additional 250 apartment units are planned.
- The Summit Place Office complex located immediately north of the West Allis Towne Center along Washington Street. It is the city's largest taxpayer and contains 650,000 square feet of office and over 4,000 jobs (City of West Allis 2012).

- The Renaissance Faire office building (801 S. 60th St.), which was a former Sam's Club. The building was recently renovated and could add up to 200,000 square feet of new space for a total 400,000 square feet. Tenants include Wheaton Franciscan, CBS-affiliate WDJT-TV (Channel 58) and US Bank.

To the south of the Six Points area, the City of West Allis has been working to redevelop the area north and south of Burnham Street between approximately 64th Street and 68th Street (Burnham Street Industrial). The city's focus in this area is to revitalize industrial development. An example of the city's redevelopment efforts includes the creation of a tax increment financing (TIF) district for almost 12-acre contaminated former industrial parcel surrounded by the Union Pacific Railroad, West Becher Place and 67th Place. The city remedied the site's environmental contamination and has prepared it for development. The city's comprehensive plan outlines other future industrial redevelopment projects in this area.

On the very east side of the City of West Allis, south of Burnham Street between approximately 52nd and 56th streets , the city has focused on revitalizing industrial land uses with TIF (West Allis East Industrial on map). Examples include the former approximately 13-acre Wehr Steel site (2154 S. 54th St.), where a new distribution center and office building were constructed. More recently the City of West Allis created a TID at the former Teledyne site located at the southeast corner of Burnham Street and 53rd Street. The city is in the process of preparing the site for development.

The City of West Allis' comprehensive plan envisions a long-range plan to redevelop the Milwaukee Mile (a mile-long oval race track located on the grounds of the Wisconsin State Fair Park) into a large, mixed-use commercial district should the race track discontinue its operations in the future (City of West Allis 2011). The Milwaukee Mile site is located near the I-94 interchange at 84th Street and contains 127.5 acres. About 85 of those acres are within West Allis' borders. The city's comprehensive plan says the potential future development site could generate over $1.2 billion of development and could accommodate 8 million square feet of building space (City of West Allis 2011). The plan recommends re-establishing Honey Creek, which is currently underground, to provide a central amenity for the development site. Development would be expected to occur over a 20- to 30-year timeframe.

The Greenfield Avenue commercial corridor in downtown West Allis is the community's main street district and is designated as a Wisconsin Main Street district that is led by the Downtown West Allis BID. Downtown West Allis is one of the target areas for the city's Commercial Façade Improvement Program, which provides financial incentives for commercial properties for exterior renovations that improve the aesthetics in the district. The city and the BID utilize the Wisconsin Main Street designation and the façade improvement program to help improve the corridor and attract new businesses.

Village of West Milwaukee

The Village of West Milwaukee is a small inner-ring suburb of Milwaukee that has a land area of 1.13 square miles. The entire community lies within the primary study area. The community's primary access to I-94 is Miller Park Way via the Stadium Interchange/US 41. The I-94 interchanges at Hawley Road and 35th Street also serve the village.

The village has a long history of industrial development. At its peak, industrial land uses accounted for 80 percent of the village's total land area. Today, industrial land uses are still the dominant land use type in the village, accounting for 42 percent of the total land area (Village of West Milwaukee 2009).

Since the mid-1980s the village has been aggressively pursuing redevelopment of former industrial areas and vacant lands along the Miller Park Way corridor. The village prepared its first redevelopment plan in 1988 to address blighted properties and identify redevelopment projects. The plan was updated several times during the 1990s and 2000s to address ongoing redevelopment needs. TIF has been used to acquire properties, clear obsolete structures and provide public improvements.

As a result of the village's redevelopment policies, the Miller Park Way corridor has transitioned into a significant regional-scale shopping center with national chain stores. Menards, Target and most recently Wal-Mart have

constructed stores in this corridor. Other small- and medium-sized retailers include Pick n' Save and Cermak grocery stores, Speedway gas station, Snap Fitness, Great Clips, Office Max, banking institutions, restaurants, medical services and others. According to village officials, the market for additional retail uses remains strong, but most of the available retail sites along Miller Park Way have been developed.

Industrial uses continue to have a strong presence along the corridor and include Joy Global, Rexnord, JS Distribution, GE Healthcare and Froedtert Malt Corp. The village officials recognize that future redevelopment sites could open up along the corridor if any existing industrial facilities suspend operation due to changing market conditions.

The village also developed several apartment buildings along the Miller Park Way corridor, which increased the village's population in the 1990s. According to village officials, it receives calls from developers interested in building residential uses, but the village does not have any residential sites available at this time.

According to community officials, the village's redevelopment success has caused traffic congestion along Miller Park Way, which affects the community's quality of life. About 60,000 cars travel per day on the north end of Miller Park Way near National Avenue; traffic tapers off along the southern portion of the corridor near Lincoln Avenue. The village believes that improving traffic flow along Miller Park Way is necessary to serve existing and future development, and it is considering expanding the corridor's capacity.

City of Milwaukee

The discussion for the primary study area portion of the City of Milwaukee is broken up into the following four subareas: West of US 41; northeast of I-94/US 41; southeast of I-94/US 41; and downtown.

West of US 41 (north and south of I-94). The City of Milwaukee's *Near West Side Area Comprehensive Plan* includes this portion of the primary study area to the west of US 41 (City of Milwaukee 2004). This area is dominated by residential neighborhoods including the Johnson's Woods neighborhood bordering the south side of I-94; the Bluemound Heights neighborhood bordering the north side of I-94; and the Story Hill neighborhood bordering the northwest side of the Stadium Interchange and US 41. The Wick Field and Washington Heights neighborhoods are located immediately north of Story Hill between US 41 and the City of Wauwatosa's eastern boundary. These neighborhoods provide a source of stable, middle-class neighborhoods for the City of Milwaukee that have relatively high rates of home ownership.

Vliet Street is a commercial corridor within this portion of the primary study area. It extends east from the Wauwatosa border to about 43rd Street. It contains a cluster of small-scale neighborhood serving retail uses and has some long-term anchors like the Times Cinema. According to the Milwaukee *West Side Area Plan*, the Vliet Street corridor "is a successful commercial district with broad and local appeal." (City of Milwaukee 2009) Development trends indicate this commercial district is improving and has seen some new investment as new shops fill vacant spaces.

The Uptown Crossing commercial corridor is located along North Avenue between approximately 60th Street and Sherman Boulevard and along Lisbon Avenue from 46th to 51st streets. The corridor contains a mixture of small-scale restaurants, shops, offices and institutional uses. The Milwaukee Police District 3 and Communications Center is an anchor for the corridor. A business improvement district (BID) was established in 1995 to improve the streetscape and encourage more business development.

Miller Park is a large recreational/entertainment facility within this portion of the primary study area that encompasses about 227 acres. Miller Park contains the 43,000-seat home stadium of the Milwaukee Brewers in the southwest quadrant of the Stadium Interchange. Its parking lots are located in all four quadrants of the Stadium Interchange. In the past, the owners of the Milwaukee Brewers have talked about creating complimentary development opportunities within the parking lot areas. However, no known plans have moved forward.

The area to the west of Miller Park contains large institutional uses associated with the Milwaukee VA and its 6,000 employees. The area contains the Clement J. Zablocki VA Medical Center (5000 W. National Ave.), the second largest VA medical center in the United States. The medical center campus is located on 125 acres and is part of the VA Integrated Services Network 12, which includes facilities in Tomah and Madison; Iron Mountain, Michigan; and North Chicago, Hines and Chicago. It has 168 acute care beds, over 500,000 annual outpatient visits, 113 bed nursing home, and 356 domiciliary beds. The campus contains a VA regional office, the benefits center, a medical research center and the Wood National Cemetery (located on both sides of I-94). The VA campus was originally established in the 1860s as a "soldiers' home," and it is currently designated as a National Historic Landmark (see EIS Section 3.24, Historic Properties, for more information about historic landmarks). The Milwaukee VA organization is constructing a 16-unit home for residence by families of wounded veterans during their recovery at the medical center. No other development plans are known.

A cluster of cemeteries are located north of the Milwaukee VA on both sides of I-94. To the south of I-94, the cemeteries include the Wood National Cemetery mentioned above and the Spring Hill Cemetery. The Beth Hamedrosh Hagodel Cemetery and a portion of the Wood National Cemetery are located immediately north of I-94, and the Calvary Cemetery is located immediately north of the Wood National and Beth Hamedrosh Hagodel cemeteries.

Northeast of I-94/US 41. This portion of the primary study area is located north of I-94, south of North Avenue, east of US 41 and west of I-43. The area is served by the I-94 interchanges at 35th Street and 25th/26th/ 28th streets. The dense residential Valley Park, Hilltoppers, Merrill Park and Avenues West neighborhoods are located adjacent to the I-94 corridor in this area. These neighborhoods are some of the city's most fragile due to high rates of poverty and continued population declines. The area contains a high percentage of minorities, particularly black/African American residents (see Sections 2.2.1.3 and 2.2.1.4 which include race and poverty statistics, respectively, within the primary study area).

The City of Milwaukee's *Near West Side Area Plan* covers a number of planning districts that are located in this area. The plan identifies catalytic projects that are intended to improve the quality of existing commercial and residential areas in the Near West Side planning area (City of Milwaukee 2004). The revitalization of the 27th Street corridor is identified as a catalytic project in the plan. The corridor was once a main neighborhood shopping district, but fell into decline after the 1950s. The *Near West Side Area Plan* says the economic revitalization of the 27th Street corridor is of strategic importance to the Near West Side renaissance (City of Milwaukee 2004). The plan seeks to revitalize the street into a central node of activity for the Near West Side community.

The City of Milwaukee prepared a redevelopment plan for the Avenues West (City of Milwaukee 2008)neighborhood in September 2008 as a result of the recommendations in the *Near West Area Plan*. The redevelopment plan presents investment strategies for commercial and housing uses throughout the Avenues West neighborhood. A central component of the plan is the creation of a South of Highland (SoHi) Main Street District along 27th Street.

Large industrial areas, associated with the Miller Valley and the southern tail of the 30th Street Industrial corridor, are located within this portion of the primary study area. The Miller Valley is the original site purchased by Frederick Miller in 1855 for the Miller Brewing Company. Today, the site is still home to the Milwaukee Brewery for the MillerCoors Company. Almost 720 employees work in the Miller Valley (MillerCoors 2014).

The City of Milwaukee is working to redevelop the 30th Street Industrial Corridor into a modern employment center and economic hub, similar to efforts that have been taken for the Menomonee Valley. The 30th Street Industrial Corridor extends south from Hampton Avenue to Highland Boulevard and is centered along a railroad corridor between 35th and 27th streets. The very southern end of the 30th Street Industrial Corridor is located with this portion of the primary study area and is anchored by a Harley-Davidson manufacturing site. According to local stakeholder input, the US 41 corridor provides an important access point to the regional freeway system for the business in the 30th Street Industrial Corridor for shipping and access to employees.

Most of the city's redevelopment efforts for the 30th Street Industrial Corridor are taking place on the northern end outside the primary study area where larger parcel sizes are available. The city has taken many steps to prepare a large tract of land for industrial development at Century City, which is the core component of the corridor's revitalization. Century City is located between Capitol Drive and Burleigh Street. Beginning in2013, the city began seeking prospective developers interested in building on parcels that are up to 20 acres in size at Century City.

The Forest County Potawatomi Community purchased the former Concordia Campus in Milwaukee's Concordia neighborhood in 1990. Currently, the tribe is in the process of redeveloping the 11-acre former campus into offices, business incubators, educational facilities and other uses. The tribe uses a portion of the campus for its tribal related functions. It recently opened Southeastern Wisconsin's first carrier neutral data center, Data Holdings, LLC, which was a $33 million investment.

Southeast of I-94/US 41. This portion of the primary study area is generally located east of the Milwaukee/West Milwaukee border, south of I-94, north of Lincoln Avenue and west of the downtown central business district. This area includes the Menomonee Valley industrial area, several residential neighborhoods (Layton Boulevard West, Clarke Square and Muskego Way), the Silver City and Cesar Chavez commercial corridors, and the Reed Street Yards and Walker's Point/Fifth Ward redevelopment areas. The area is served by the 35th Street and 25th/26th/28th Street interchanges.

Beginning in the 1990s the City of Milwaukee and the Menomonee Valley Partners set forth a vision for the revitalization of this former industrial corridor. In 1998, a land use plan for the Valley was prepared to initiate the redevelopment process. The plan recommended revitalizing the Menomonee Valley as an urban industrial and mixed-use district with an emphasis on industrial uses in the west and central portions and a mixture of uses on the east side (City of Milwaukee 1998). The plan identified several priority development areas including the redevelopment of the former railroad shops site on the west end that is now the Menomonee Valley Industrial Center.

The redevelopment efforts over the past 10 years have resulted in 33 companies that moving to or expanding in the Valley and the creation of 4,700 jobs (Menomonee Valley Partners, Inc. 2014). According to local stakeholder interviews, the Menomonee Valley businesses employ many residents who live in adjacent neighborhoods and benefit from the ability to walk or take transit to work. Also, the recreational and entertainment amenities located within the Menomonee Valley draw 10 million visitors to the area annually and have helped to revitalize the adjacent neighborhoods. Local recreation and entertainment uses include the Hank Aaron State Trail, the Harley-Davidson Museum, Miller Park, Potawatomi Hotel and Casino, Marquette Valley Fields, Mitchell Park Horticultural Conservatory, and various other venues, events and tours that take place throughout the year. Most recently, the Menomonee Valley celebrated the opening of Three Bridges Park, a 24-acre park located next to the Menomonee River between the 35th Street and 27th Street viaducts.

According to stakeholder input, most of the recommendations from the 1998 plan have been implemented or are in the process of being implemented. As a result, the City of Milwaukee and Menomonee Valley Partners have partnered to initiate an update to the valley plan. They expect the updated plan will focus on strategies and recommendations for the revitalization of the St. Paul Avenue/Menomonee River corridor and strategies to improve connections to adjacent neighborhoods.

The Layton Boulevard West neighborhood is located immediately south of the Menomonee Valley in Milwaukee's near south side. The area contains a large Hispanic population that is increasing. According to Layton Boulevard West Neighbors, Inc. (LBWN), the Hispanic population has increased from 42 percent to 66 percent between 2000 and 2010. LBWN is a community development organization that was founded in 1995 by the School Sisters of St. Francis to revitalize the area, promote economic development and housing rehabilitation and development.

The Layton Boulevard West neighborhood has experienced a high rate of housing foreclosures since the late 2000s as part of the national foreclosure crisis. According to LBWN, the neighborhood has 62 existing foreclosures and 160 more are pending in the courts. In spite of these challenges, the Layton Boulevard neighborhood has

been experiencing renewed interest from young professionals and families that are attracted to its central location, affordable housing and walkable neighborhoods. According to LBWN, a strong demand for housing in the neighborhood continues and property values are rising. LBWN has a program for purchasing and rehabilitating homes and usually has multiple purchase offers. A typical home sells for $90,000. Other projects in the area that have contributed to an improved quality of life include the new Urban Ecology Center branch, the Valley Passage, and the Silver City Townhomes development. The Valley Passage reconnected the pedestrian link between the Layton Boulevard neighborhood and the Menomonee Valley. LBWN was a recipient of the Zilber Neighborhood Initiative in 2010 and a Quality of Life Plan was created to help improve the neighborhood (Zilber Neighborhood Initiative 2011). The Clarke Square neighborhood also completed a Zilber Quality of Life Plan (Zilber Neighborhood Initiative 2009)and the Muskego Way neighborhood is working with the Milwaukee Local Initiatives Support Corporation (LISC) on a strategic neighborhood plan.

The Silver City commercial corridor is located within the Layton Boulevard neighborhood along National Avenue between approximately 43rd and 30th streets. The corridor has become known for its mix of ethnic restaurants and shops along National Avenue. According to LBWN, business turnover is decreasing, but the corridor is still fragile.

Two redevelopment districts are located to the east of I-43. The Walker's Point/Fifth Ward area has seen an influx of new investment that has spilled over from the Historic Third Ward neighborhood. Development projects often include renovations of former warehouse space with a mixture of residential and commercial uses. In addition, the City of Milwaukee has created a $6.2 million TID to redevelopment the Reed Street Yards. The redevelopment plan will create a water research and technology business park adjacent to the planned Milwaukee Water Council Accelerator building. The TID will provide public infrastructure, remove obsolete structures and facilitate environmental remediation.

Downtown Milwaukee. Exhibit 13 outlines the central business district within downtown Milwaukee. The district is generally located east of I-43, west of Lake Michigan, south of McKinley Avenue/Knapp Street and north of the Milwaukee harbor. According to a market profile of downtown Milwaukee (Progressive Urban Management Associates 2012):

- About 81,000 workers were employed in downtown in 2010, an increase of 3.8 percent since 2000.
- Downtown contains 12.1 million square feet of office space, which accounts for more than 43 percent of the Milwaukee area office market.
- The downtown retail market contains 780,000 square feet of space.
- Since 2000, downtown households and population have increased by 27.2 percent and 25.5 percent, respectively.
- As of 2010, nearly 13,300 housing units were located in downtown.
- Annually, 4.3 million visitors attend events at the BMO Harris Bradley Center, Henry Maier Festival Park and the Wisconsin Center District.
- More than $1.7 billion in investment has taken place in downtown since 2005.

According to local stakeholder input, downtown is very stable, with relatively slow but ongoing net growth. See stakeholder interview with downtown stakeholders in Appendix D.) The younger generations are very interested in living in downtown and this is encouraging new housing developments. Currently, the apartment market is very strong in downtown Milwaukee, according to downtown stakeholders.

In 2010, the city of Milwaukee adopted the *Downtown Area Plan* (City of Milwaukee 2010b). The plan updates the original 1999 *Milwaukee Downtown Plan*, and builds on the policies and projects from the original plan to provide a vision for the future of downtown Milwaukee. The *Downtown Area Plan* recommends land use and development policies for downtown districts and it identifies eight catalytic projects to promote redevelopment within the downtown.

Downtown has three main neighborhood areas: East Town, Westown and the Historic Third Ward. East Town is located east of the Milwaukee River. Many people consider this to be the true central business district of downtown because it has the largest concentration of Class A office space and it contains downtown's high-end hotels and residential housing.

Westown is located on the west side of the Milwaukee River. It is characterized by large-scale developments that occupy large tracts of land. It includes several cultural, entertainment and government facilities such as the BMO Harris Bradley Center, the Wisconsin Center District, U.S. Cellular Arena, Milwaukee Public Museum, Milwaukee County Courthouse, and the Shops of Grand Avenue. The office and residential markets have struggled in compared with the other areas of downtown. However, downtown stakeholders say the revitalization of the Wisconsin Avenue corridor is gaining some momentum and is starting to see some investment in housing (see Appendix D).

The Historic Third Ward is Milwaukee's former warehousing district that has been converted into a popular mixed-use residential/commercial district. The resident population has grown from 490 in 2000 to just over 1,530 in 2010. The Third Ward contains several mixed-use buildings with first-floor retail and residential use on the upper floors. It also has many specialty retail stores and is the location of the Milwaukee Public Market.

Downtown has many redevelopment districts. On the north end, The Brewery is a 20-acre historic rehabilitation project that is transforming the former Pabst Brewing site into a mixed-use urban district with educational facilities, offices, apartments, a hotel and restaurants. In close proximity to The Brewery is the Park East corridor that contains over 60 acres of land that was formerly occupied by a freeway. The corridor has seen many new investments such as the Manpower office building, the Flat Iron hotel and the The Moderne residential development. The county is evaluating options for the remaining land on the west side of the corridor. They are considering marketing the parcels for private development or reserving the land for a potential public/quasi-public use like the BMO Harris Bradley Center.

The Lakefront Gateway project is a recent project that was initiated by the state and City of Milwaukee. As part of the reconstruction of the Lake Interchange on I-794, WisDOT is going to move freeway ramps near the Hoan Bridge, which will free up land for development. At the same time, the City of Milwaukee will construct new local roads, including an extension of Lincoln Memorial Drive from Clybourn Street to Chicago Street. The freeway and local street projects will facilitate a new Northwestern Mutual Life Insurance office tower, a proposed high-rise Couture hotel/apartment tower, and a planned 18-story office building at 833 E. Michigan St. The project could also help to infill vacant and underutilized parcels in the Third Ward including the parking lots at the Italian Community Center.

Secondary Study Area Development Trends

This section provides a general overview of the land use and development trends for the secondary study area. Exhibit 14 shows the existing and planned sewer and water services for the secondary study area provided by SEWRPC. Exhibit 15 shows the economic activity centers within the secondary study area.

Secondary Study Area - Milwaukee County

This section provides a description of the land use and development trends for the Milwaukee County portion of the secondary study area, focusing on areas of the county that were not previously described as part of the primary study area. The following subsections describe the northern, western and southern portions of the county.

Northern Milwaukee County. Northern Milwaukee County includes the north side of the City of Milwaukee and the North Shore suburban Milwaukee County communities of Shorewood, Whitefish Bay, Glendale, Fox Point, Bayside, River Hills and Brown Deer.

The residential neighborhoods within these areas range from very affluent North Shore suburban communities to some neighborhoods that are more fragile or even distressed within the City of Milwaukee. The neighborhoods

within the City of Milwaukee, Shorewood and Whitefish are fairly dense and were mostly developed on an urban street grid. The North Shore communities of Glendale, Fox Point, Bayside and Brown Deer contain mostly medium density housing and tend to have a more suburban street pattern. The Village of River Hills is the only Milwaukee County suburb with a low density development pattern, with many home sites on five or more acres.

Northern Milwaukee County contains several major commercial nodes. The Bayshore Town Center near I-43 and Silver Spring Drive is the main regional shopping center in this area. It underwent a major redevelopment in 2006 that nearly doubled the square footage of the mall. Other community scale commercial nodes include the Brown Deer Shopping Center, River Point Shopping Center, Capitol Drive, Midtown and the former Northridge Mall/Granville Station area. Several neighborhood level commercial districts are present such as the Mill Road Shopping Center, the Fox Point Shops, the Whitefish Bay commercial district along Silver Spring Drive and the Historic King Drive district.

Northern Milwaukee County contains a relatively large amount of industrial land uses. The 30th Street Industrial Corridor, which includes the Century City redevelopment area, creates a spine of industrial development through the central city. The Estabrook Corporate Park, Glendale Technology Center and Riverworks are located on the east side of I-43. Other industrial clusters include the Teutonia Avenue and Havenwoods areas in the City of Milwaukee and the Milwaukee Industrial Park on the city's northwest side. The Milwaukee Industrial Park is one of the largest industrial parks in the region with over 1,200 acres of land. The Village of Brown Deer also contains several industrial businesses.

Western Milwaukee County. Western Milwaukee County outside the primary study area includes the west sides of West Allis and Wauwatosa. These areas contain established residential neighborhoods that start to transition to a more suburban layout. The WIS 100 corridor is a spine of economic activity through these communities and contains a concentration of mostly commercial land uses and some industrial land uses. Mayfair Mall is located along WIS 100 in Wauwatosa.

Wauwatosa contains the Milwaukee County Research Park and the Milwaukee County Medical Center at the Milwaukee County Grounds, which are regionally significant employment centers. A new University of Wisconsin-Milwaukee engineering school is being constructed at a Milwaukee County Grounds site east of Highway 45 and north of W. Watertown Plank Road. A large retail development was recently built along US 45 in the redevelopment area known as the Burleigh Triangle in Wauwatosa.

The WIS 100 corridor is an important economic corridor to the City of West Allis. It contains a large Quad Graphics facility just south of I-94 as well as some additional industrial development to the north and south of Greenfield. Commercial and retail uses extend the length of the corridor. West Allis' has been using TIF to encourage business development along the corridor. The city's comprehensive plan identifies several redevelopment areas off of WIS 100 to attract additional business development and redevelopment (City of West Allis 2011).

Southern Milwaukee County. Southern Milwaukee County includes the far south and southeast sides of the City of Milwaukee, the south suburban communities (Greenfield, Greendale and Hales Corners), the South Shore communities along Lake Michigan (St. Francis, Cudahy and South Milwaukee) and the cities of Oak Creek and Franklin.

The far south side of the City of Milwaukee contains fairly stable and established residential neighborhoods with some commercial districts lining the main arterials. The 27th Street corridor is the largest commercial corridor in the area. Other economic centers in Milwaukee's south side include the area around the General Mitchel International Airport and the Port of Milwaukee.

The south suburban communities of Greenfield, Greendale and Hales Corners are established communities dominated by residential uses. The Southridge Mall area in Greenfield is the main area of economic activity in this portion of the county.

The South Shore communities of St. Francis, Cudahy and South Milwaukee are relatively small communities with established land uses. St. Francis is primarily composed of residential uses with some recent development of

multifamily housing along the shore of Lake Michigan. Cudahy and South Milwaukee have historic roots with manufacturing and still maintain an industrial presence.

Franklin and Oak Creek have been a substantial source of economic development and residential growth for Milwaukee County as these communities are large in geographic scale and still have vacant land available for development. Both communities have extensive residential areas, industrial areas and commercial corridors. Northwestern Mutual built a large office campus in Franklin in 2002 and completed a second phase in 2008. Between the two phases, over 900,000 square feet of office space has been constructed. The campus is a regional employment draw. The 27th Street corridor, which is the border of the two communities, contains a concentration of retail businesses and is the focus of a joint planning effort between the two communities to attract additional investment on vacant land and through redevelopment. Franklin contains three business/industrial parks: Franklin Business Park, Franklin Industrial Park and the North Cape Industrial Park. Oak Creek contains the Northbranch Industrial Park, which is the second largest industrial park in terms of acreage in the region. Starting in 2014, the Oak View Business Park in Oak Creek will be available for development sites.

Secondary Study Area - Waukesha County

Waukesha County contains a mixture of urbanized areas and non-urbanized areas. According to the Waukesha County comprehensive plan, urban land uses accounted for 35 percent of the county's land area in 2000 and nonurban uses accounted for 65 percent of the land area (Waukesha County 2009). Residential land uses made up the largest urban land use category in the county, accounting for 59 percent of the urbanized area. Agricultural land uses were the largest nonurban land use category, encompassing about 47 percent of all nonurban lands. According to the county's comprehensive plan, residential development has been responsible for the most substantial land use change in the county. Between 1960 and 2000, over 47,000 acres of land was converted to residential uses and over 100,000 households were constructed (Waukesha County 2009). Exhibit 14 shows the existing and planned sewer and water services for the secondary study area. This map helps to show the urban and nonurban areas of Waukesha County. The most highly urbanized areas of Waukesha County are concentrated on the eastern side of the county in New Berlin, Brookfield, Menomonee Falls, Waukesha and Pewaukee. The Hartland-Delafield-Oconomowoc area in western Waukesha County is also urban, but the intensity of development in this area is less compared with eastern Waukesha County communities.

The urbanized areas of Waukesha County contain large areas of medium- to low-density residential areas interspersed with industrial and commercial centers. The primary commercial and industrial job centers are located along major transportation corridors such as I-94 and US 45, and local arterials such as Bluemound Road and Moorland Road. See Exhibit 15 for economic activity centers. The Bluemound Road corridor in Brookfield contains the largest concentration of commercial uses in the county with office uses and retail uses including the Brookfield Square mall. The largest industrial centers are located in New Berlin, Muskego and Menomonee Falls, and along the US 45 corridor in Butler and Brookfield. More recent industrial development has occurred in Pewaukee and Sussex.

The sewered portions of Waukesha County communities that border Milwaukee County – Brookfield, Menomonee Falls and New Berlin – are largely built out, although some undeveloped parcels remain. These second-ring suburbs are expected to continue to be desirable locations for new office, retail and industrial development where infill or redevelopment sites are available. According to an interview with a local real estate professional, developers seek infill sites that have existing sewer and water services and are in close proximity to the existing population and workforce base. Locations in western Waukesha County are less desirable for commercial and industrial development because it is farther from the population base. See stakeholder interview with David Merrick, Irgens in Appendix C.)

Western Waukesha County has several relatively small communities and still has large tracts of undeveloped land remaining. However, there are many constraints that limit the intensity of development in this area, including limited sewer and water services, large environmental corridors, and as discussed above, greater distance to the existing concentrations of population and labor.

2.2.3 Natural and Historic Resources

This section discusses the natural and historic resources within the primary and secondary study areas.

2.2.3.1 Primary Study Area

Exhibit 16 shows a map of the natural, recreational and historic resources within the primary study area.

The primary study area lies within the Menomonee and Milwaukee River watersheds. These watersheds lie east of the subcontinental divide and drains to Lake Michigan. Due to extensive urbanization, the remaining natural, biological and recreational resources within the primary study area generally lie within narrow bands of environmental corridors along the Menomonee River, Honey Creek and Milwaukee River. The environmental corridors contain public parks and recreational trails and are owned by Milwaukee County, which preserves the resources from development. A few critical species habitat areas are located along the Menomonee River environmental corridor and within the VA campus.

MMSD and its partners have been working to reduce flooding along the Menomonee River. Extensive flooding that occurred in Milwaukee County in 1997, 1998 and 2000 caused $96 million of damage to homes, businesses and neighborhoods (MMSD 2006). MMSD completed extensive work at the Milwaukee County Grounds to capture and store potential floodwater in one large basin that covers about 65 acres and holds 315 million gallons of water. A half-mile-long underground tunnel that is 17 feet in diameter channels excess water from Underwood Creek into the basin. From there, the water is slowly released into the Menomonee River, reducing the risk of flooding downstream (Milwaukee Metropolitan Sewerage District 2014). MMSD also completed the Hart Park project to reduce the risk of flooding in downtown Wauwatosa and downstream in Milwaukee along the Menomonee River. In addition, MMSD is in the process of removing 1,100 feet of a steep concrete bed in the Menomonee River north of Wisconsin Avenue and north of the I-94 study limits, a project that will eliminate a barrier to fish and wildlife passage. Stream restoration will open up 17 miles of river and 20 miles of tributaries, allowing fish to reach the Lepper Dam in Menomonee Falls. The USACE is reviewing the feasibility of removing the remaining 3,700-foot section of concrete lining downstream of Wisconsin Avenue and 300 feet of lining south of I-94.

Several public parks are located throughout the primary study area. Most parks are owned and managed by Milwaukee County including Mitchell Park and Washington Park. Several smaller parks, playgrounds and playfields are owned by the local communities. Milwaukee County has an extensive system of bike trails associated with the Oak Leaf Trail system. Portions of the trail are located within the primary study area along the Menomonee River corridor. The Hank Aaron State Trail is also located in the primary study area to the south of I-94. It bisects portions of West Allis and travels through the Menomonee Valley in Milwaukee.

The primary study area contains several properties that are listed or eligible for listing on the National Register. It also contains the following historic districts:

- Historic Layton Boulevard
- Walkers' Point
- Concordia
- McKinley Boulevard
- Highland Boulevard
- North Sherman Boulevard
- West Washington/North Hi-Mount Boulevards

As discussed in EIS Section 3.24, Historic Properties, WisDOT has identified the following historic resources within the immediate vicinity of the project corridor:

- Soldiers' Home National Historic Landmark (NHL)
- Soldiers' Home Historic District
- Soldiers' Home Reef NHL
- Calvary Cemetery, eligible for listing on the National Register
- Story Hill Residential Historic District 1, eligible for listing on the National Register
- Story Hill Residential Historic District 2 and 3, eligible for listing on the National Register.

Exhibit 16: Primary Study Area - Natural, Recreational and Historical Resources

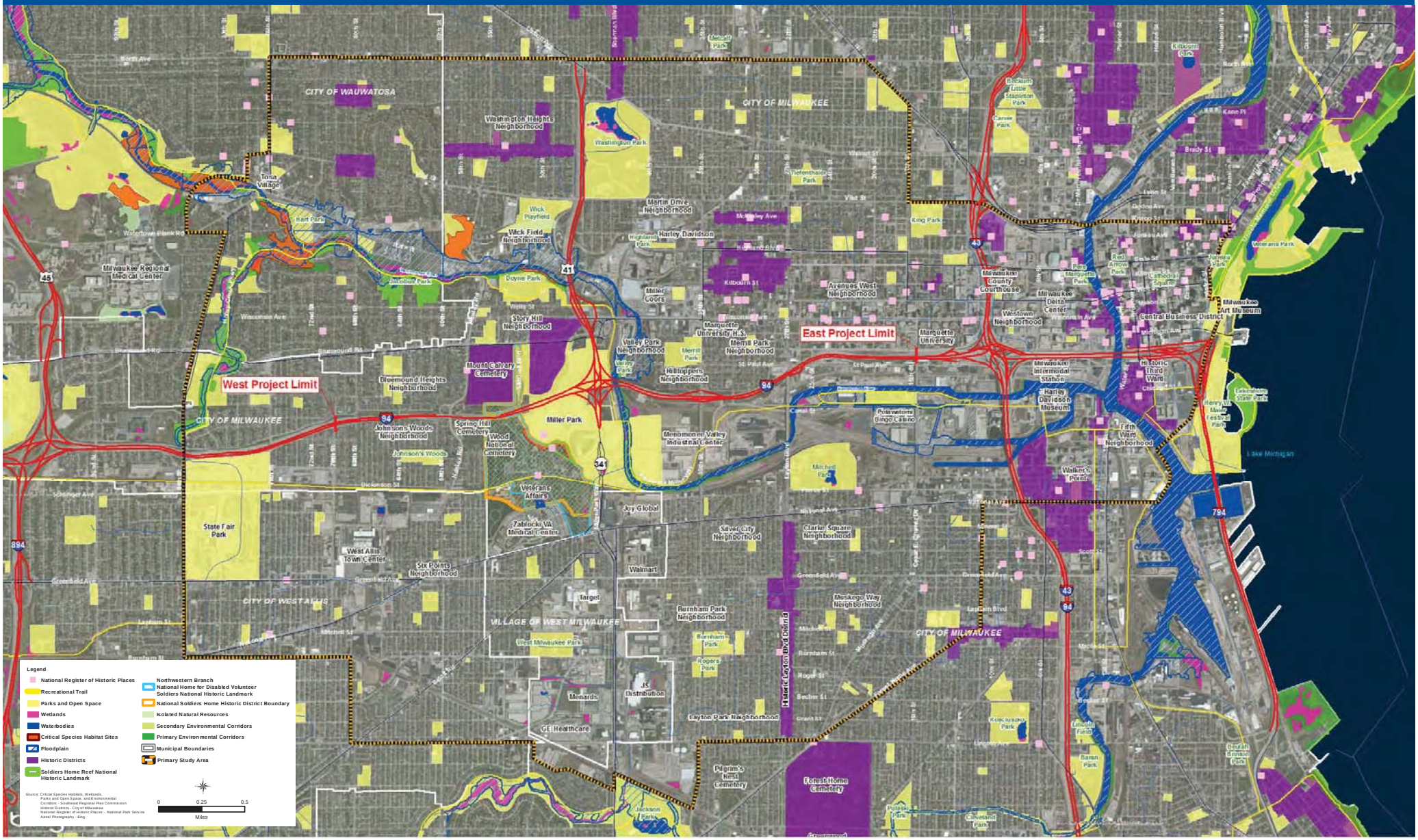
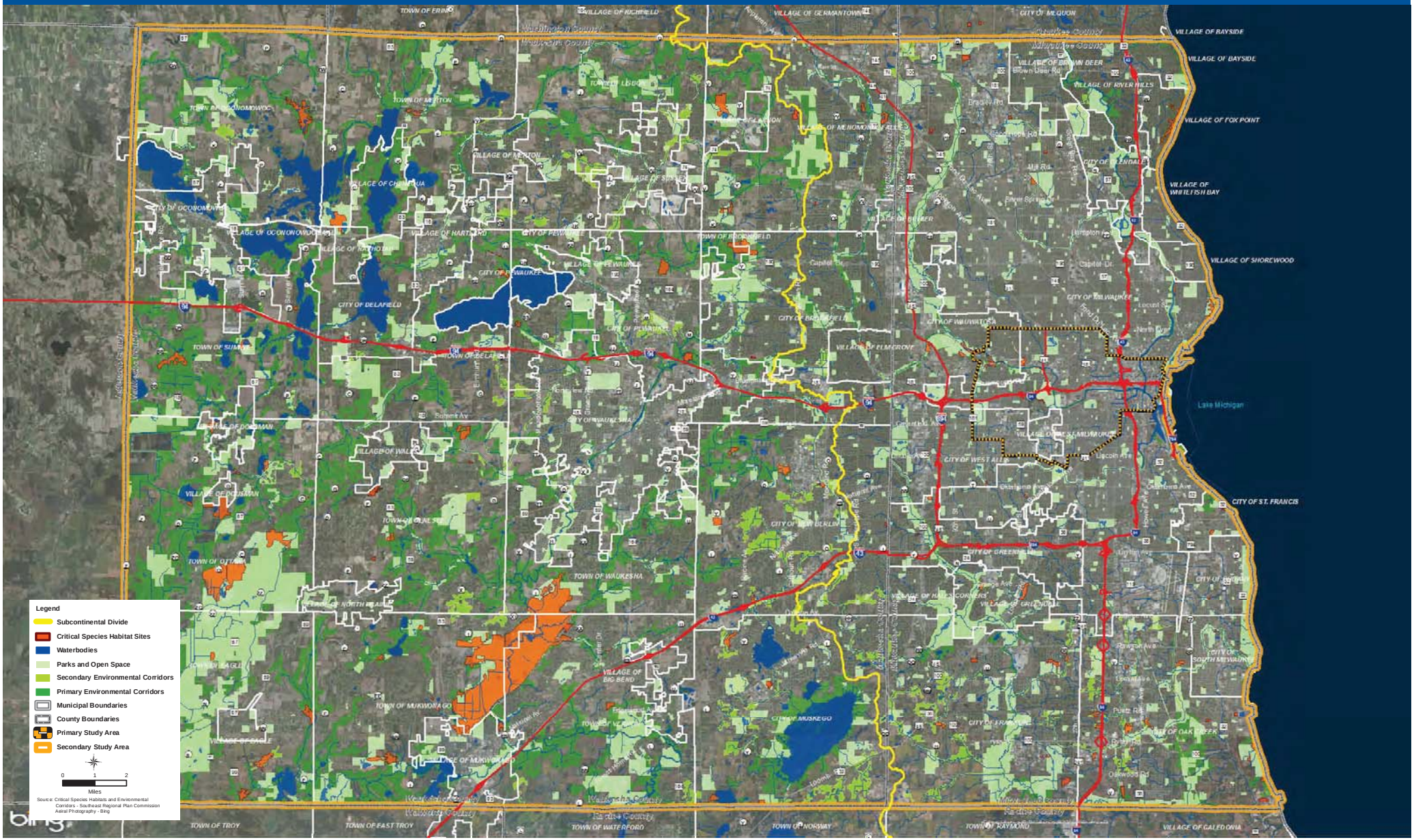


Exhibit 17: Secondary Study Area - Natural Resources



2.2.3.2 Secondary Study Area

This section discusses the natural and historic resources for the secondary study area. Exhibit 17 shows a map of the natural resources within Milwaukee and Waukesha counties.

Milwaukee County

Milwaukee County contains all or parts of seven natural watersheds. These include the entire Kinnickinnic River and Oak Creek watersheds; portions of the Fox River, Menomonee River, Milwaukee River, and Root River watersheds, and the areas draining directly to Lake Michigan (SEWRPC 2011). The subcontinental divide passes through the extreme southwestern corner of the county. The divide separates the Great Lakes-St. Lawrence River drainage basin from the Mississippi River drainage basin. All watersheds in Milwaukee County, except the Fox River, are located within the Great Lakes-St. Lawrence River drainage system.

Milwaukee County is highly urbanized, but still maintains a diverse natural resource base including the shores of Lake Michigan, major rivers and streams, small inland lakes and areas of quality woodlands and wetlands. According to SEWRPC, the most significant remaining natural resources in the county are contained in environmental corridors. The primary environmental corridors in the Milwaukee County are primarily located along major stream valleys and along the Lake Michigan shoreline and encompassed about 9,057 acres , or about 5.8 percent of the county, in 2000 (SEWRPC 2011). Secondary environmental corridors encompassed about 3,421 acres and isolated natural resource areas encompassed about 1,966 acres, in 2000 (SEWRPC 2011).

According to SEWRPC, Milwaukee County contains 103 miles of named perennial rivers and streams. Several surface waters in the county are considered impaired waters under Section 303(d) of the Clean Water Act. They include sections of the Kinnickinnic River, Menomonee River, Milwaukee River, Oak Creek, Root River, the Milwaukee Harbor estuary and outer harbor and several streams. (SEWRPC 2011)

Wetlands encompassed about 5,279 acres or 3.4 percent of the county area in 2000 (SEWRPC 2011). Many of the wetlands are contained within narrow bands along environmental corridors. Larger wetland areas can be found in Franklin and Oak Creek. In 2000, woodlands encompassed 4,564 acres, or about 3 percent of the county (SEWRPC 2011). According to SEWRPC, many of the wetland and woodland areas are impacted by invasive plant species.

Within Milwaukee County a total of 55 known natural areas have been identified, encompassing about 2,891 acres or 1.9 percent of the total area of the county. Also, a total of 55 critical species habitat sites have been identified in Milwaukee County encompassing about 796 acres, or 0.5 percent of the county.

As of 2006, there were 717 park and open space sites encompassing 20,809 acres of land in Milwaukee County (SEWRPC 2011). This includes all lands owned by a public agency and privately owned outdoor recreation sites. The majority of park and open space sites in the county are owned and managed by Milwaukee County. As of 2005, Milwaukee County owned 155 park and open space sites, encompassing 14,835 acres or 9.7 percent of the county's land area (SEWRPC 2011). These sites include 15 major parks and 10 major parkways.

Milwaukee County has a wealth of historic resources. In 2010, there were 246 historic places and districts in the county listed on the National Register of Historic Places and the State Register of Historical Places. According to SEWRPC, this is only a small fraction of the buildings, structures, and districts listed in the Wisconsin Architecture and History Inventory that could be eligible for historic designation (SEWRPC 2011). In 2010, 23,360 properties in Milwaukee County were listed in the Wisconsin Architecture and History Inventory (SEWRPC 2011).

As of 2010, there were 589 known prehistoric and historic archaeological sites in Milwaukee County listed in the State Historical Society's Archaeological Sites Inventory, including prehistoric and historic camp sites, villages, and farmsteads; marked and unmarked burial sites; and Native American mounds (SEWRPC 2011).

According to the 2012 Census of Agriculture, Milwaukee County had 82 farms containing 4,563 acres of land in 2012. The total market value of agricultural products sold in 2012 was $7,616,000. The majority of these sales were attributed to the nursery, greenhouse, floriculture and sod commodity category.

Waukesha County

The subcontinental divide bisects Waukesha County in a north-south direction. The divide separates the Great Lakes-St. Lawrence River drainage basin from the Mississippi River drainage basin. It has presents legal constraints for communities on the western side of the divided because there are laws, with some exceptions, that prohibit the diversion of any substantial quantities of Lake Michigan water across the divide. The Menomonee River and Root River watersheds that lie east of the subcontinental divide drain to Lake Michigan. The two other watersheds in the county are the Fox River and Rock River watersheds, which lie west of the subcontinental divide and drain to the Mississippi River. The Fox River encompasses the largest area of Waukesha County, accounting for about 58 percent of the county's land area. (Waukesha County 2009)

The secondary study area in Waukesha County contains large intact environmental corridors that are generally located along rivers and streams, around inland lakes and the Kettle Moraine. Many glacial features are present in Waukesha County, with vast tracts of these features preserved by state-owned natural areas and state parks. The environmental corridors have been somewhat more impacted by development on the eastern side, in the more urbanized areas of the county.

According to the Waukesha County comprehensive plan, Waukesha County contains the following natural and historic resources:

- 268 miles of perennial streams and 33 lakes
- 105 natural areas, 77 critical species habitats, and 52,652 acres of wetlands
- 28,931 acres of woodlands (found in large contiguous tracts along the Kettle Moraine and in smaller clusters throughout the county)
- 652 sites listed on the NRHP
- 500 historic and prehistoric archaeological sites

The Waukesha County Park System seeks to preserve natural resources and provide recreation opportunities. In 2008, the Waukesha County Park System consisted of 4,858 acres of parkland and 2,786 acres of greenways. (Waukesha County 2009) Other major public park and open space providers in the county include the following:

- The Wisconsin Department of Natural Resources (WDNR) owns 28 sites in the county including the Kettle Moraine State Forest, Vernon Marsh, Big Muskego Lake Wildlife Area, Lapham Peak, the Ottawa Lake Recreation Area, the Pine Woods Campground, and Old World Wisconsin.
- Local municipalities in Waukesha County own 10,058 acres of public parks and facilities.
- Non-profit preservation organizations such as the Waukesha County Land Conservancy own 1,255 acres of land and propose to acquire over 10,600 acres of land in the county.

Waukesha County completed a farmland preservation plan in 2011 and has incorporated it as part of the county's comprehensive plan. The plan recommends the preservation of the best remaining prime agricultural land in agricultural uses, which are located in the northwest and southwest corners of the county.

Nonurban lands in the county decreased by about 46,668 acres, or about 15 percent between 1963 and 1990. (Waukesha County 2009) Most of this loss resulted from the conversion of agricultural land to urban use. Agriculture remains a viable economic sector in Waukesha County. Agriculture has shifted from dairy farming to specialty crop production, orchards, greenhouses, and plant and tree nurseries that are responding to the growing demand for locally grown products in adjacent urban areas. (Waukesha County 2009)

2.3 Steps 3 and 4: Identify Impact-Causing Activities of the Proposed Project Alternatives and Identify Potentially Significant Indirect Effects

Step 3 of the analysis examines the No-build alternative and the Modernization Alternatives, and it identifies impact-causing activities for each alternative. Step 4 builds on Step 3 by identifying the indirect effects that may be caused by the project's impact-causing activities. The two types of indirect effects that are being considered include land use effects and encroachment-alteration effects. The effects are evaluated in greater detail in the next steps (Section 2.4, Steps 5 and 6).

2.3.1 No-Build Alternative

The impact-causing activities of the No-build alternative relate to its lack of action, which does not address the purpose of and need for the project with respect to safety concerns, existing highway deficiencies, and future traffic demand. Under this alternative, congestion and vehicle crashes would continue to increase, resulting in greater travel times and less reliable travel throughout the corridor. Additionally, more commuter traffic would shift to local arterials to avoid the congested freeway, which could diminish the neighborhood and business environments along several corridors in the primary study area by increasing pedestrian-vehicle conflicts.

The No-build alternative could have indirect effects to land use because transportation mobility would decline, hindering economic development potential in the primary study area, and causing development to shift to other areas of the region that are less congested and have more reliable travel times. The No-build alternative also would not present the opportunity to bring the freeway system up to current stormwater management standards, which indirectly affects water quality in adjacent streams and rivers.

2.3.2 Modernization Alternatives

The impact-causing activities of the Modernization Alternatives include the following:

- Adding a new travel lane in each direction.
- Modifying existing interchange access points.
- Encroachment of infrastructure on adjacent resources.

The increased mobility that would result from the project's new travel lanes could influence decisions about local and intraregional development locations. Modifications to existing interchange access points could cause indirect land use effects by changing the economic competitiveness of an area based on whether a Modernization Alternative maintains, increases, or reduces local access to I-94. Encroachment of the I-94 freeway could indirectly affect neighborhood quality of life, the vitality of business corridors, and the quality of natural and historic resources.

2.4 Steps 5 and 6—Analyze the Indirect Effects and Evaluate Assumptions; Assess Consequences and Identify Mitigation Activities

Step 5 evaluates the likelihood and magnitude of the indirect effects for the Modernization Alternatives and the No-build alternative. Step 6 discusses the consequences of the indirect effects identified in Step 5 that may result from the Modernization Alternatives and discusses potential mitigation measures that could be used by WisDOT and other agencies to minimize those effects.

For the purposes of this document, these two steps were combined and are presented by the types of indirect effects that were analyzed for this project:

- Indirect land use effects
  - Related to new travel lanes for the primary study area
  - Related to new travel lanes for the secondary study area
  - Related to interchange modifications for the primary study area
- Indirect encroachment-alteration effects for the primary study area
  - Neighborhoods
  - Businesses
  - Natural resources
  - Historic resources

The following subsections describe the indirect land use and encroachment-alteration effects listed above.

2.4.1 Land Use Effects Introduction

The reason for evaluating a transportation project's land use effects is because several research studies have shown that land use effects can result from improved transportation access that enables faster or more reliable travel between destinations, or by new access to destinations. The most recent research on this topic was published in 2012 by the Transportation Research Board (TRB). The report titled *Interactions Between Transportation Capacity, Economic Systems, and Land Use* analyzed 100 transportation case studies that documented the long-term before-and-after economic impacts of a variety of highway capacity investments (Strategic Highway Research Program 2012). According to the report, case studies confirmed the following typical sequence of land use and economic impacts that occur over time as a result of improved transportation accessibility:

- Land becomes more attractive as a place to live, work or recreate.
- Building construction and investment occurs.
- Residential and employment growth occurs.
- Local property tax revenues rise and sales and income taxes increase.

It should be noted that improved transportation accessibility alone is not enough to cause land use change. As documented in the TRB report, supportive local factors such as availability of land; local government development policies and incentives; availability of complimentary infrastructure (i.e. sewer and water); and local economic conditions affect the magnitude of a transportation project's long-term economic impact (Strategic Highway Research Program 2012). The report states that transportation case studies with supportive local factors generated substantially more positive economic development outcomes. Conversely, transportation case studies that lacked local supporting factors or had distressed economies were associated with fewer economic development results.

Another important consideration that influences the magnitude of land use effects is the extent and maturity of existing transportation infrastructure. As discussed in the NCHRP Report 466, the influence of highway projects on land use diminishes with successive improvements because each new improvement brings a successively smaller increase in accessibility (National Cooperative Highway Research Program 2002). This means that new highways have a much larger effect on land use compared with an existing facility that is expanded.

The following subsections evaluate the land use effects that could result from the project's impact causing activities identified in Section 2.3 and considers the magnitude of those effects as they relate to the presence of supportive local development factors and the maturity of the transportation system.

2.4.2 Land Use Effects Related to New Travel Lanes – Primary Study Area

The following subsections discuss the indirect land use effects related to adding new travel lanes for the primary study area.

2.4.2.1 No-Build Alternative Land Use Effects

Under the No-build alternative, development is likely to occur as planned. However, the economic development potential of the primary study area is expected to be less under the No-build alternative in comparison to the Modernization Alternatives because increasing congestion makes it harder for businesses in the primary study area to compete with other areas of the region that have less congestion.

Developments that would be most affected by the No-build alternative are developments that draw patrons and workers from the regional area. Examples include the Miller Park Way corridor in West Milwaukee, some destinations in West Allis such as the Renaissance Faire and Summit Place office developments and large regional entertainment venues like Miller Park and Potawatomi Hotel and Casino. The redevelopment potential of the 30th Street industrial corridor could also be affected since stakeholders at the June 6, 2013 focus group meeting said this corridor relies on US 41 to access I-94. In downtown, businesses could be affected by reductions in access as a result of increasing congestion since the highly skilled workforce required by the downtown service industry must be able to attract workers from a large regional area. West Allis' future vision for redevelopment of the Milwaukee Mile in State Fair Park would also be affected by the city's ability to attract employees and customers from a large regional area. See Section 2.2.2.2 for more detailed descriptions of these developments.

Under the No-build alternative, a large amount of traffic would continue to divert from the freeway to the local arterials, which diminishes the business environment along several commercial corridors in the primary study area. This effect would increase over time as regional traffic is projected to increase. Arterials with business districts in close proximity to the freeway such as Bluemound Road in Wauwatosa and Milwaukee, Miller Park Way in West Milwaukee, and National Avenue in West Allis and Milwaukee may be most affected by the No-build alternative. The increasing traffic along these arterials makes it more challenging for local communities to implement their land use plans for these areas, resulting in less investment and fewer employment opportunities.

2.4.2.2 Modernization Alternatives Land Use Effects

Stakeholder feedback gathered for this analysis indicates that existing congestion along I-94 reduces the area's accessibility, which diminishes the economic development potential of the primary study area. At the June 6, 2013, focus group meeting, several economic development professionals and a real estate developer who represent areas in West Allis, Wauwatosa, West Milwaukee and Milwaukee, stated capacity expansion was needed because congestion along I-94 makes it harder to market properties within the primary study area and to compete with other locations in the region that have less congestion. Follow-up interviews with other local private-sector real estate professionals (see Appendix C) also found that additional capacity on the freeway would help attract more development to the primary study area. The interviewees stated that some businesses avoid primary study area locations (including downtown) because they are concerned about attracting employees who do not like to travel along the I-94 corridor due to its congestion. The economic development director for the downtown Milwaukee Business Improvement District also reported that improved traffic flow between downtown and the western suburbs would help existing downtown businesses recruit employees and would encourage more business owners to consider downtown locations (see Appendix D).

Based on stakeholder feedback, the study team determined that improved mobility and travel time reliability along I-94 from new travel lanes would facilitate development within the primary study area because people and businesses would not be detracted from the area by traffic congestion. As a result, improved mobility could have the following effects within the primary study area:

- **Maintain the economic competiveness of the existing business districts and neighborhoods.**
  This effect could reduce residential, commercial and industrial vacancy rates within existing developments by encouraging more people and businesses to locate within the primary study area; facilitate the movement of freight; and support neighborhood revitalization efforts. Exhibit 13 shows the location of existing commercial corridors, industrial areas and neighborhoods.

- **Encourage redevelopment of former industrial areas and underutilized parcels.**
  This effect could facilitate higher density residential and commercial land uses that are planned for some areas within the primary study area. Several redevelopment areas within the primary study area are shown on Exhibit 13. Some examples include the Renaissance Faire and Summit Place developments in the West Allis Six Points area; retail and industrial uses along Miller Park Way in West Milwaukee; the St. Paul Avenue corridor in Milwaukee's Menomonee Valley; and various redevelopment areas in downtown Milwaukee such as the Lakefront Gateway, The Brewery, Park East and Reed Street Yards.

- **Improve the business environment along local arterial streets.**
  Traffic simulation models developed for the study corridor indicate that adding new travel lanes to the freeway would divert some traffic from local arterials to the freeway. Less congestion along local arterials could improve the business environment along arterial corridors by improving pedestrian mobility and safety, and creating fewer conflicts between pass-through commuter traffic and local traffic. Stakeholder feedback indicates that this effect is not likely to change the types or sizes of businesses located along these corridors, but the study team determined it could increase customer patronage of the businesses and ultimately reduce commercial vacancy rates. The Double Deck alternative could have a more positive effect on business corridors compared with the At-grade alternative because traffic analyses show that more traffic would divert to the freeway from the local arterials under the Double Deck alternative. The At-grade alternative would also place additional traffic on local arterials because the I-94 interchange at Hawley Road would be closed, or only partial access to and from the west would be provided. Business corridors that are particularly affected by high traffic volumes include Bluemound Road in Wauwatosa and Milwaukee; Miller Park Way in West Milwaukee; Greenfield/National Avenue in West Allis; and National Avenue in Milwaukee. Exhibit 13 shows the commercial corridors located along these arterial corridors.

- **Support the vitality of the numerous regional cultural, recreational and entertainment venues.**
  The primary study area has numerous cultural, recreational and entertainment venues that draw visitors from the region and beyond. Because these venues draw from a large regional area, accessibility is a key factor in their long-term viability. Stakeholder input has indicated that these venues create a synergy with local economic development and neighborhood revitalization efforts. Of note are the venues within and around the Menomonee Valley such as Miller Park, Potawatomi Hotel and Casino, Mitchell Park Horticultural Conservatory, the Hank Aaron State Trail and the new Three Bridges Park. These venues are within close proximity to adjacent residential areas that have ongoing neighborhood revitalization efforts such as Avenues West, Layton Boulevard West and Clarke Square. See Exhibit 13 for the locations of some of these venues and the locations of neighborhood revitalization areas. The venues help improve the quality of life for adjacent dense, urban residential areas by providing recreational opportunities and by bringing in potential customers to support local businesses. This will benefit environmental justice populations since many of these neighborhoods contain high percentages of low-income and minority residents.

Transportation alone cannot cause land use change; therefore, the study team evaluated whether other local factors are present that support development within the primary study area. Based on the research conducted in Section 2.2.2.2, Development Trends, the study team found that the communities within the primary study area have policies and plans in place that support local economic development and neighborhood revitalization. All the communities in the primary study area utilize tax increment financing (TIF) districts and other tools to assemble land and provide needed infrastructure to encourage development. Also, several efforts are being made to revitalize urban neighborhoods and existing commercial corridors within the primary study area including the use of Business Improvement Districts, target investment neighborhoods (TINs) and various home improvement

programs. Many of the efforts have been successful, as evidenced by employment growth in some areas of the primary study area (West Milwaukee and West Allis) and increasing population in some of the primary study area census tracts. See Section 2.2.1 for more information about socioeconomic trends.

Although adding additional travel lanes would help facilitate planned development in the primary study area, the magnitude of this effect is not expected to be substantial. The primary study area is a fully developed urban area with established land use patterns. It also has a mature transportation system that is composed of an extensive arterial network and numerous connections to the regional freeway system. As a result, the incremental mobility provided by new travel lanes in this context is not likely to be great enough to substantially change land use patterns within the primary study area. This is supported by research discussed in Section 2.4.1 that has shown the extent of indirect land use effects is influenced by the maturity of the regional transportation system; and greater effects are associated with new roads compared with existing roads that are expanded (National Cooperative Highway Research Program 2002) (Boarnet and Haughwout 2000).

Consequences of the Modernization Alternative Land Use Effects

Based on stakeholder feedback, the study team determined that planned development that may be facilitated by the Modernization Alternatives would generally be seen as positive and would help implement land use plans and economic development goals within the primary study area. Planned redevelopment and neighborhood revitalization would increase local tax bases and help pay for the cost of public services that are already in place.

Redevelopment that could be facilitated by the Modernization Alternatives would also increase the availability of goods and services and employment opportunities within close proximity to a large population base in the primary study area. This could benefit minority and low-income populations because most businesses within the primary study area are accessible by local transit services and in some cases by walking and biking. Furthermore, redevelopment and infill development help maintain the viability of existing urbanized areas and reduce the pressure to develop in outlying areas of the region.

Research has shown that local government development policies play a large role in facilitating development and are essential for positive indirect land use and economic development effects to occur (Strategic Highway Research Program 2012). Many local, state, and federal programs are available for local governments to encourage redevelopment efforts, business investment, and neighborhood revitalization:

- Tax increment financing
- Business lending programs
- Site identification and selection services
- Business Improvement Districts
- Façade grants
- Brownfield grant programs
- State and federal tax credit programs
- Small-business revolving loan funds
- Workforce development and training programs
- Neighborhood investment and housing rehabilitation programs

Based on land use trend research discussed in Section 2.2.2, the study team found that many of these tools are already being utilized by the local communities within the primary study area to create jobs and reuse lands that would otherwise be underutilized or vacant.

Development that may be facilitated by the Modernization Alternatives could also have some less desirable consequences. Redevelopment in the primary study area could increase the intensity of land uses in some areas, which could change local character, create additional traffic on local streets and increase the demand for on-street and off-street parking. If not managed appropriately, redevelopment could impact historic properties or alter the character of historic districts. In addition, induced development within the primary study area could increase impervious areas and create more stormwater runoff that increases the risk for flooding and affects water quality. Induced development could also affect natural resources like wetlands and animal habitat, but this consequence would be minimal in this urban area because most of the remaining natural resources in the county are owned by Milwaukee County and preserved in perpetuity.

Potential Mitigation Measures for Land Use Effects

This section discusses potential mitigation measures that could be used to minimize or avoid negative effects associated with changes in the land use in the primary study area that may be influenced by the I-94 Modernization Alternatives.

The best way to manage any negative effects associated with induced development is through local land use and development policies that are under the jurisdiction of local governments. Municipalities in the primary study area are already using a number of tools to manage development within their communities. All communities within the primary study area have plan commissions, comprehensive planning documents, and zoning regulations in place to direct the amount, type, and density of all development within their communities. Most of the communities also have planning and economic development departments to manage development and implement local plans. In addition, most local governments within the primary study already take measures to protect properties that are historically significant to their communities. The cities of Milwaukee, West Allis, and Wauwatosa have historic preservation commissions to review plans and make recommendations prior to local approval.

To manage stormwater, all communities within the primary study area are part of the MMSD service area and are required to follow the MMSD Chapter 13 Surface Water and Storm Water Rules to control stormwater runoff and minimize the risk for flooding. MMSD's rules apply to any development that increases impervious surfaces by one-half acre or more. The rules also apply to redevelopment projects that disturb an area larger than one acre.

To further support local regulations and policies, state and federal regulations help manage impacts to natural resources such as wetlands (WDNR Chapter 30 permits and the Corps of Engineers Section 404 permits), water quality (NR 151), and threatened and endangered species (NR 27 and Endangered Species Act).

2.4.3 Land Use Effects Related to New Travel Lanes – Secondary Study Area

2.4.3.1 No-Build Alternative Land Use Effects

Under the No-build alternative, the redistribution of population and employment between Milwaukee and Waukesha counties would continue because I-94 already connects the two counties and already provides access to lands in Waukesha County. In addition, Waukesha County has an established arterial network that connects to the regional freeway system, and even the less developed portions of the county already are accessible by the region's transportation system. As discussed previously, so much development has occurred in Waukesha County that it is difficult to distinguish the role of transportation from other factors that influence development such as local government policies and quality of life issues including a person's place of employment, school districts and housing style choices. Waukesha County already has a substantial residential and employment base that is likely to generate additional growth in housing units and jobs regardless of the I-94 East-West alternative identified.

Based on the population and employment trend research, the pace of the population and employment redistribution between the two counties has been slowing, and according to SEWRPC, it would continue to be moderated through 2050. These trends are likely to continue regardless of the alternative chosen for I-94 because they are influenced by larger-scale national economic and demographic trends. For example, many urban areas

around the United States over the past few decades have seen a resurgence of new development in downtowns and central locations, which is at least partially related to more young professionals and empty-nesters choosing urban-living lifestyles. This national trend can also be seen in Milwaukee. According to the 2012 market profile of downtown Milwaukee (Progressive Urban Management Associates 2012), households and population in downtown Milwaukee have increased 27.2 and 25.5 percent, respectively, since 2000.

The growing number of residents living in downtown Milwaukee and other urban neighborhoods means reverse commuting is on the rise. According to the 2012 market profile (Progressive Urban Management Associates 2012), 3.2 percent (2,595) of the 81,001 workers employed in downtown also live in downtown. As a result, increasing congestion under the No-build alternative could make it more challenging for downtown residents and other Milwaukee County residents to commute to other counties, especially to Waukesha County, which contains the second largest number of jobs in the region.

2.4.3.2 Modernization Alternative Land Use Effects

The I-94 East-West corridor is the major transportation link between employment centers in Milwaukee County and the suburban communities in Waukesha County. About 60,000 of Waukesha County's workforce is employed in Milwaukee County, accounting for about 31 percent of Waukesha County workers.

The proposed new travel lanes along the project corridor would improve mobility between these destinations by reducing travel times for commuters during peak travel periods and making travel times along the corridor more reliable. As discussed previously, transportation accessibility improvements can result in long-term economic impacts by making land more attractive for investment. (Strategic Highway Research Program 2012) As a result, improved mobility between Milwaukee and Waukesha counties could facilitate additional residential development in Waukesha County by making it easier for people to work in downtown and other places in Milwaukee County and live in Waukesha County. A growing population would, in turn, encourage additional commercial and industrial development in Waukesha County.

Since land use and transportation are inherently connected, adding new travel lanes could also facilitate the continued redistribution of population between Milwaukee and Waukesha counties. According to SEWRPC, about 52,300 people moved from Milwaukee County to Waukesha County between 2000 and 2010, and 82,640 people moved from Milwaukee County to Waukesha County, resulting in a net in-migration of 30,340 people for Waukesha County (SEWRPC 2013c).

Transportation alone cannot cause land use change or encourage economic development; therefore, the study team evaluated whether other local non-transportation factors are present that support development in Waukesha County. Based on research conducted in Section 2.2.1, the study team found the largest historic redistribution of population and employment in the region occurred between Milwaukee and Waukesha counties. Between 1960 and 2010, Milwaukee County's share of population and employment changed from 66 percent to 47 percent, and from 75 percent to 49 percent, respectively. During the same time period, Waukesha County's share of population and employment changed from 10 percent to 19 percent, and from 5 percent to 23 percent, respectively. In addition, land use and development trend research discussed in Section 2.2.2 indicates that many communities in Waukesha County have zoning and other policies in place to encourage residential, commercial, and industrial development, and communities are using TIF to encourage redevelopment and build industrial parks. Furthermore, many towns in the non-urbanized areas of Waukesha County (See Exhibit 14 for areas without sewer and waters services) allow low-density residential subdivisions and very little agricultural preservation zoning remains within the county.

Because land use and transportation are connected, it is reasonable to assume new travel lanes would support ongoing development in Waukesha County especially because local governments have established policies and plans that support development. However, the magnitude of induced development in Waukesha County is not expected to be substantial compared with existing conditions or the anticipated development levels of the 2035 regional land use plan. While the original construction of I-94 greatly improved accessibility to Waukesha County

and most likely helped to facilitate the spread of development along the I-94 corridor in the county, the addition of new travel lanes is expected to have a much smaller effect on induced development in Waukesha County for the following three main reasons:

1. I-94 is an existing freeway corridor that is part of a mature regional transportation system that already has a high degree of accessibility. This is supported by research that has shown that the extent of indirect effects is influenced by the maturity of the regional transportation system; and greater effects are associated with new roads compared with existing roads that are expanded [2] (National Cooperative Highway Research Program 2002) (Boarnet and Haughwout 2000). Waukesha County has 14 interchanges along I-94 within its county borders, and SEWRPC's 2035 regional transportation plan recommends only one new interchange in Waukesha County—at Calhoun Road. Fourteen interchanges are available in Milwaukee County between the Milwaukee-Waukesha county line and Lake Michigan. An extensive arterial network that connects with the regional freeway system has also been constructed to serve almost all areas within the two counties. Even the less developed areas of the region are still accessible by the transportation network.

2. Travel-time savings during peak travel periods is not expected to be great enough to substantially change regional land use patterns or to substantially shift development from one area of the region to another. For example, traffic analyses have estimated that the travel-time savings in 2040 for the Double Deck alternative going westbound would be about 3 minutes to 3-½ minutes on average during the PM peak period (3 to 6 PM). Many practitioners who study transportation-related indirect effects believe at least 10 minutes of travel-time savings is needed before intraregional land use patterns are substantially affected. (Avin, et al. 2007) In addition, adding new travel lanes would not shorten the distances among destinations, nor would it serve lands that do not already have access to the freeway. The new travel lanes also would not affect travel times during non-peak periods, when traffic is currently typically free flowing.

3. Land use patterns and development have already established themselves around I-94 and other transportation corridors in the region. Because so much development has occurred, it is difficult to distinguish the role of the freeway from other factors that influence development, especially because the region already has a high level of transportation accessibility, and employment centers already are distributed throughout Milwaukee and Waukesha counties and other parts of the region. This is demonstrated by the almost equal traffic patterns between the two counties. According to SEWRPC, the average weekday person trips in 2001 between counties was 237,500 from Milwaukee County to Waukesha County, and 239,700 from Waukesha County to Milwaukee County—a difference of 2,200 trips. (SEWRPC 2006b) As discussed in the TRB report, isolating economic impacts from transportation projects within large, growing metropolitan areas is difficult because these impacts become more dispersed and obscured by other economic influences the farther away one moves from the transportation investment (Strategic Highway Research Program 2012).

In addition, the amount of undeveloped land that is available in the suburban areas closest to the project corridor in eastern Waukesha County is limited because land uses within Brookfield, New Berlin, and Menomonee Falls have become established. The City of Brookfield is mostly built out, and with the exception of some remaining tracts of open land, the urbanized/sewered portions of New Berlin and Menomonee Falls largely are developed. The development intensity of the non-urbanized areas of New Berlin and Menomonee Falls are limited by a lack

[2] In the report, *Do Highways Matter? Evidence and Policy Implications of Highways' Influence on Metropolitan Development,* researchers found that the first limited access or interstate highway built in an urban area brought large improvements in transportation access and resulted in large increases in land prices. However, the researchers found that "as more highways are built, and the metropolitan highway network matures, the incremental effect on accessibility from new or improved highways decreases, thus accounting for a smaller change in land prices due to any access premium." The researchers further discusses that metropolitan highway investments still influence land use, but at a much smaller geographic scale, rather close to the project. (Boarnet and Haughwout 2000)

of existing and planned water and sewer services (see Exhibit 14). Furthermore, development under existing transportation conditions has already spread beyond the eastern Waukesha County communities and as far west as Oconomowoc. This conclusion is supported by a stakeholder meeting conducted with the Waukesha County planner manager, who stated that development has already spread to western Waukesha County and adding a new travel lane to the I-94 corridor would not change already established land use patterns in the county. (See meeting notes in Appendix A.)

Development in the non-urbanized areas of western Waukesha County is limited by a lack of sewer and water facilities, and large environmental corridors that largely are preserved by local zoning ordinances or public ownership (see Exhibit 14 and Exhibit 17). Also, the development potential of western Waukesha County is limited because it is farther from the existing concentrations of population and labor. This was confirmed by an interview with a local real estate developer who stated that locations in western Waukesha County such as Oconomowoc are less desirable for commercial and industrial development because they are farther from the population base and available workforce. Available infill development sites in Milwaukee County and eastern Waukesha County are much more desirable from a real estate perspective. (See stakeholder interview with David Merrick, Irgens in Appendix C)

Consequences of the Modernization Alternative Land Use Effects

The primary concern raised by local stakeholders about development that may be facilitated by the Modernization Alternatives in the secondary study area is that it could increase the number of jobs that are not accessible by transit in Waukesha County. A lack of transit access affects the ability of lower-income, transit-dependent populations in the City of Milwaukee to obtain employment and it concentrates poverty within central city neighborhoods. The primary study area had an individual poverty rate of 30 percent in 2010, which is substantially higher in comparison to Milwaukee County (19 percent) and Waukesha County (4.4 percent). Although the Modernization Alternatives are not expected to cause a substantial change in secondary study area land use trends, the study team recognizes that transportation and land use are inherently connected and that the low-density development patterns that have been prevalent in the United States (and in the Milwaukee metropolitan area) over the past 60 years have affected the ability to provide cost effective transit services (USEPA 2013).

MCTS provides good coverage to employment centers within Milwaukee County, providing access to 93 percent of Milwaukee County's employers with 500 or more employees (SEWRPC 2013d). However, access to employment centers outside Milwaukee County is limited due to the lack of routes that cross the county line, unreasonable travel times (greater than 90 minutes), or transit schedules that are not coordinated with worker shifts. In addition, only one main connection point between MCTS and Waukesha Metro Transit is available at Brookfield Square Mall where the MCTS Route 10 meets Waukesha Metro Route 1. Also, the schedules of the freeway flyer routes operated by MCTS and Waukesha Metro Transit are oriented to bringing suburban workers to downtown Milwaukee and generally do not facilitate reverse commuting.

Furthermore, residents in the primary study area, in comparison to other areas of the region, tend to have fewer vehicles available and as a result are more likely to rely on transit to get to work. Nearly 20 percent of the occupied housing units in the primary study do not have access to a vehicle. This is substantially higher in comparison to Milwaukee County (13 percent), Waukesha County (4 percent) and the Southeastern Wisconsin region (9 percent). Over 7 percent of workers in the primary study area use public transit to get to work. This is higher in comparison to transit utilization percentages for Milwaukee County (6 percent), Waukesha County (1 percent) and the Southeastern Wisconsin region (3 percent).

Several research studies have documented the concerns surrounding transit access and workers in the Milwaukee area. A 2004 report titled "Transportation Equity and Access to Jobs in Metropolitan Milwaukee" identified a "spatial mismatch" between Milwaukee metropolitan's affordable housing supply in the City of Milwaukee and the availability of low-skilled jobs in adjacent suburban areas (University of Wisconsin–Milwaukee, Center for Economic Development 2004). The report's research found that while 81 percent of families living below the poverty line are

located in the City of Milwaukee, only 30 percent of businesses with strong hiring projections for entry-level workers are located in Milwaukee, and the remaining 70 percent are in the suburbs (The University of Wisconsin-Milwaukee Center for Economic Development 2004).

More recently, the Public Policy Forum published a related report called Getting to Work: Opportunities and Obstacles to Improving Transit Service to Suburban Milwaukee Job Hubs (Public Policy Forum 2013). The report examines the challenges associated with accessibility to the major employment centers (a concentration of at least 10,000 jobs) in Milwaukee, Waukesha, Washington, and Ozaukee counties for workers in Milwaukee who do not have access to a vehicle for work trips. The report found that of the 29 job centers located within these counties, 15 have relatively high levels of public transit access (Milwaukee County), four are completely inaccessible by transit (Washington and Waukesha counties) and 10 are served by transit on a limited basis (all 4 counties).

Additionally, the SEWRPC 2035 regional housing plan found that 17 percent of households in the City of Milwaukee did not have access to a car in 2005−2009 and only 41 percent of employers (with 500 or more employees) in the region are accessible by local or rapid transit service (SEWRPC 2013b). As a result, households in the City of Milwaukee that lack access to a car are not able to access the majority of employment centers in Waukesha County and the region.

The spatial mismatch is a complex issue and is also complicated by the lack of workforce housing outside Milwaukee County. The SEWRPC 2035 regional housing plan analyzed the ratio of available jobs and housing in the region to determine if communities with a substantial amount of existing and/or planned employment also have existing or planned workforce housing (SEWRPC 2013b). The SEWRPC analysis found a current and projected jobs/housing imbalance for many of Milwaukee's suburban communities. Municipalities such as Brookfield, New Berlin, Muskego, and others were found to have a lower-cost job/housing imbalance and a moderate-cost job/housing imbalance. This means that these communities have both a higher percentage of lower-wage jobs than lower-cost housing and they have a higher percentage of moderate-wage jobs than moderate-cost housing. According to SEWRPC, a moderate-cost imbalance is the most common type of current and projected job/housing imbalance in the region and tends to occur in suburban communities.

Local transit funding is another important factor affecting the ability of local transit services to provide access to suburban job locations. MCTS has four primary sources of revenue for its operations. In 2014, passenger fares accounted for 35 percent, the State of Wisconsin provided 43 percent, the federal government provided 11 percent, and Milwaukee County property taxes contributed about 11 percent to operating revenues (MCTS 2014). As discussed in the Public Policy Forum report, Milwaukee County's Transit Crisis, public funding sources have not kept pace with growth in transit operating costs (Henken, Horton and Schmidt 2008). The local share of funding public transit is largely provided by property taxes, which have to compete annually with funding for mandated services and projects. Increasingly, due to the constraints in property tax-based funding and shortfalls and fluctuations in federal and state funding, MCTS has found it difficult to provide funding to maintain current service levels and address transit needs beyond the county border. To address its fiscal challenges, MCTS has reduced transit service levels, resulting in a 22 percent decline in total annual bus miles between 2000 and 2012 (Public Policy Forum 2013). While service reductions have mostly involved reduced trip frequencies and shorter hours of service, several bus routes that once connected Milwaukee County residents with suburban job centers have been eliminated (Public Policy Forum 2013).

Funding for transit is further complicated by the fact that Wisconsin legislation limits WisDOT's ability to provide capital funding for transit outside traffic mitigation measures during construction projects. As stated in Section 85.062(2), Wisconsin Statutes, "No major transit capital improvement project may be constructed using any state transportation revenues unless the major transit capital improvement project is specifically enumerated under

subsection (3).” In 2010, capital project revenue sources for MCTS were primarily funded by federal sources (80 percent) and from Milwaukee County (20 percent) (Gulotta-Connelly 2010).[3]

Potential Mitigation Measures for Land Use Effects

The following bullets describe potential mitigation measures and responsible agencies that could address the indirect land use effects resulting from adding new travel lanes for the secondary study area.

- **Freeway Project-Related Measures.** Because the provision and maintenance of transit services is under the jurisdiction of local governments in Wisconsin, WisDOT is not able to directly implement transit services. However, WisDOT has the ability to coordinate with local transit providers and select freeway reconstruction alternatives that could benefit transit or not preclude future transit options. For example, all of the I-94 Modernization Alternatives would benefit existing freeway flyer transit services that operate in freeway travel lanes, as these services would benefit from improved traffic operations.

  As part of the I-94 East-West corridor project, WisDOT has the ability to mitigate impacts to transit service during construction. These measures would be determined during subsequent design phases. Some examples of transit mitigation that have been used for other Southeastern Wisconsin freeway projects include the following: providing a temporary park-and-ride lot during reconstruction of an existing park-and-ride lot; providing funds to MCTS to add buses to fixed routes and freeway flyer routes to maintain headways during construction; and reimbursing MCTS on a per-rider basis to provide free bus rides around closed roadways and/or bridges.

  WisDOT also has the ability to mitigate any transit impacts that may occur during freeway reconstruction projects. For example, additional transit service provided by WisDOT during the Zoo Interchange construction included the Burleigh and State Fair Shuttles from the Regional Medical Center during interchange closures in 2014 and 2015 (approximately 114 rides/day), UPASS expansion and Route 901 service in Waukesha County in 2015 (approximately 120 rides/day), and several, all-day free transit service zones through and around the Zoo Interchange construction area in 2014-2015. These free zones included 92nd Street, 84th Street, Hwy 100, Watertown Plank Road, 76th Street, and Bluemound/Wisconsin Avenue (approximately 335 rides/day combined).

  In addition, WisDOT is funding $13.5 million in bus transit services to reduce traffic congestion and provide transportation for workers between Milwaukee and the suburban job centers during construction as part of the construction of the Zoo Interchange reconstruction project. Also, $2 million of funds are being used for service enhancements. Routes funded by WisDOT include Route 61, Route 279, and Route 6. Route 61 provides service from Milwaukee’s northwest side to Germantown. Route 279 travels from 35th Street in Milwaukee to the Park Place business park on Milwaukee’s northwest side and the Menomonee Falls business park. Route 6 travels from Port Washington Road along Capital Drive to the New Berlin industrial park. WisDOT will provide over 4 years of funding for these routes to suburban job centers.

- **Regional Transit Implementation-Related Measures.** According to SEWRPC, if the transit components of the 2035 regional transportation plan were implemented, many major employment centers that are not currently served by public transit would become accessible for people without access to a car, including those who work weekend hours and second and third shifts (SEWRPC 2013d). The 2035 plan calls for a 100 percent increase in public transit from 2005 levels in terms of revenue transit vehicle miles. The increase in public transit includes the development of rapid and express transit systems and substantial expansion of local bus systems where development density is sufficient to generate ridership (SEWRPC 2006b).

[3] Under certain circumstances, federal highway funds can be expended on transit projects if the project meets certain conditions. See Title 23, USC 119(d)(2)(G).

According to SEWRPC's 2014 review and update of its 2035 transportation plan, the amount of transit service in Southeastern Wisconsin as of 2012 has declined since the plan was adopted 2006, including a decrease of almost 7 percent in fixed-route bus service. The transit service increase envisioned by 2012 in the 2035 plan was about 12 percent (SEWRPC 2014). Local government entities (i.e., Milwaukee County and Waukesha County) along with transit service providers (i.e., MCTS and Waukesha Metro) are the agencies responsible for implementing these measures.

- **Transit Funding-Related Measures.** The transit expansion recommendations in the 2035 regional transportation plan were based on the assumption that state legislation would be passed to create a local dedicated transit funding source and that a renewal of adequate annual state financial assistance to transit would be provided as part of the state biennial budget. The plan also recognized that the transit plan would benefit from the creation of a regional transit authority (RTA). Transit funding-related measures for this project will continue to rely on existing local, state, and federal funding sources. Most public transit systems nationwide have dedicated local funding, typically a sales tax of 0.25 percent to 1.0 percent, and are not nearly as dependent upon federal and state funding for operating assistance (SEWRPC 2006b).

  Attempts have been made at the state legislature in recent years to establish dedicated transit funding and RTAs, but these attempts have failed to pass the legislature. Between 2005 and 2011, state transit operating funding to Southeastern Wisconsin increased by 4 percent annually, federal transit operating funding increased about 1 percent, and local transit operating funding decreased slightly (SEWRPC 2014). According to SEWRPC, without dedicated local transit funding or more substantial increases in local or state funding, the expansion of public transit service recommended in the regional plan may not be implemented, and existing transit service is likely to continue to decline.

  MCTS has received federal grants to implement a system of express bus routes, known as MetroExpress. The routes primarily serve destinations in Milwaukee County. In 2012, MCTS started the RedLine, BlueLine, and GreenLine, and the GoldLine in 2015. These routes are largely funded by Congestion Mitigation and Air Quality Improvement program grants, which only provide up to 3 years of funding for transit service. Once the grants run out, MCTS will need to find alternate sources of operational funds. Although these routes are mostly within Milwaukee County, they do lay the foundation for future extensions to employment centers in the suburban communities adjacent to Milwaukee County if funding and approvals can be obtained.

- **Housing-Related Measures.** Consistency with the SEWRPC recommendations in the 2035 regional housing plan could help to address the existing and projected jobs/housing balance discussed above. The plan advises local governments with existing and planned employment land uses that have sewer services to conduct detailed analyses of their communities to confirm if an existing or planned job/housing imbalance exits. For communities that have a higher percentage of lower-wage jobs than lower-cost housing, new affordable multifamily housing developments are recommended. For communities with a higher percentage of moderate-wage jobs than moderate-cost housing, additional modest sized single-family homes on small lots would help to improve the imbalance. Progress towards achieving the recommendations in the SEWRPC Housing Plan is limited by the fact that SEWRPC is an advisory agency. Local governments would need to make substantial changes to local land use plans and zoning regulations to increase the region's supply of housing that is available to workers.

- **Land Use-Related Measures.** Local government consistency with the SEWRPC 2035 Regional Land Use Plan would help the region develop in a more compact manner that can support transit. The 2035 plan includes the following overall recommendations:

  - Seek a centralized regional settlement pattern that moderates the current trend toward decentralized land development.
  - Stabilize and revitalize urban centers, particularly the Milwaukee urbanized area.

- Encourage new development as infill in existing urban centers with defined growth emanating outward from the existing urban centers.
- Plan new urban development at densities that effectively support essential urban services, including water, sewer, and public transit.
- Protect remaining primary environmental corridors from incompatible urban development.
- Discourage urban development in secondary environmental corridors.
- Preserve prime agricultural lands.

Because land use is under the jurisdiction of local governments, the 2035 regional land use plan recommendations primarily must be implemented by local governments in the region.

2.4.4 Land Use Effects Related to Interchange Modifications – Primary Study Area

The following subsections discuss land use effects related to the proposed interchange modifications for the primary study area.

2.4.4.1 No-Build Alternative Land Use Effects

Under the No-build alternative, the interchange configurations would remain in their existing configurations. This would avoid negative land use and economic development effects that could result from complete or partial closure of the Hawley Road interchange under the At-grade alternative. The No-build alternative would also maintain the existing freeway exit ramp that connects to 25th Street that is important to businesses in the Menomonee Valley. In addition, the No-build alternative would maintain existing ramp lengths and would not make access less direct by using C-D roads under the Double Deck alternative and braided ramps under both Modernization Alternatives for the east segment.

It is the study team's determination that interchange configurations under the No-build alternative could diminish the overall economic development potential of the primary study area over time because the No build alternative would not make safety and traffic operation improvements to the interchanges. Many stakeholders including local real estate developers stated having safe access from the freeway to local business destinations was very important to facilitating planned redevelopment within the primary study area.

2.4.4.2 Modernization Alternatives Land Use Effects

70th Street/68th Street Interchange

The existing split diamond interchange serves commercial and residential areas in Wauwatosa, Milwaukee, and West Allis. Under the Double Deck alternative, a full access interchange would remain. The main change is that westbound travelers would exit the freeway farther ahead than they currently do under existing conditions. Currently, westbound I-94 traffic exits at about 66th Street. Under the Double Deck alternative, westbound travelers would have to merge into an exit-only lane around Hawley Road (at about 60th Street) and proceed on a C-D road that would take travelers to 68th and 70th streets. The exit ramp from eastbound I-94 would be similar to existing conditions.

Representatives from the City of West Allis have expressed concerns about the proposed changes to this interchange. They are concerned that under some alternatives, access will be less direct, making the community's redevelopment plans more challenging. The study team maintains that the interchange configuration proposed under the Double Deck alternative would not affect land use patterns within the primary study area or hinder economic competiveness because the alternative maintains the existing access points and improves safety. Travelers would quickly become accustomed to the modifications and would be able to follow freeway signage. The C-D road would have posted speed limits between 45 mph and 50 mph and no traffic lights, allowing efficient movement of traffic. Also, the addition of new travel lanes along the freeway mainline should help offset increases in travel time that may result from travel along a C-D road. Most importantly, the commercial and

employment districts that are served by the 68th Street and 70th Street corridors such as the Town Center, Summit Place, and MATC campus in West Allis, and the Bluemound Road and State Street corridors in Wauwatosa, contain neighborhood-serving and destination-type businesses and are not highway-serving businesses such as gas stations and fast-food restaurants that rely mostly on impulse stops from customers. These statements are supported by interviews conducted with local real estate developers who stated the C-D roads would require people to learn a new behavior but would not affect development trends in Wauwatosa or West Allis (see Appendix C).

If the At-grade alternative (preferred) were chosen for the west segment, the 68th Street/70th Street interchange would be reconstructed as a split diamond with no C-D roads. This provides the most direct access and is most similar to existing conditions. The interchange option would be viewed most favorably from an economic development standpoint; however, closing the Hawley Road interchange is not an acceptable alternative to local stakeholders as discussed in the following section.

Hawley Road Interchange

Under the Double Deck alternative, the Hawley Road interchange would remain open in a configuration that is similar to existing conditions. Maintaining the interchange access in all directions would continue to support existing neighborhoods, businesses and planned development within Milwaukee, Wauwatosa, and West Allis. This interchange is used by several neighborhoods to the north of I-94 such as Bluemound Heights, Story Hill, Jacobus Park, Wick Field, and Washington Heights in Milwaukee and Wauwatosa and neighborhoods to the south of I-94 such as Johnsons Woods, Six Points, and Jackson Park in West Allis, West Milwaukee, and Milwaukee. It also provides access to several commercial corridors in West Allis, Milwaukee, and Wauwatosa and to the VA Campus. See Exhibit 13 for the location of neighborhoods and business districts near the Hawley Road interchange.

Under the At-grade alternative, two options area being evaluated for the Hawley Road interchange. One option would close all interchange ramps and the other option would provide partial access to/from the west. Based on stakeholder feedback, the study team determined that closing or partially closing the interchange would affect the development potential of the business corridors that it serves to the north and south of the freeway. The magnitude of this effect is not expected to be substantial for areas in Wauwatosa and Milwaukee because alternate access is available via interchanges with 68th Street/70th Street and US 41. However, the closure or partial closure of the interchange could have a negative effect on the City of West Allis. This effect is discussed in the following paragraphs.

The study team determined the City of West Allis would be the most impacted by the closure or partial closure of the Hawley Road interchange, which serves important redevelopment areas and employment generators for the city. The loss of freeway access at Hawley Road could substantially diminish the economic competiveness of existing commercial uses and hinder additional redevelopment opportunities along the 60th Street corridor (Hawley Road turns into 60th Street in West Allis) See Exhibit 13. This area of West Allis is not well connected to the local street system and therefore, alternate access to nearby interchanges would be circuitous.

According to an interview with the owner, Van Buren Management, of the Renaissance Faire office building located at 801 S. 60th Street, the closure or partial closure of the Hawley Road interchange would make it very difficult to attract new tenants to the office building and would likely result in the loss of existing tenants. They state the office tenants selected this location for its convenient freeway access at Hawley Road. The office building is typically used for back office functions by larger employers in the area that need convenient travel between back office functions and their downtown locations. According to the owner of the building, if the interchange is removed they may not invest in future redevelopment phases of the Renaissance Faire building and would most likely not pursue other redevelopment opportunities in this corridor. See Section 2.2.2.2 under City of West Allis for more information about the Renaissance Fair building and other developments in West Allis.

The 60th Street corridor and the Renaissance Faire building are seen as a gateway to the City of West Allis and are important to the city's job creation goals and ongoing redevelopment efforts. The potential loss of employment at

this building and other nearby commercial uses along 60th Street could diminish existing and future employment gains that West Allis has been working to achieve over the past few decades to rebuild their local economy since the departure of Allis-Chalmers in the 1980s. The diminished economic development potential of this area was also stated as a concern by other local real estate professionals that were interviewed for this analysis. They stated the closure of the Hawley Road interchange would be problematic for existing and planned development in West Allis along the 60th Street corridor and the Six Points area. See Appendix C**.**

The closure or partial closure of the Hawley Road interchange would also place greater pressure on local arterials such as Bluemound Road, National Avenue, and Miller Park Way by diverting traffic to adjacent roadways. This would increase traffic on those routes and could make them less desirable places to conduct business. According to local stakeholders, many local arterials already have high traffic volumes and neighborhood quality of life and business development would be susceptible to additional increases in traffic volumes.

After the public hearings for the Draft EIS, WisDOT and FHWA announced its preferred alternative is the At-grade alternative with a half interchange at Hawley Road. To offset the loss of access to and from the east at the Hawley Road interchange, WisDOT will construct an extension of Washington Street in West Allis to link 70th and 60th streets as part of the alternative. The extension of Washington Street should provide a convenient local roadway that connects the 60th Street/Hawley Road corridor with the nearby I-94 interchange at 70th Street. Also, the Washington Street extension could facilitate planned local economic development. Chapter 9 of the *City of West Allis Comprehensive Plan* recommends the Washington Street extension to improve traffic circulation in this area, contributing to the area's revitalization and redevelopment of industrial buildings.

Zablocki Drive Bridge

The Zablocki Drive bridge is primarily used to access the VA campus from Bluemound Road. It is an important access point because it connects the cemeteries on either side of I-94 and maintains access between the cemeteries even during Miller Park events. Under the At-grade alternative, Zablocki Drive would be replaced by a longer bridge in the same location. Under the Double Deck alternative, Zablocki Drive would be moved east next to, but separate from, General Mitchell Boulevard. Since access is being maintained, no indirect effects are expected to the cemeteries or the VA from the reconstruction of Zablocki Drive bridge.

Mitchell Boulevard Interchange

The Mitchell Boulevard interchange would be closed under all Modernization Alternatives, but Mitchell Boulevard would continue to cross I-94. The interchange serves Miller Park, the VA Campus, and the Story Hill neighborhood. Based on stakeholder feedback, the removal of this interchange may cause some minor inconvenience for adjacent users, but most stakeholders agree that Mitchell Boulevard is not a safe location for an interchange.

Land use effects are not anticipated from this closure because the interchange would be replaced by a new local road interchange within in the Stadium Interchange. Also, it is a relatively low-volume interchange compared to the other interchanges within the I-94 East-West Corridor (except on Brewers game days). In addition, land uses are well established in this area and access across the freeway would be maintained by an over/underpass that is separate from Zablocki Drive. This would avoid conflicts between traffic going to the VA Campus and traffic going to Miller Park events.

Stadium Interchange

Under all Modernization Alternatives, the Stadium Interchange would be reconstructed as a hybrid between a service interchange and a system interchange. All of the exit ramps from I-94 to US 41/Miller Park Way would be free-flow ramps with no traffic signals. The ramps from southbound US 41 to eastbound I-94 and from northbound Miller Park Way to westbound I-94 would be controlled by a traffic signal. Also, a traffic signal would control through traffic on US 41/Miller Park Way. According to local stakeholder input, the US 41/Miller Park Way corridor provides convenient access to I-94 for neighborhoods and business districts as far north as North Avenue and as far south as Lincoln Avenue (See Exhibit 13, Development Trends.)

Representatives from the Village of West Milwaukee have expressed concerns about the proposed Stadium Interchange design and prefer a full system interchange with free flow ramps in all directions. They are concerned the proposed interchange will not handle traffic as well as a full system interchange and could increase congestion along Miller Park Way. According to village officials, Miller Park Way is already a heavily traveled corridor and more congestion could make it a less desirable commercial corridor. Some stakeholders from the City of Milwaukee were not concerned about the alternative from a land use perspective because they would like to see the portion of US 41 to the north of I-94 reconfigured into an arterial roadway that would provide better connections between neighborhoods and accommodate more modes of transportation. Representatives from the City of Wauwatosa stated that the proposed interchange would not affect Wauwatosa's land use/development patterns because the existing local service interchanges along US 41 would remain open.

It is the project team's position that the proposed Stadium Interchange would not affect land use patterns because the interchange's traffic operations would remain at an acceptable level of service. Also, the interchange maintains existing interchanges along US 41/Miller Park Way that provide access to Wauwatosa, Milwaukee and West Milwaukee.

New Local Road Interchange within Stadium Interchange

Under all Modernization Alternatives on the east segment (On-alignment and Off-alignment), a new local road interchange (44th/46th Streets) would be located within the Stadium Interchange. The purpose of the new interchange is to replace the access currently provided by the Mitchell Boulevard interchange. No land use effects are expected as a result of this interchange because the land around the interchange is developed, and the Menomonee River and Canadian Pacific Railway makes access to the adjacent land challenging. Also, the area already has access through the US 41 interchange at Wisconsin Avenue and the new local road interchange within the Stadium Interchange would not have a noticeable change on traffic patterns in the area. Furthermore, the City of Milwaukee does not have any changes to land use planned for this area that includes the Miller-Coors facility.

35th Street Interchange

The 35th Street interchange serves the Layton Boulevard West neighborhood and the Silver City Main Street district along National Avenue to the south and destinations to the north such as the Merrill Park neighborhood, Marquette University High School, and the business center being redeveloped by the Potawatomi Business Development Corporation at the former Concordia College campus. This access point is important to neighborhoods and business areas containing environmental justice populations to the north and south of the freeway.

Under all Modernization Alternatives on the east segment (On-alignment and Off-alignment), a full-access interchange at 35th Street would be maintained, although in a slightly different configuration. Currently, the ramps are fairly close to 35th Street, but the westbound I-94 ramps do not begin or end at 35th Street. The westbound off ramp terminates at 34th Street and the on ramp begins at 36th Street. The current eastbound ramps directly connect with 35th Street for exiting and entering the freeway. Under the Modernization Alternatives, travelers would have to exit earlier in comparison to existing conditions, but all ramps would lead directly to 35th Street. This would consolidate access at 35th Street and give more certainty for travelers in terms of finding their way in and out of the neighborhoods to the north and south of the freeway. It is expected that travelers would quickly become accustomed to the new interchange ramps and would be able to follow freeway signage. As a result, it is the study team's determination that the ramp modifications would not adversely affect local land use and development patterns and would continue to facilitate planned development and revitalization efforts. (See Section 2.2.2.2 for information about development trends in the Layton Boulevard West neighborhood.)

A previous interchange option showed 35th Street being closed, which was very concerning to the Layton Boulevard West neighborhoods and Marquette University High School. But, no concerns have been raised by local stakeholders regarding the proposed full access interchange configuration.

Travelers originating from US 41/Miller Park Way would not be able to exit at 35th Street via I-94. The study determined, no land use effects are anticipated because US 41 serves mostly local traffic, which would be able to access 35th Street from nearby local arterials. The study team's determination is supported by local stakeholder input that stated the local street network was adequate to handle these traffic movements.

27th Street Interchange

The existing on and off ramps in this area serve the Avenues West neighborhood to the north and the Menomonee Valley, Layton Boulevard West, Clarke Square and Muskego Way neighborhoods to the south. The Off-alignment alternative would reconstruct the 27th Street interchange so that all ramps directly connect to 27th Street, a state highway (WIS 57). This would make the interchange easier for motorists to navigate. It would change access to the Menomonee Valley because motorists would be required to make two right turns (St. Paul Avenue and 25th Street) to access the Menomonee Valley. The On-alignment alternative (preferred alternative) would maintain the existing ramp alignment in the interchange, where no ramps connect to 27th Street. The I-94 westbound exit ramps is at 25th Street, the I-94 westbound entrance ramp is at 28th Street, the I-94 eastbound exit ramp is at 26th Street, and the I-94 eastbound entrance ramp is at 25th Street.

Consolidating access at 27th Street would likely help facilitate redevelopment plans along the 27th Street corridor to the north of the freeway, which would benefit environmental justice populations in that area. As documented in Section 2.2.2.2, the Avenues West Association has been working to revitalize the 27th Street commercial corridor, and convenient access to the freeway is considered essential to their efforts. The potential for induced development would be moderated by the currently distressed economic conditions of the area. Per stakeholder input and census data, the 27th Street commercial corridor in the Avenues West neighborhood has a high rate of vacancies, and the surrounding neighborhoods have a high rate of poverty, which makes attracting reinvestment and redevelopment more challenging.

Some businesses in the Menomonee Valley are concerned that the consolidated 27th Street interchange under the Off-alignment alternative would hinder business development because it would remove the 25th Street ramp and introduce extra turning movements for customers and freight trucks coming from the east. The Potawatomi Hotel and Casino is particularly concerned about losing the 25th Street ramp because access to the Valley at 13th Street can be blocked by freight trains.

It is the project team's position that the consolidation of the 27th Street interchange would not create a substantial negative land use or economic development effect because access to Menomonee Valley destinations would be retained. Also, businesses located within the Menomonee Valley are destination businesses, not highway-serving businesses like gas stations or fast-food restaurants, which rely on impulse stops for a large portion of their business. In addition, consolidating access at 27th Street would simplify access in the area, which may give business patrons in the Menomonee Valley more predictability in terms of finding their way in and out of the Menomonee Valley.

Both Modernization Alternatives (On-alignment and Off-alignment) are not expected to affect neighborhoods to the south of the Menomonee Valley including the Layton Boulevard West, Clarke Square and Muskego Way neighborhoods. Under both Modernization Alternatives these neighborhoods would maintain freeway access via the 27th Street viaduct. A consolidated interchange at 27th Street may have a slightly more positive benefit for these neighborhoods because it would simplify freeway access and make access easier for residents and visitors to these neighborhoods.

Consequences of the Modernization Alternative Land Use Effects

As discussed previously, the primary study area land uses have developed around the existing freeway access points and are important for the continued redevelopment of business areas and ongoing revitalization of neighborhoods within the primary study area. In most areas, the Modernization Alternatives maintain the existing access points along the I-94 East-West project corridor and would continue to support neighborhood

revitalization and planned redevelopment within the primary study area. In a few areas, access is modified and or eliminated, which could result in some negative effects to development.

Under the At-grade alternative, freeway access from the Hawley Road interchange would be completely eliminated by the removal of all ramps or access would be diminished by a partial interchange that would only provide access to/from the west. The loss of access or partial access at Hawley Road could have land use effects to existing and planned development along the 60th Street corridor in West Allis such as the Renaissance Faire office building. The loss of access at this location would diminish the value of recent commercial developments and reduce the potential of future redevelopment and investment in this corridor. Ultimately, the area could become blighted if businesses choose to move out and go to another area with better freeway access. This effect would be minimized by the Washington Street extension that WisDOT intends to construct between 60th and 70th streets as part of the At-grade alternative with a half interchange at Hawley Road.

Another consequence of the Hawley Road closure or partial closure is that traffic on adjacent local arterials such as 68th Street, National Avenue, Miller Park Way, Wisconsin Avenue, and Bluemound Road would increase. The increased traffic could diminish the business environments along these arterials by creating more conflicts between pedestrians and vehicles and increasing the potential for more vehicle collisions. Local stakeholders have expressed concerns that these corridors are already impacted by high traffic volumes and additional traffic congestion on local roads could discourage future business investment.

Some stakeholders have also expressed concern with changes to interchange access points that may make access less direct.

Potential Mitigation Measures for Land Use Effects

Indirect business impacts that may result from the complete closure or partial closure of the Hawley Road interchange could be minimized by improving the area's connectively to the local street network so that access to adjacent interchanges is more convenient for customers and tenants that utilize businesses within this area. Increased traffic on local arterials that could result from the closure or partial closure of the Hawley Road interchange with I-94 would be mitigated to some extent by local arterial improvements that could be constructed as part of the project traffic mitigation plan during construction.

Under the preferred alternative, WisDOT has committed to constructing an extension of Washington Street between 60th and 70th streets in West Allis to minimize economic and traffic impacts that may result from the loss of access to and from the east at Hawley Road. WisDOT would also construct off-interstate improvements at three local road intersections:

- 70th Street/Greenfield Avenue
- National Avenue/Greenfield Avenue
- Miller Park Way/National Avenue

These intersections have been identified for potential upgrades to improve local road operations under the partial closure of the Hawley Road interchange. Each of the intersections would see a modest increase in traffic volumes as a result of the access change at Hawley Road. These types of roadway improvements would be the responsibility of WisDOT, and more detailed plans would be prepared during subsequent design phases of the project. See EIS Section 3.27, Construction, for more information about construction mitigation.

Signage along the freeway and local streets could also be used to help travelers find neighborhood and business destinations. The importance of signage has been mentioned by the City of West Allis if the Hawley Road interchange is eliminated. Also, the Menomonee Valley Partners have also stated that signage will be very important to direct Valley visitors to St. Paul Avenue if access at 27th Street is consolidated under the Off-alignment alternative. Freeway signage would need to be approved by WisDOT and local wayfinding signage would need to be provided by local communities.

2.4.5 Encroachment-Alteration Effects

These types of indirect effects are from alterations to the behavior and function of the physical environment farther from the corridor and later in time. Encroachment-alteration effects are often associated with direct project impacts that alter neighborhood quality of life; the vitality of business districts; and the quality of natural resources. Stakeholders have expressed concerns about property acquisition, business relocation, noise, air quality, visual and infrastructure proximity impacts, and how those impacts could affect the quality of neighborhoods, business corridors and natural resources beyond the project's footprint over time.

2.4.5.1 Neighborhood Encroachment Effects

The following subsections discuss the project's potential neighborhood encroachment-alteration effects.

No-Build Alternative Neighborhood Effects

The No-build alternative would not create the potential for neighborhood encroachment effects beyond existing conditions because no property acquisitions would be required, and potential visual impacts associated with some of the Modernization Alternatives would not occur. However, the increasing congestion on the freeway would continue to raise air pollution emissions, as would stop-and-go traffic that diverts to local streets to avoid congested freeway conditions. Also, traffic that diverts to local arterials to avoid congestion on the freeway would continue to increase over time under the No-build alternative. This affects neighborhood quality of life by creating more conflicts between pedestrians and vehicles and diminishing the redevelopment potential of some neighborhood-oriented businesses. In addition, the No-build alternative would not present the opportunity to construct noise barriers. According to EIS Section 3.19, Noise, there is an existing noise impact as well as a noise impact with both Modernization Alternatives. Some residential areas to the north and south of the freeway on the east and west segments would be eligible for noise barrier construction under the Modernization Alternative.

Modernization Alternatives Neighborhood Effects

The west segment presents the greatest likelihood for neighborhood encroachment-alteration effects due to the combination of neighborhoods located on both the north and south sides of the freeway and the proposed features of the Modernization Alternatives for this segment. Neighborhoods adjacent to the west segment include Johnsons Woods, Bluemound Heights and Story Hill. See Exhibit 13 for neighborhood locations.

The proposed Modernization Alternatives would have some residential acquisitions and would have a wider footprint compared with existing conditions, moving the freeway closer to adjacent neighborhoods. Also, depending on the alternative, the freeway would be at a higher elevation compared with existing conditions, creating a visual impact. In addition, there is an existing noise impact as well as an anticipated noise impact under the Modernization Alternatives, a discussed in EIS Section 3.19, Noise. The following paragraphs discuss the different neighborhood effects that may occur as a result of the Modernization Alternatives.

Encroachment-alteration effects under the At-grade alternative on the west segment would be minimized along the mainline of the freeway because it has a smaller footprint; it reconstructs the freeway at-grade; and it would have the least residential acquisitions (four). However, other aspects of this alternative not associated with the mainline could affect neighborhood quality of life. Local arterials serving neighborhood areas would experience more traffic under the At-grade alternative because less traffic is expected to divert to the freeway as a result of congestion that may occur along the narrow freeway segment through the cemetery. (EIS Section 3.3, Transportation Service, discusses why narrow lanes lead to a reduced Level of Service for traffic.) Also, the At-grade alternative would either close all I-94 interchange ramps at Hawley Road or provide partial access to and from the west. As discussed in Section 2.4.4 of this report, a reduction in access at Hawley Road could diminish economic development potential in West Allis and would make access to some residential areas less convenient. The closure or partial closure of Hawley Road interchange would also shift traffic to other local arterials such as 70th Street, 68th Street, Bluemound Road, Greenfield Avenue, National Avenue and Miller Park Way. Many of these roads are already congested during peak travel periods, and according to local stakeholders, congestion

along these routes diminishes neighborhood quality of life. Under the preferred alternative, WisDOT has committed to constructing an extension of Washington Street between 60th and 70th streets in West Allis and improving three local road intersections (70th Street/Greenfield Avenue; National Avenue/Greenfield Avenue; Miller Park Way/National Avenue). This would minimize economic and traffic impacts, reducing the potential for neighborhood encroachment effects.

The Double Deck alternative on the west segment would have the greatest potential for neighborhood encroachment-alteration effects along the mainline. This alternative would require the acquisition of 10 residences (mostly on the south side of I-94 and near the Hawley Road interchange) and would have the widest footprint west of the cemeteries. Also, the Double Deck alternative would be at a higher grade compared with the existing freeway corridor. The top of the crash barriers of the elevated portion of the Double Deck alternative would be as high as 30 feet above adjacent grade for the all up option, and the elevated ramps would range from 0 feet to 30 feet (to the top of the crash barriers) above adjacent grade. As discussed in EIS Section 3.10, Visual Character/Aesthetics, the Double Deck alternative west of Hawley Road would change the visual setting of the surrounding area due to the greater width and taller bridges associated with the Double Deck alternative compared to existing I-94, it would be seen over a greater area than existing I-94.

The elevated structures associated with the Double Deck alternative and some of the elevated ramps associated with the Stadium Interchange have generated the most concern in adjacent neighborhoods, particularly the Story Hill neighborhood. This potential effect was discussed by local stakeholders, including a letter submitted by the Story Hill Neighborhood Association dated June 4, 2013, which states the height of the Double Deck freeway section would have negative effects on the neighborhood character. As discussed in EIS Section 3.24, Historic Properties, WisDOT and FHWA have determined that the visual impacts of the all up and partially down options for the Double Deck alternative would have a potential Adverse Effect on the Story Hill Residential Historic Districts 2 and 3. (See Section 2.4.5.4 of this report for historic resource discussion.)

Some aspects of the Double Deck alternative may benefit primary study area neighborhoods. For example, freeway traffic operations under the Double Deck alternative are expected to be better compared with the At-grade alternative because more traffic would be diverted from local arterials to the freeway. Also, the Hawley Road interchange would be reconstructed as a full-access interchange under this alternative. This would maintain access to adjacent neighborhoods and business districts and it would not shift traffic to other local arterials that already experience congestion during peak travel periods.

The study team determined that the magnitude of neighborhood encroachment effects would be moderated by several factors: The neighborhoods adjacent to the west segment are some of the City of Milwaukee's more stable, middle-class neighborhoods that have relatively lower poverty rates, higher home ownership rates and fairly stable population figures. The attributes that make these neighborhoods desirable places to live – central locations, close proximities to downtown, historic architecture and compact walkable neighborhoods – would not be changed by the Modernization Alternatives. In addition, WisDOT reduced the footprint of the Stadium Interchange design as part of the preferred alternative, further shifting the interchange from residential neighborhoods.

The only residential area along the east segment is located north of I-94 between the Stadium Interchange and 27th Street. This area is known as the Merrill Park neighborhood, which also includes Hilltoppers and Valley Park neighborhoods. The study team determined the potential for indirect neighborhood encroachment-alteration effects is less likely for the east segment due to the land use make up and the proposed infrastructure improvements. Interchange access to the neighborhood at 35th Street would remain in all directions for both Modernization Alternatives and access to 27th Street would increase under the Off-alignment alternative. Only three residential relocations would be required for the east segment for both Modernization Alternatives, leaving the larger Merrill Park neighborhood intact. To the east of 32nd Street, the freeway alignment would actually shift south, away from the Merrill Park neighborhood under both Modernization Alternatives (150 feet to the south for On-alignment and 400 feet for Off-alignment). To the west of 32nd Street braided ramps that would serve local

interchanges at 35th Street and 27th Street would be constructed. The ramps would run along Park Hill Avenue and would replace the existing freeway ramps. Some portions of the ramps would be elevated while other portions would be at-grade. According to EIS Section 3.10, Visual Character/Aesthetics, the elevated bridges would be consistent with the existing landscape because the area already has views of transportation infrastructure.

Consequences of the Modernization Alternative Neighborhood Encroachment Effects

As discussed previously, the greatest likelihood for neighborhood encroachment-alteration effects would occur on the west segment of the project corridor and to a lesser extent along the east segment in the Merrill Park area. Neighborhood encroachment-alteration effects could make the neighborhoods adjacent to I-94 more susceptible to urban decline if people begin to move out of the neighborhood. Urban decline is often associated with diminished property values, lower homeowner rates, and increases in the occurrence of crime.

The neighborhood encroachment effects would be moderated by the fact that the neighborhoods on the west segment are some of the City of Milwaukee's more stable, middle-class neighborhoods that have relatively lower poverty rates, higher home ownership rates, and fairly stable population figures. On the east segment, the city of Milwaukee is already taking steps to revitalize the Merrill Park neighborhood, which is a Targeted Investment Neighborhood. Furthermore, the attributes that make the neighborhoods adjacent to the freeway desirable places to live such as a central location, close proximity to downtown, historic architecture and compact walkable neighborhoods would not be changed by the Modernization Alternatives.

Potential Mitigation Measures for Neighborhood Encroachment Effects

The Modernization Alternatives would present an opportunity to construct noise barriers that could improve the quality of life for residents in closest proximity to the freeway. According to EIS Section 3.19, Noise, there is an existing noise impact as well as a noise impact with both Modernization Alternatives.

The Modernization Alternatives would reduce congestion along the freeway and minimize traffic that diverts to local streets. This would improve air quality by reducing idling and stop-and-go traffic. Also, it would improve safety on local streets by minimizing conflicts between pedestrians and vehicles especially on heavily traveled arterial corridors.

Local governments in the primary study area are already taking measures to improve neighborhood environments. For example, the City of Milwaukee has various neighborhood investment and housing rehabilitation programs. The city uses a Targeted Investment Neighborhood strategy to concentrate available housing resources in targeted areas to improve owner-occupancy rates and improve affordable rental housing. The primary study area has two Targeted Investment Neighborhood—Burnham-Layton and Merrill Park neighborhoods. Furthermore, the continued presence of neighborhood associations in the primary study area would help maintain a stable and cohesive neighborhood environment.

2.4.5.2 Business Encroachment-Alteration Effects

The following subsections discuss the project's potential business encroachment-alteration effects.

No-build Alternative Business Encroachment Effects

Business encroachment effects under the No-build alternative would not occur because the freeway would not be realigned and the proposed new bridge structure under the Off-alignment alternative would not be built. Also, all access ramps at the Hawley Road interchange would remain in place and the Mitchell Boulevard interchange would remain.

Modernization Alternatives

The Off-alignment alternative on the east segment is likely to result in business encroachment-alteration effects to the south of the freeway in the Menomonee Valley. Under the Off-alignment alternative, I-94 would be rebuilt

several hundred feet south of the existing alignment in the area between 27th and 25th streets to straighten the freeway mainline.

As documented at the June 6, 2013, focus group meeting, stakeholders indicated the proposed bridge carrying I-94 over St. Paul Avenue under the off-alignment alternative would create a perceived barrier to the entrance of the Menomonee Valley and could have a blighting influence on adjacent lands over time (similar to other elevated freeway bridges in the Milwaukee area). Realigning of I-94 could create areas of undevelopable land that could attract nuisance activities such as car break-ins, graffiti, and litter. According to Menomonee Valley stakeholders, small pockets of existing remnant parcels next to the freeway between 27th and 25th streets are already prone to nuisance activities. For these reasons, the study team determined the Off-alignment alternative could hinder the redevelopment potential of the Menomonee Valley, particularly parcels along the St. Paul Avenue corridor. According to the Menomonee Valley plan update that is under way, the St. Paul Avenue corridor, and the adjacent riverfront properties have been identified as one of the next areas on which the city and the Menomonee Valley Partners will focus redevelopment efforts.

In addition, the Off-alignment alternative would go through or over some potential future redevelopment sites such as the former Wisconsin Department of Motor Vehicles site, potentially reducing future employment opportunities within the Menomonee Valley. In the Menomonee Valley, the On-alignment alternative would also have some business impacts, although less than the Off-alignment alternative. According to Menomonee Valley stakeholders, the businesses in the area provide job opportunities for residents in neighborhoods that are north and south of the Menomonee Valley. As a result, preserving and creating job opportunities in the Menomonee Valley is important because it provides jobs in close proximity to environmental justice populations that often rely on walking, biking, and transit as ways to get to work.

As a result of the Off-alignment alternative, some land used as highway right-of-way adjacent to I 94 may no longer be needed for right-of-way. WisDOT may declare the land excess right-of-way, and the land could be redeveloped and converted to a different land use.

The On-alignment alternative (preferred alternative) would overall displace more businesses in comparison to the Off-alignment alternative (six for the Off-alignment and eight for the On-alignment) along the east segment. However, the majority of the business displacements under the On-alignment alternative would be located north of I-94 around the 27th Street corridor because the 27th Street/St. Paul Avenue intersection would need to be expanded to accommodate the exit and entrance ramps that tie in to St. Paul Avenue rather than 27th Street. Removing established business from this area may make it more challenging to revitalize the 27th Street corridor as envisioned by the City of Milwaukee Near West Area Plan and the Avenues West Redevelopment Plan.

Under the At-grade alternative on the west segment, the Hawley Road interchange would be closed or only partial access would be provide to and from the west. As discussed previously in Section 2.4.4, this would have negative effects to existing and planned development along the 60th Street corridor in West Allis such as the Renaissance Faire office building. The loss of access in this area could result in businesses moving out of the area, which would potentially cause blighting conditions from underutilized or vacant buildings. This effect would be minimized by the Washington Street extension that WisDOT intends to construct between 60th and 70th Streets as part of the At-grade alternative with a half interchange at Hawley Road.

Consequences of the Modernization Alternatives Business Encroachment Effects

Realigning I-94 on the east segment under the Off-alignment alternative could diminish the future development potential of the St. Paul Avenue corridor and would eliminate some future redevelopment sites in this area. According to Menomonee Valley stakeholders, the businesses in the area provide job opportunities for residents in neighborhoods that are north and south of the Menomonee Valley. Preserving and creating job opportunities in the Menomonee Valley is important because it provides jobs in close proximity to environmental justice populations that more often rely on walking, biking, and transit as ways to get to work. In addition, land that would be vacated by the existing freeway alignment in the Menomonee Valley may not be developable due to the

difficult grade changes in the area and the presence of freeway infrastructure. This could result in vacant land that may attract nuisance activities and make it more challenging to redevelop the St. Paul Avenue corridor.

Business relocation impacts under the On-alignment alternative to the north of I-94 may make it more challenging to achieve local land use and economic development goals for this corridor. The City of Milwaukee and the Avenues West neighborhood have been working to revitalize the 27th Street corridor by attracting new businesses, eliminating vacant properties, and reducing the commercial vacancy rate. This potential business encroachment effect would be minimized by the fact that the city of Milwaukee's redevelopment efforts for the 27th Street corridor are focused on the area between Clybourn Street and Highland Avenue, which is north of the area that would be impacted by business relocations.

Potential Mitigation Measures for Business Encroachment Effects

For the 27th Street corridor to the north of I-94 under the On-alignment alternative, WisDOT will work with displaced businesses and conducts relocations in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. If desired by the business and adequate space is available, WisDOT could help to relocate businesses nearby or in another location along 27th Street, which could help local revitalization goals. The City of Milwaukee could use redevelopment tools such as tax increment financing to help assemble parcels in the impacted area and create a more cohesive development site for a new business. Ongoing redevelopment efforts undertaken by the City of Milwaukee, the Menomonee Valley Partners, and private land owners would continue to strengthen this business district.

See the proposed mitigation measures discussed under Section 2.4.4, Land Use Effects Related to Interchange Modifications—Primary Study Area, for potential mitigation measures that could be used to address the closure or partial closure of the Hawley Road interchange.

2.4.5.3 Natural Resource Encroachment-Alteration Effects

The following subsections discuss the project's potential natural resource encroachment-alteration effects.

No-build Alternative Natural Resource Encroachment Effects

Under the No-build alternative, stormwater would continue to drain off the existing pavement and generally enter area waterways and ditches untreated. Water that drains off bridges would fall directly into waterways below. Few areas of I-94 and the local roadway system would have treatment techniques to remove suspended solids from stormwater runoff. Less stormwater would drain off I-94 and the local roadway system into the Menomonee River under this alternative compared to the Modernization Alternatives, but the level of pollutants would be higher.

Modernization Alternative Natural Resource Encroachment Effects

Under the Modernization Alternatives, there would be more stormwater runoff because I-94 would have more pavement area due to an additional travel lane, wider shoulders in some locations, and longer on- and off-ramps. As discussed in EIS Section 3.11, Surface Water and Fishery, the increase in impervious area for the I-94 East-West Corridor depends on the alternative and ranges from 11 to 22 percent for the west segment and 67 percent to 91 percent for the east segment. This could indirectly affect areas downstream from the Menomonee River by increasing the volume of stormwater runoff to the river. Several stakeholders stated stormwater management and flooding is an important consideration for the primary study area since some areas are already susceptible to flooding such as some areas of the Menomonee Valley.

Consequences of the Modernization Alternative Natural Resource Encroachment Effects

Increases in stormwater runoff as a result of the Modernization Alternatives could indirectly affect the Menomonee River. As discussed in EIS Section 3.11, Surface Water and Fishery, increases in runoff volumes in highly developed areas like the primary study area contribute to frequent and more severe flooding problems.

Additionally, this runoff picks up a variety of pollutants from the surrounding landscape and carries it to the stream. Even small storms in highly developed areas can produce dramatic "pulses" of high flows and pollutant loads. Because these high flow pulses occur on a more or less regular basis, they can lead to stream channel erosion, bank instability, pollutant related toxicity to aquatic organisms and washout of aquatic organisms that live in the stream upon which fish feed. For these reasons, the Milwaukee Metropolitan Sewerage District (MMSD) and other stakeholders have stated a concern over increases in impervious surface area from the I-94 East-West project as it relates to increased stormwater runoff within the immediate project area and downstream.

Potential Mitigation Measures for Natural Resource Encroachment Effects

WisDOT and FHWA are investigating retention/detention basins to manage stormwater from the Modernization Alternatives. The retention/detention ponds would also improve water quality by allowing solid pollutants (sand, grit, etc.) to settle out of the water before it flows into storm sewers or streams. Also, WisDOT and FHWA are evaluating the use of best management practices to reduce the level of pollutants in stormwater runoff and provide an opportunity to bring I-94 and the local roadway system in compliance with Wisconsin's stormwater management regulations. See EIS Section 3.11, Surface Water and Fishery, for more information.

Induced development within the primary study area could increase impervious areas and create more stormwater runoff that increases the risk for flooding and affects water quality. This consequence of development would be managed by local stormwater regulations. All communities within the primary study area are part of the MMSD service area and are required to follow the MMSD Chapter 13 Surface Water and Storm Water Rules to control stormwater runoff and minimize the risk for flooding. MMSD's rules apply to any development that increases impervious surfaces by one-half acre or more. The rules also apply to redevelopment projects that disturb an area larger than 1 acre.

2.4.5.4 Historic Resource Encroachment-Alteration Effects

The following subsections discuss the project's potential historic resource encroachment-alteration effects.

No-Build Alternative

Under the No-build alternative, the freeway would remain in its current configuration and would not indirectly affect historic resources.

Modernization Alternatives

The following National Register listed or eligible properties are located within close proximity to the I-94 East-West corridor:

- Northwestern Branch of the National Home for Disabled Volunteer Soldiers (Soldiers' Home NHL)—listed in the National Register
- Northwestern Branch of the National Home for Disabled Volunteer Soldiers Historic District (Soldiers' Home Historic District)—listed in the National Register
- Soldiers' Home Reef NHL—also listed in the National Register
- Calvary Cemetery—eligible for listing in the National Register
- Story Hill Residential Historic District 1—eligible for listing in the National Register
- Story Hill Residential Historic District 2 and 3—eligible for listing in the National Register

As discussed in EIS Section 3.24, Historic Properties, only a small amount of land (0.20 acre from the Soldiers' Home NHL due to off-interstate local road improvements) would be acquired from any of the historic properties as part of the I-94 East-West Corridor project. Nonetheless, the Section 106 process has determined that some of

the alternatives under consideration would have an Adverse Effect, under Section 106, on the following historic properties:

- The Double Deck alternative would result in an Adverse Effect under Section 106 to the Soldiers' Home NHL and Soldiers' Home Historic District due to the visual impacts to the setting and feeling of Wood National Cemetery and because parts of Zablocki Drive, a contributing element, would be realigned.
- The Double Deck alternative would have an Adverse Effect on Calvary Cemetery and Story Hill Residential Historic District 2 and 3 due to visual impacts that could diminish the integrity of setting and feeling of the properties.

FHWA, in consultation with the consulting parties, has determined that the At-grade alternative could be designed to have No Adverse Effect on the Soldiers' Home NHL and Soldiers' Home Historic District under 36 CFR 800.5(b) (FHWA 2014). The Programmatic Agreement, which is being created in consultation with the consulting parties, will stipulate the appropriate design review process and other steps to be taken to ensure that there will be No Adverse Effect on the Soldiers' Home Historic District and the Soldiers' Home NHL.

The encroachment impacts to the Soldiers' Home NHL are not expected to cause substantial indirect effects that would lead to disinvestment of the property. Efforts are underway to restore vacant buildings on the Soldiers' Home property for reuse by the veterans' community and the region in general. The historic property would remain intact and the Modernization Alternatives would not alter the functioning of the site's primary use nor would it prohibit the functioning of special events. .

As discussed in Section 2.4.5.1, indirect encroachment-alteration effects to the Story Hill neighborhood could impact the neighborhood if people begin to move out of the neighborhood. However, the study team determined that the magnitude of this effect would be moderated by the fact that the Story Hill neighborhood would remain intact. Also, it is a stable middle class neighborhood that has a relatively low poverty rate, higher home ownership rate and fairly stable population figures. As discussed in Section 2.4.5.1, the attributes that make this neighborhood a desirable place to live such as a central location, close proximity to downtown, historic architecture and compact walkable neighborhoods would largely remain intact under the Modernization Alternatives.

Consequences of the Modernization Alternative Historic Resource Encroachment Effects

As discussed previously, the Double Deck alternative would have an Adverse Effect on the Soldiers' Home NHL and Soldiers' Home Historic District, Calvary Cemetery, and Story Hill Residential Historic District 2 and 3. Since these resources would remain intact, impacts are not expected to have substantial indirect effects that would affect the functioning of Calvary Cemetery, the NHL, Historic District, and the Story Hill neighborhood.

Potential Mitigation Measures for Historic Resource Encroachment Effects

As discussed in EIS Section 3.24, under the preferred alternative, there would be No Adverse Effect on historic properties. The Programmatic Agreement being developed for this project is designed to ensure that there will be No Adverse Effects on historic properties. To ensure the No Adverse Effect finding, the Programmatic Agreement will include minimization measures that include plans for: freeway design review, construction staging, Wood National Cemetery wall design, landscaping, and signage. The development of the Programmatic Agreement is ongoing, so the items included to minimize harm to historic properties may change through the consultation process.

3 CUMULATIVE EFFECTS

The Code of Federal Regulations (CFR) Title 40 defines cumulative effects as follows:

Cumulative effects are the impacts on the environment, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR § 1508.7).

The cumulative effects analysis considers the resources that could be affected directly or indirectly by the I-94 East-West Corridor Study alternatives when combined with other actions that potentially affect the same resources. Disturbances to resources from highway improvements or land use changes may impact an area's hydrology, habitat quality and species diversity. Impacts may also affect human communities by causing changes in traffic patterns, aesthetics, and housing and employment patterns.

The methodology used to assess cumulative effects for the I-94 East-West Corridor Study is based on the CEQ's 11-step process identified in the handbook titled *Considering Cumulative Effects under the National Environmental Policy Act*, January 1997 (Council on Environmental Quality 1997), and WisDOT's *Guidance for Conducting a Cumulative Effects Analysis* (WisDOT 2007a). The process's 11 steps were organized into the following three main steps: scoping, describing the affected environment, and determining the environmental consequences.

Section 3.1 describes the cumulative effects scoping process, and Section 3.2 describes the affected environment and environmental consequences for each resource.

3.1 Step 1: Scoping Cumulative Effects

The cumulative effects analysis considers the resources that could be affected directly or indirectly by the I-94 East-West Corridor Modernization Alternatives when combined with other past, present or reasonably foreseeable future actions that potentially affect the same resources or human communities. Based on the anticipated direct and indirect project effects, the following resources were reviewed for potential cumulative effects within the project corridor:

- Environmental corridors and stream crossings
- Surface water quality and quantity
- Business areas
- Neighborhoods
- Municipal tax base
- Regional land use patterns
- Air quality
- Construction impacts

The stakeholder input that was described in Section 2.1.2 above for the indirect effects analysis was utilized to help identify potential cumulative effects that need to be addressed in the EIS. In addition, Section 2 above was used to inform the cumulative effects analysis and contains information about demographics, land use trends and natural, recreational and cultural resources.

3.1.1 Cumulative Effects Issues

As discussed in WisDOT and Council on Environmental Quality guidance, the cumulative effects analysis should consider resources that may be directly or indirectly affected by the project, focusing on the most important cumulative effects issues. To determine the resources that would be evaluated in the cumulative effects section, the study team reviewed the direct and indirect effects in EIS Section 3, considered stakeholder input described in Section 2.1.2 and considered the demographic, land use, and natural, recreational and historic resources information discussed in Section 2.2. Table 23 summarizes the resources evaluated for cumulative effects and lists the corresponding section in the EIS.

Table 23: Evaluated Resource Area and Corresponding EIS Section

Resource	Reference in EIS
Environmental corridors and stream crossings	EIS Section 3.12; Environmental Corridors and Natural Areas
Surface water quality and quantity	EIS Section 3.11; Surface Water and Fishery
Business areas	EIS Section 3.6; Commercial and Industrial Development
Neighborhoods	EIS Section 3.5; Residential Development and Section 3.8; Socioeconomic Characteristics
Municipal tax base	EIS Section 3.8; Socioeconomic Characteristics
Historical properties	EIS Section 3.24; Historic Properties
Regional land use patterns	EIS Section 3.28, Indirect Effects and Section 3.29 Cumulative Effects; ICE Section 2, Indirect Effects Analysis
Air quality*	EIS Section 3.20, Air Quality
Construction impacts	EIS Section 3.27; Construction

** Air quality was included in cumulative effects discussion because air quality concerns have been raised by the public as a resource of concern. Based on the air quality analyses completed for the proposed improvements, the I-94 East-West corridor project will not contribute to any violation of the NAAQS. MSAT emissions will decrease with any of the Modernization Alternatives, and neither carbon monoxide nor $PM_{2.5}$ levels will exceed the air quality standards.*

3.1.2 Cumulative Effects Study Area

The study area for cumulative effects varies depending on the resource being discussed; the study areas for the direct and indirect effects of the project also are considered. The resource study areas are based on the scale of human communities, watersheds and airsheds, as these boundaries consider the distance at which cumulative effects of past, present and reasonably foreseeable actions listed in Table 25 could occur. Table 24 shows the cumulative effects study area for each evaluated resource.

Table 24: Cumulative Effects Study Area by Resource

Resource	Study Area
Environmental corridors and stream crossings	Milwaukee County
Surface water quality and quantity	Menomonee River watershed in Milwaukee County
Business areas	Milwaukee County
Neighborhoods	Milwaukee County
Municipal Tax Base	Milwaukee County
Historical Properties	Milwaukee County
Regional land use patterns	Milwaukee and Waukesha counties
Air quality	Southeast Wisconsin Region
Construction impacts	Milwaukee County

3.1.3 Timeframe for the Analysis

One of the goals of scoping is to determine a timeframe for the analysis. The Council on Environmental Quality guidance indicates that the analysis timeframe usually does not extend past the timeframe when project-specific effects drop below a level determined to be significant. However, the analysis should also consider the project effects timeframe combined with other reasonably foreseeable actions within and beyond the project timeframe that could create a significant cumulative effect.

The timeframe for the analysis assumes a maximum of 20 years after construction, which is 2040. This coincides with the design year, but also reflects the availability of data. The benefit of this timeframe is that it typically is consistent with the planning horizons used for regional land use and transportation planning purposes. This timeframe is long enough for cumulative effects to unfold, but it is not so far into the future that the effects become too difficult for the study team to reasonably anticipate.

The study team determined sufficient data and plans are available to assess anticipated conditions in 2040. The current regional land use and transportation plan time horizons are 2035, which leaves a five-year gap. However, other resources are available to assess trends beyond the 2035 timeframe, which are listed in Section 2.1.4.

3.1.4 Identify Past, Present, and Reasonably Foreseeable Future Actions

Milwaukee County has historically been exposed to development as urbanization pushed westward from the core cities along the lakefront. As discussed in Section 2.2.2, the I-94 East-West corridor is characterized as a fully built out and established urban area. The area also supports numerous regional attractions and employment destinations. In general, communities in the study area are focusing on maintaining development, improving neighborhoods and redeveloping underutilized commercial and industrial areas.

Given the history of development around the project corridor and the ongoing redevelopment of former industrial areas, many past, present and reasonably foreseeable future actions may contribute to cumulative impacts within the cumulative effects study areas. Table 25 provides a list of other actions that, when considered in combination with the I-94 East-West Corridor, may have cumulative effects on the environment.

Table 25: List of Past, Present and Reasonably Foreseeable Future Actions

Timeframe	Action	Location within Study Area
Past	Historic urban/suburban development	Milwaukee and Waukesha counties
Past	VA campus and medical center	City of Milwaukee
Past	Miller Park	City of Milwaukee
Past	Original construction of US 45, I-94, I-794 and I-894	Milwaukee and Waukesha counties
Past	Canal Street reconstruction	City of Milwaukee
Past	MMSD flood management projects and creek restorations	Milwaukee County
Past	Oak Creek Coal Power Plant expansion	Milwaukee County

Timeframe	Action	Location within Study Area
Past	Redevelopment of former industrial areas	Milwaukee, West Allis, West Milwaukee and Wauwatosa
Past	Marquette Interchange Reconstruction	City of Milwaukee
Past	Declining transit service levels	Milwaukee and Waukesha counties
Past	MCTS Express Routes	Milwaukee County
Present	Reconstruction and widening of I-94 North-South corridor	Milwaukee, Racine and Kenosha counties
Present	Expansion of MCTS express bus routes	Milwaukee County
Present	Zoo Interchange freeway reconstruction	Milwaukee County
Present	I-794 Lake Interchange ramp modifications and associated local road improvements (Lakefront Gateway Project)	Downtown Milwaukee
Present	Speed limit change from 65 to 70 mph	Western Waukesha County
Present	Milwaukee Streetcar Phase 1 Route and Lakefront Line	Downtown Milwaukee
Present	New Milwaukee Bucks NBA Arena	Downtown Milwaukee
Present	US 41 Interstate Conversion (I-41 signing)	Milwaukee County
Present	Development of former Park East freeway corridor	Downtown Milwaukee
Present	Menomonee Valley redevelopment	City of Milwaukee
Present	MMSD flood management and fish passage projects	Menomonee River watershed
Present	Valley Power Plant conversion	City of Milwaukee
Future	Ongoing redevelopment of former industrial areas	Milwaukee, West Allis, West Milwaukee, and Wauwatosa
Future	Ongoing development in Waukesha County	Waukesha County
Future	Freeway reconstruction and potential widening of I-94 through Waukesha County	Waukesha County

Timeframe	Action	Location within Study Area
Future	Freeway reconstruction and potential widening of US 45/I-41	Milwaukee, Waukesha and Washington counties
Future	Freeway reconstruction and widening of I-43	Milwaukee and Ozaukee counties
Future	MMSD Menomonee River restoration projects	Milwaukee County
Future	Redevelopment of Milwaukee Mile at State Fair Park	West Allis

3.2 Describe the Affected Environment, and Determine the Environmental Consequences and Potential Mitigation Measures

This section describes the resources that could experience cumulative effects as a result of the I-94 East-West Modernization Alternatives and the other past, present and reasonably foreseeable actions listed in Table 25. For each resource, the affected environment is summarized first including an established baseline condition and the resources' capacity to withstand stress in relation to regulatory thresholds. Then, an evaluation of the environmental consequences is conducted for each resource. This includes examining the cause-and-effect relationship between human activities and affected resources, and determining the magnitude and significance of the cumulative effects. The evaluation also considers avoidance, minimization and mitigation measures WisDOT can undertake for the Modernization Alternatives to minimize cumulative effects to the greatest practical extent. It also considers other local, state and federal ordinances and laws that can further manage cumulative effects that result from the project's direct and potential indirect effects. The findings of the analysis are summarized by resource in the following sections.

3.2.1 Environmental Corridors and Stream Crossings

This section describes the potential cumulative effects to environmental corridors in Milwaukee County.

Affected Environment

The Menomonee River, which flows under I-94, is located in a primary environmental corridor. SEWRPC reports the environmental corridors are home to the most important elements of the natural resource base, including wetlands, woodlands, prairies, wildlife habitat and streams, as well as historic, recreational and scenic sites throughout the region. Primary environmental corridors are at least 400 acres in size, 2 miles long and 200 feet wide. Milwaukee County contains over 9,000 acres of primary environmental corridors, which is 5.8 percent of the county. The corridors typically follow stream valleys and surround major lakes and flood lands.

Historically, land development has impacted natural resources throughout Milwaukee County. According to SEWRPC, nearly 83 percent of pre-European-settlement vegetation in Southeastern Wisconsin had been removed by 1990. (SEWRPC 1997) Past development has altered the Menomonee River corridor through removal of native vegetation and channelization, which in turn has led to soil erosion, increased stormwater runoff and flood flows and lost wildlife habitat.

In light of historical and planned development in Milwaukee County, the preservation of this resource base is especially important. SEWPRC reports that the preservation of environmental corridors reduces flooding and noise pollution; improves water quality; and reduces impacts to the man-made environment. Therefore, local municipalities seek to protect these resources from further encroachment through zoning and permitting regulations. In Milwaukee County, the majority of environmental corridors are publicly owned to ensure their preservation.

MMSD is in the process of removing 1,100 feet of a steep concrete bed in the Menomonee River north of Wisconsin Avenue and north of the I-94 study limits. The project will eliminate a barrier to fish and wildlife passage. Stream restoration will open up 17 miles of river, plus 20 miles of tributaries, which will allow fish to reach the Lepper Dam in Menomonee Falls. The Corps of Engineers is reviewing the feasibility of removing the remaining 3,700-foot section of concrete lining downstream of Wisconsin Avenue and 300 feet south of I-94. Redevelopment activities in the Menomonee Valley have also allowed restoration to occur along the riverfront through re-established natural banks and vegetation.

Environmental Consequences/Potential Mitigation

All Modernization Alternatives would maintain the one stream crossing of the Menomonee River; no new crossings would be created. The construction of new bridges for the reconstructed Stadium Interchange under the Modernization Alternatives would directly impact about 2 acres of environmental corridor along the Menomonee River. Design modifications have been made to minimize the impact, but no feasible solutions are available to completely avoid the impact. As a result, the project, in combination with past, present and reasonably foreseeable future actions may cumulatively affect the Menomonee River environmental corridor.

SEWRPC's regional land use plan recommends long-term preservation of environmental corridors by limiting development within them to uses that are compatible with conservation such as transportation and utility facilities. Also, ongoing MMSD flood management and stream restoration activities would result in a positive cumulative effect that supports the environmental corridor functions. Thus, the likelihood of a cumulative effect to primary environmental corridors from other development actions would be limited. Other future transportation projects, such as the reconstruction of US 45, could potentially have similar impacts to the I-94 East-West Corridor Modernization Alternatives. Clear-spanning the Menomonee River can minimize the direct impact and cumulative effect of highway development in the environmental corridor.

Potential temporary effects from construction would be avoided and minimized by using WisDOT's *Standard Specifications for Road and Bridge Construction* (2009b) and complying with Wisconsin's Trans 401 regulations (WisDOT 2013) that oversee construction-site erosion control and stormwater management. Local governments would continue to be responsible for regulating through land use policies, zoning, and permitting rules development that could affect environmental corridors.

3.2.2 Surface Water Quality and Quantity

This section describes the potential cumulative effects to surface water quality and quantity within the Menomonee River watershed in Milwaukee County.

Affected Environment

The I-94 East-West corridor is located in the Menomonee River watershed. The watershed has 96 miles of rivers and streams, and it drains 136 square miles into Milwaukee, Ozaukee, Washington and Waukesha counties. Land cover within the watershed is primarily urban or suburban (52 percent) with substantial amounts of agriculture (22 percent) and open water and open space (14 percent) cover. The Menomonee River is 33 miles long and is a tributary to the Milwaukee River. The river originates in the Village of Germantown and the City of Mequon, and it flows in a southeasterly direction before it meets the Milwaukee and Kinnickinnic rivers in the Milwaukee Harbor Estuary.

Water quality in the watershed has been affected by historic human activities, such as farming practices and urban development. Stormwater runoff from farm fields carry suspended solids from soil erosion, nutrients and pesticides to streams. Runoff from urban environments contains suspended solids from eroding stream banks and impervious surfaces like parking lots, buildings, streets and highways. Urban development is also the source of water pollutants such as fecal coliform bacteria, salts and nutrients. As a result of pollutant loads in the watershed, the Menomonee River is listed on the Wisconsin Department of Natural Resources (WWDNR) "Impaired Waters" list. It also has a Section 303(d) designation, which means that the water body does not meet

federal Clean Water Act standards. The pollution types present include fecal coliform, unspecified metals, polychlorinated biphenyls (PCBs), total phosphorus, and E. coli. Recreational restrictions are in place due to pathogens, chronic aquatic toxicity, contaminated fish tissue, and low dissolved oxygen.

Sources of pollution are defined as either point or nonpoint sources of pollution. Point sources are pollutants that are discharged to surface waters at discrete locations. (SEWRPC 2007) Common sources of point source pollution include discharges from sewage treatment plants and industrial discharges. Nonpoint sources of pollution are discharges of pollutants to the surface waters, which cannot be readily identified as point sources of pollution. (SEWRPC 2007) Nonpoint sources enter surface waters via stormwater runoff from rural and urban land uses.

Point sources of pollution have been highly regulated for decades through the federal Clean Water Act and the National Pollutant Discharge Elimination System (NPDES). Regulations for nonpoint sources of pollution have been enacted more recently. WDNR regulates runoff from nonpoint sources for urban and rural land uses through the performance standards for runoff management provided in NR 151 of the Wisconsin Administrative Code (WDNR 2013)

Throughout the Menomonee River watershed, point and nonpoint source pollution has degraded surface water quality. Table 26 presents estimated pollution loads for point and nonpoint sources to the Menomonee watershed. Given the dispersed nature of nonpoint sources of pollution, it has been difficult to control. As a result, nonpoint sources of pollution are the largest contributor of pollutants to the Menomonee River watershed. The Wisconsin Department of Natural Resources has identified urban nonpoint pollution as a key water quality concern in the Menomonee River watershed. Between 1970 and 2000, urban land use increased from 50.9 percent of the watershed to 63.8 percent. (WDNR 2010)

Table 26: Pollution Loads - Menomonee River Watershed

Pollution Type	Point*	Nonpoint**	Estimated Total
Biochemical oxygen demand	13.6%	86.4%	1,352,690 lbs/year
Total suspended solids	1.5%	98.5%	17,963,790 lbs/year
Fecal coliform bacteria	14.0%	86.0%	16,873 lbs/year
Phosphorus	37.7%	62.3%	53,120 lbs/year

Source: Water Quality Conditions and Sources of Pollution in the Greater Milwaukee Watersheds. Southeastern Wisconsin Regional Planning Commission. Technical Report No. 39
** Includes discharges from sewage treatment plants and separate sanitary sewer overflows and industrial discharges*
*** Includes urban and rural runoff*

The quantity of stormwater runoff is also a concern for Milwaukee County and the Menomonee River watershed. According to MMSD, depending on soil conditions, as much as 50 percent of rainfall can be absorbed directly into the ground in areas with low levels of development, with only about 10 percent of this water running off the land. In contrast, where the land has been extensively developed as in highly urbanized areas such as Milwaukee County, very little water is absorbed into the ground. Instead, more than half of the water runs off the land and across the hard, impervious surfaces of buildings, streets, highways and parking lots. According to MMSD, low-flow conditions can be equally as stressful, creating conditions of lower flow and higher water temperature extremes during dry periods. This occurs because rainfall sheds off the land too quickly in urbanized areas, not allowing rainwater time to replenish the groundwater flow to the stream in a slow, sustainable manner.

The amount of stormwater runoff from highways increases proportionately to the amount of impervious surface. Runoff from roadways can increase the amount of water in area streams above normally carried capacities. Stormwater that runs off of I-94 is collected in storm sewers. About half of the storm sewers eventually discharge to the Menomonee River. The east end of the project corridor, from roughly 35th Street through the eastern project limit is in MMSD's combined sewer service area. Stormwater collected in this area is directed to combined sewers, which flow to the sewage treatment plant, and is treated before discharging to Lake Michigan.

MMSD and its partners have been working to reduce flooding along the Menomonee River. Extensive flooding that occurred in Milwaukee County in 1997, 1998 and 2000 caused $96 million of damage to homes, businesses

and neighborhoods (MMSD 2006). MMSD completed extensive work at the Milwaukee County Grounds to capture and store potential floodwater in one large basin that covers about 65 acres and holds 315 million gallons of water. A one-half-mile-long underground tunnel that is 17 feet in diameter channels excess water from Underwood Creek into the basin. From there, the water will be slowly released into the Menomonee River, reducing the risk of flooding downstream (Milwaukee Metropolitan Sewerage District 2014). Also, MMSD completed the Hart Park project to reduce the risk of flooding in downtown Wauwatosa and downstream in Milwaukee along the Menomonee River.

MMSD is removing 1,100 feet of concrete from the bed of the Menomonee River north of Wisconsin Avenue and north of the I-94 project limits as of summer of 2014. This Menomonee River project will eliminate a barrier to fish passage between Lake Michigan and upstream stretches of the river. As part of the project, a 58-foot-wide concrete lining will be removed and restored with a more natural, meandering streambed, with rock riffles and pools in which fish can rest. Removal of the lining will also open 17 miles of the main river—through Wauwatosa to Lepper Dam at Mill Pond Park in Menomonee Falls—to fish migration ("MMSD to spend $3.98 million to remove Menomonee River concrete," Milwaukee Journal Sentinel, May 6, 2013).

Environmental Consequence/Potential Mitigation

Urban activities throughout the watershed in the project area also contribute to flooding events in the area. MMSD has stated its concern about the cumulative effect of increased impervious surface area within the Menomonee River watershed as it relates to increased stormwater runoff from freeway reconstruction in Milwaukee County. As shown in Table 27, and discussed in EIS Section 3.11, Surface Water and Fishery, the increase in impervious area for the I-94 East-West Corridor depends on the alternative and ranges from 11 percent to 22 percent for the west segment and 67 percent to 91 percent for the east segment. The increase in impervious area would have only a slight change in total impervious area for the Menomonee River watershed, increasing the watershed's impervious area by 0.32 percent to 0.44 percent. The impervious area within the Menomonee River watershed also would be increased by the following past, present and future freeway reconstruction projects: the Marquette Interchange (past,) the Zoo Interchange (current), US 45 north of the Zoo Interchange project (future) and I-94 in Waukesha County (future).

Table 27: Impervious Surface Increase for the Menomonee River Watershed

Area	Element	No-Build/ Existing Conditions	Modernization Alternatives
Total Menomonee River Watershed	Land area (acres)	87,040	87,040
	Impervious surface area (acres)	12,656	12,696 to 12,712
	Impervious surface percent	14.54%	14.59 to 14.60%
	Impervious surface area percent increase	0%	0.32 to 0.44%
I-94 East-West Project Corridor	I-94 impervious surface area (acres)	79.8	120 to 136
	I-94 impervious surface increase	0%	(West Segment) 11 to 22% (East Segment) 67 to 91%

Notes: Menomonee River Total - 136 square miles (2010 Water Quality Management Plan Update); percent impervious computed based on land use from SEWRPC and TR-55.

While runoff volumes would increase under the Modernization Alternatives, the water quality analysis notes that the use of best management practices would reduce the level of pollutants in stormwater runoff compared with existing conditions and provide the opportunity to bring I-94 and the local roadway system in compliance with Wisconsin's stormwater management regulations.

Current and future land development within the Menomonee River watershed could cumulatively impact water quality despite any improvements implemented during the reconstruction of the I-94 East-West corridor and other freeway reconstruction projects. Redevelopment and development activities occurring in the watershed,

such as ongoing activities in the vicinity of the Watertown Plank/US 45 interchange, increase impervious area. Increased impervious area from these developments could increase the likelihood of stormwater carrying sediment and other pollutants in streams that are already heavily degraded from historic urbanization.

As discussed in EIS Section 3.11, Surface Water and Fishery, WisDOT and FHWA are evaluating several best management practices to minimize the amount of runoff that enters water bodies, reduces flow velocity, and improves the water quality of the runoff. The use of retention/detention basins to manage stormwater from the proposed improvement is being evaluated along all sections of the project as the most practical and efficient practice.

Short-term highway construction impacts to water quality would be avoided or minimized by using WisDOT's *Standard Specifications for Road and Bridge Construction* (2012) and complying with Trans 401 (WisDOT 2013), which regulates construction site erosion control and stormwater management for transportation facilities. WisDOT would monitor performance of its control measures through its WisDOT-WDNR cooperative agreement ("Memorandum of Understanding on Erosion Control and Stormwater Management"). This memorandum of understanding requires WisDOT to implement a stormwater management program for its projects that is consistent with Section 402(p) of the Clean Water Act, Chapter 283 of the State Statutes, and NR 216 (WDNR 2014). WisDOT is required to implement stormwater management measures to remove 40 percent of the total suspended solids discharged from their storm sewers after construction. Best management practices required under stormwater and non-point runoff rules are expected to improve water quality as future projects and ongoing redevelopment occur.

As noted above, Trans 401 outlines stormwater management and erosion-control procedures for WisDOT projects. A regional policy is in place to maintain the peak discharge rate at the design year storm event, which would be determined by location but is generally the 25-year or 50-year storm event. Another mitigation measure is construction of buffer areas upstream of waterways and wetlands. Additional coordination with WWDNR will determine stormwater management measures if build alternative is selected as the preferred alternative. WisDOT would implement best management practices for stormwater control and, therefore, would not cumulatively contribute to water quality impacts.

Compared with the No-build alternative, implementing best management practices for stormwater control under the preferred alternative can mitigate the direct effects of existing and increased stormwater runoff, which reduces the cumulative effects of past projects and other reasonably foreseeable future roadway projects. These measures, which would include stormwater retention, focus on stormwater quality, but have a secondary benefit of managing stormwater volume.

WDNR and local governments are responsible for monitoring the performance of stormwater management measures and making corrective actions for non-WisDOT projects. To mitigate the impact of non-point source runoff, NR 151 sets forth performance standards for stormwater quality-control measures. For example, 80 percent of the total suspended solids from site runoff must be removed on new construction sites 1 acre or larger. After construction, permanent measures must be in place to continue removing 80 percent of total suspended solids in stormwater runoff from the site.

3.2.3 Businesses

This section describes the potential cumulative effects to businesses within Milwaukee County.

Affected Environment

Milwaukee County contains the largest number of jobs compared with the other counties in the region. It has historically been the economic hub in Wisconsin, providing the region with a source of high-paying management and professional jobs in downtown as well as a supply of service and manufacturing jobs. With the exception of the 2000s, Milwaukee County has experienced a net gain of employment each decade going back to at least the 1950s. Declines in employment during the 2000s were associated with the national economic recession of the late

2000s. During this time, the region lost 2.7 percent of its employment. The majority of the job losses occurred in Milwaukee County, where employment declined by 42,900. See Section 2.2.1.2 for more information about past and projected employment in Milwaukee County.

The communities within the primary study area have been redeveloping former industrial areas over the past two decades to rebuild their economic bases. As a result, some areas within the primary study area such as West Allis and West Milwaukee have experienced growth in employment. Part of the economic vitality of the study area is due to its access to I-94 and the presence of a large population base and workforce. For more information about business development patterns in the study area see Sections 2.2.1 and 2.2.2.

Environmental Consequences/Potential Mitigation

The Modernization Alternatives would displace between seven and ten businesses. The preferred alternative would displace 10 active businesses. This direct project impact when combined with other past, present and future freeway reconstruction projects could cumulatively affect businesses within Milwaukee County. As shown in Table 28, 19 or 21 businesses would be impacted by Southeastern Wisconsin freeway reconstruction projects in Milwaukee County that have been completed, are under construction or are in the planning phase. Additional businesses are likely to be relocated in Milwaukee County as the remaining segments of the freeway network are reconstructed along I-894, US 45, I-43 and I-94 in the future. This is particularly true for the City of Milwaukee, which has multiple freeway corridors within its boundaries and had substantial loss of businesses from the original construction of the freeway system. Maintaining jobs in Milwaukee County is especially important for environmental justice populations, which are often dependent on transit because most areas of the county are accessible by transit.

Table 28: Cumulative Business Impacts in Milwaukee County

Project	SE Freeway Project	Business Displacements
Completed	Marquette Interchange	5
Milwaukee County portion completed	I-94 North-South	0
Under construction	Zoo Interchange	4
Planning phase	I-94 East-West	7 - 10
Planning phase	I-43 North-South	2

Source: Marquette Interchange Environmental Assessment; I-94 North-South Corridor Study FEIS; Zoo Interchange FEIS; I-94 East- West Freeway Corridor DEIS; I-43 North-South Corridor Study DEIS.

The business impacts are not expected to have a substantial cumulative effect on the Milwaukee County economy. The business impacts make up a very small portion of the 20,015 business establishments that are located in Milwaukee County as of 2010 (U.S. Census Bureau 2014). Also, the business displacements are expected to be offset by business development in other nearby areas. As discussed in Section 2.4, the Modernization Alternatives (with the exception of the potential removal of the Hawley Road interchange under the At-grade alternative) are expected to have the indirect effect of facilitating planned redevelopment within the primary study area. This conclusion is supported by a recent TRB report that reviewed 100 transportation case studies (Strategic Highway Research Program 2012). The research found that highway projects could cause localized negative job impacts if property-takings are required, but in almost all the case studies, these impacts were offset by new economic activity that occurred somewhere else nearby. In addition, space is available to which businesses can be relocated within Milwaukee County. WisDOT's acquisition and relocation program would facilitate relocation assistance and it is likely that many of the displaced businesses would be relocated within Milwaukee County.

3.2.4 Neighborhoods

This section describes the potential cumulative effects to neighborhoods within Milwaukee County.

Affected Environment

Historically, many transportation options have been developed within Milwaukee County, including city streets. The faster moving interurban routes operated along dedicated rights-of-way, which were somewhat more intrusive to neighborhoods.

One example of such an interurban route within the study area is a line that operated from downtown Milwaukee and extended west between Clybourn Street and the former Milwaukee Road railroad line, past the north side of the former Milwaukee Road's Menomonee Valley Shops, adjacent to the 35th Street Viaduct, and continued west between the VA complex and the Calvary Cemetery, west of Hawley Road. The route turned south at about 100th Street, turned west between Greenfield Avenue and Lincoln Avenue, and continued west to Waukesha, Oconomowoc, and Watertown.

The portion of the interurban line that ran along the north side of the Menomonee Valley had little effect on neighborhood connectivity because the industrial area that developed in the valley to the west/southwest of downtown largely separated the north side of the city from the south side of the city. To the west of Hawley Road, the right-of-way for the interurban line bisected residential neighborhoods, but historical aerial photography indicates that local street connectivity in this area was maintained. Some of the former interurban right-of-way is still present on the north side of I-94 (west of Hawley Road) and is currently right-of-way for ATC power lines.

Construction of the first I-94 East-West freeway segment began in the March 1952 and ended in January 1962. It included I-94 between 13th and 68th Streets and the Stadium Freeway (US 41/Miller Park Way) between Wisconsin and National Avenues. In contrast to the interurban line, the east-west freeway disconnected several local roads along the west segment of the I-94 freeway west of Hawley Road. Following construction of I-94, four out of the nine streets that originally connected Fairview Avenue north of I-94 and Dixon Street to the south, remained: Hawley Road; 64th Street, 68th Street, and 70th Street. The east-west freeway construction resulted in a split of north/south neighborhoods west of Hawley Road, which is still present today. In the east segment, the original I-94 freeway construction did not split neighborhoods, since this area was already separated from the industrial land uses associated with the Menomonee Valley.

While the original construction of I-94 resulted in the relocation of some homes and businesses, it also provided many benefits to those living along what would become the I-94 East-West Corridor. The construction of I-94 improved safety and congestion on local roadways by removing through traffic from local roads and placing it on a higher-capacity freeway better equipped to handle the larger volume of traffic. The construction of I-94 also afforded local residents access to I-94 to allow for more efficient and convenient travel to destinations outside of the local community and more efficient and convenient access to the local community and businesses from locations further away. Many of these benefits are similar to the Purpose and Need of the current I-94 East-West Corridor study, such as improving safety, decreasing crashes, and accommodating existing and future traffic volumes at an acceptable level of service.

Today, well-established residential neighborhoods can be found throughout the study area in the cities of Milwaukee, Wauwatosa and West Allis, and the Village of West Milwaukee. For more information about neighborhood development patterns in the study area see Section 2.2.2.2. Maintaining infrastructure is important to a community's quality of life. Highways and other transportation infrastructure generally provide reliable access to employment and cultural centers and improve mobility of people and goods—both of which encourage continued investment throughout the community and within neighborhoods.

Conversely, infrastructure in and adjacent to neighborhoods, particularly neighborhoods that have been impacted by past infrastructure development, can cause direct and proximity impacts such as right of way acquisition, displacements, and increased air, noise and visual impacts. The combination of these impacts can negatively

impact quality of life. Neighborhoods close to large infrastructure become more vulnerable to these impacts as the infrastructure expands.

Environmental Consequences/Potential Mitigation

The I-94 East-West Corridor project would displace between seven and 13 residences depending on the Modernization Alternative. The preferred alternative would displace eight residences. This direct project impact, when combined with other past, present and future freeway reconstruction projects could cumulatively affect neighborhoods within Milwaukee County. As shown in Table 29, between 41 and 47 residences would be impacted by Southeastern Wisconsin freeway reconstruction projects in Milwaukee County that have been completed, are under construction, or are in the planning phase. Additional residences are likely to be displaced in Milwaukee County as the remaining segments of the freeway network are reconstructed along I-894, US 45, I-43 and I-94 in the future. This is particularly true for the City of Milwaukee, which has multiple freeway corridors within its boundaries and had substantial loss of residences from the original construction of the freeway system.

Table 29: Cumulative Residential Impacts in Milwaukee County

Project	SE Freeway Project	Residential Displacements
Completed	Marquette Interchange	10
Milwaukee County portion completed	I-94 North-South	4
Under construction	Zoo Interchange	8
Planning phase	I-94 East-West	7 - 13
Planning phase	I-43 North-South	12

Source: Marquette Interchange Environmental Assessment; I-94 North-South Corridor Study FEIS; Zoo Interchange FEIS; I-94 East- West Freeway Corridor DEIS; I-43 North-South Corridor Study DEIS.

The anticipated impact is not substantial compared with the overall population in Milwaukee. However, there is a potential cumulative impact to Milwaukee neighborhoods where past and future freeway construction has and could occur. The City of Milwaukee is particularly concerned about the future reconstruction of the Southeastern Wisconsin freeway system, noting the vulnerability of neighborhoods that are subjected to the cumulative adverse impacts of expanding highways.

WisDOT has developed design modifications that avoid and minimize relocations to the extent possible. Other project features can also minimize the potential cumulative effect of the Modernization Alternatives. Noise barriers are feasible and reasonable in up to six locations (five if no noise barrier on bridges) along the project corridor. Traffic currently using local streets to avoid freeway congestion would also divert back to I-94, potentially reducing congestion on local streets and improving air quality. Improved traffic operations reduce emissions, which benefits air quality. During preliminary engineering, WisDOT will initiate a community sensitive solutions process to further minimize impacts, enhance infrastructure elements, and improve the visual quality of the I-94 corridor. Additionally, as noted in EIS Section 3.5.3, per the Uniform Act, WisDOT will provide relocation assistance, including providing money for acquisition price, replacement dwelling costs, moving expenses, increased rental or mortgage payments, closing costs, and other relocation costs.

3.2.5 Municipal Tax Base

This section describes the potential cumulative effects to municipal tax bases within Milwaukee County.

Affected Environment

Local taxes are used for many basic services by local governments including garbage collection, police and fire protection, local road construction and maintenance, public facilities, and other services. Local government tax revenues in Wisconsin have become more challenging in recent years as new development slowed due to the economic recession of the late 2000s, state aid for local governments has declined, and strict levy limits have been created that cap the amount of money local governments can raise through property taxes. According to the

Wisconsin Department of Revenue *Town, Village, and City Taxes* report, the full value of taxable property in Milwaukee County was $58.3 billion in 2014. The total municipal taxes collected for Milwaukee County was $425.5 million in 2014. This figure is for village and city tax collections only. It does not include county or school district taxes. The City of Milwaukee's full value of taxable property was $26.1 billion in 2014 and its total municipal tax collected was $ 248.2 million.

Environmental Consequences/Potential Mitigation

The Modernization Alternatives for the I-94 East-West corridor project could cumulatively affect local government tax bases in Milwaukee County when combined with past, present and future freeway reconstruction projects. Table 30 shows the known municipal tax base impacts for Southeastern Wisconsin freeway reconstruction projects that have been completed, are under construction or are in the planning phase. However, a loss of tax base can affect a community's ability to provide municipal services. This is particularly true for the City of Milwaukee, which has multiple freeway corridors within its boundaries and had substantial tax base loss from the original construction of the freeway system. Also, additional municipal property tax base in Milwaukee County is likely to be impacted as the remaining segments of the freeway network are reconstructed along I-894, US 45, I-43 and I-94 in the future.

Table 30: Cumulative Municipal Property Tax Base Impacts in Milwaukee County

Project Status	SE Freeway Project	Assessed Value Loss	Annual Local Tax Revenue Loss*	Tax Year	Municipalities Impacted
Completed	Marquette Interchange	Unknown	Unknown	Unknown	Milwaukee
Milwaukee County portion completed	I-94 North-South	$1,366,623	$70,314	2005	Milwaukee, Greenfield Oak Creek
Under construction	Zoo Interchange	$11,455,600	$76,990	2008	Milwaukee, Wauwatosa, West Allis
Planning phase	I-94 East-West	$6,544,953 - $7,644,193	$60,540 - $70,709	2011	Milwaukee
Planning phase	I-43 North-South	$8,254,322	$237,700	2012	Glendale, Bayside, Fox Point, River Hills

Source: Marquette Interchange Environmental Assessment; I-94 North-South Corridor Study FEIS; Zoo Interchange FEIS; I-94 East- West Freeway Corridor DEIS; I-43 North-South Corridor Study DEIS.
**Tax revenues are for local governments only. It does not include county tax revenues or other taxing jurisdictions.*

Of properties affected by right of way acquisition for the I-94 East-West project, about 80 percent of the properties are non-taxable parcels, which minimize the impact to the municipal tax base. Maintaining safety, access and traffic operations can help support existing and planned commercial development in the area, which in turn helps maintain the municipal tax base.

3.2.6 Historic Properties

Affected Environment

The study area is densely developed and includes a wide array of historic properties. Historic properties include buildings, structures, sites, objects, and districts. WisDOT surveyed properties to identify historically significant resources within the study area corridor for the I-94 East-West Corridor project. WisDOT has identified the following historic properties, which are further described in the EIS:

- Northwestern Branch of the National Home for Disabled Volunteer Soldiers National Historic Landmark (or Soldiers' Home NHL)
- Northwestern Branch of the National Home for Disabled Volunteer Soldiers Historic District (or Soldiers' Home Historic District)
- Soldiers' Home Reef NHL

- Calvary Cemetery, eligible for listing on the National Register
- Story Hill Residential Historic District 1, eligible for listing on the National Register
- Story Hill Residential Historic District 2 and 3, eligible for listing on the National Register
- Paradise Theater, eligible for listing on the National Register

Section 106 of the National Historic Preservation Act requires federal agencies (in this case FHWA) to consult with SHPO and consulting parties on the effects of proposed projects on historic properties. A similar state law, the Wisconsin Historic Preservation Act requires similar consulting requirements for state-funded projects.

Federally funded US Department of Transportation projects are also subject to Section 4(f) of the Department of Transportation Act. This law requires that projects can use land from historic resources only if there is no prudent and feasible alternative to using the land, and measures to minimize harm are included in the project.

Environmental Consequences/Potential Mitigation

Ongoing development and redevelopment and lack of investment to maintain historic properties within the communities adjacent to the freeway could potentially affect historic properties through demolition or alterations that affect the property's historic integrity. Both federal and state laws help protect properties that are NHLs, or are eligible for or listed in the National Register (all NHLs are listed in the National Register). These laws require sponsors of state and federally funded projects to consult with the SHPO; however, these laws do not always apply to privately initiated actions that could affect historic resources where neither federal nor state permits/approvals are required. In addition to listed state and federal historic properties, local governments take measures to protect properties that are historically significant to their communities. To help avoid and minimize impacts to locally designated historic properties, the cities of Milwaukee, West Allis and Wauwatosa have historic preservation commissions to review plans and make recommendations before local approval.

FHWA has determined through the Section 106 process that the At-grade alternative (preferred alternative) could be designed to have No Adverse Effect on the Soldiers' Home NHL and Historic District. The project's Programmatic Agreement stipulates the appropriate design review process and other steps to be taken to ensure there will be No Adverse Effect on the Soldiers' Home Historic District and the Soldiers' Home NHL. Additionally, FHWA determined through the Section 106 process that the At-grade alternative would have No Adverse Effect on the Soldiers' Home Reef NHL, Calvary Cemetery, Story Hill Residential Historic District 1, Story Hill Residential Historic District 2 and 3, and Paradise Theater.

FHWA has also determined through the Section 106 process that the Double Deck alternative would have an Adverse Effect on the Soldiers' Home NHL and Historic District, and a potential Adverse Effect on Story Hill Residential Historic District 2 and 3 and Calvary Cemetery. The Double Deck alternative is not part of the preferred alternative.

3.2.7 Regional Land Use Patterns

The evaluation of cumulative effects on regional land use patterns considered the recommendations for the regional freeway system in Southeastern Wisconsin and the status of its implementation were considered in combination with the proposed Modernization Alternatives for the I-94 East-West corridor and the other past, present and future actions in Table 25 to fully assess the potential cumulative effect to regional land uses and its consequences.

The 2035 regional transportation plan recommends widening 127 miles of the 270-mile regional freeway system in Southeastern Wisconsin (SEWRPC 2006b). This includes adding travel lanes to I-94, I-43, I-894 and US 45 in Milwaukee County, and adding travel lanes to I-94 in Waukesha County. Eight lanes (four in each direction) are recommended for the I-94 corridor between downtown Milwaukee and WIS 16 in Waukesha County, which would add one new travel lane in each direction. The remainder of I-94 in Waukesha County would have six lanes.

To date, WisDOT has finished reconstructing the Marquette Interchange in downtown Milwaukee, and it has completed the Milwaukee County portion of the I-94 North-South corridor known as the Mitchell Interchange. WisDOT continues to complete reconstruction plans for I-94 in Racine and Kenosha counties as part of the I-94 North-South project. Those improvements are expected to be completed by 2021. Most recently, WisDOT initiated the construction of the Zoo Interchange project in Milwaukee County, which allows for the addition of new travel lanes if needed in the future. In addition to the I-94 East-West corridor, WisDOT completed the EIS in 2014 for the I-43 North-South corridor between Silver Spring Drive in Milwaukee County and WIS 60 in Ozaukee County. Construction is not yet scheduled for the I-94 East-West and I-43 North-South corridors, but if funding is approved, construction could occur around 2020. WisDOT has not yet initiated studies for several freeway segments in Milwaukee and Waukesha counties and construction has not been scheduled for these remaining segments. If funding is obtained, it is likely that the reconstruction of the remaining freeway segments in Milwaukee and Waukesha counties would be implemented within the 2040 timeframe of this analysis.

Other non-transportation actions that affect regional land use patterns include past suburban development in Waukesha County, ongoing and future infill development and redevelopment within the urbanized areas of Waukesha County, ongoing and future development of low-density subdivisions within the non-urbanized/non-sewered portions of Waukesha County that is not consistent with the SEWRPC 2035 regional land use plan. Also, several redevelopment projects are occurring or are in the planning phase in Milwaukee County. (See Section 2.2.2.2 for more information about land use and development patterns.)

Affected Environment

To understand regional land use patterns, it is important to first understand the historic growth patterns of metropolitan areas in the United States and the Milwaukee metropolitan area. The physical layout of U.S. cities during the first half of the 20th century was compact and focused around a central business district that contained a mixture of uses. Neighborhoods tended to be built on a street grid and small shops and businesses were often located along a main street district within walking distance to homes. Lands that were closest to the central business district often were the most valuable because they had the greatest accessibility to employment, transportation, and goods and services.

During the second half of the 20th century, after World War II, land development patterns changed dramatically as development spread to more outlying areas and people and businesses moved farther from the central business district. Residential, commercial and industrial land uses were separated and the street grid was replaced with an arterial roadway system. Driving became essential for most trips. This change is attributable to multiple factors including rising income levels, the expansion of the automobile industry in the United States, the implementation of the federal Interstate Highway System, federal housing policies that encouraged homeownership, and local zoning ordinances. These land use pattern changes also occurred during a time period when the United States was undergoing great economic growth and large population increases due to the post WWII baby boom phenomenon. The result has been metropolitan areas characterized by multiple clusters of development dispersed throughout a region instead of one central business district (USEPA 2013).

The story has been similar for the Southeastern Wisconsin region. According to SEWRPC, “over the 100-year period from 1850 to 1950, urban development in the region occurred in a pattern resembling concentric rings around existing urban centers, resulting in a relatively compact regional settlement pattern. After 1950, there was a significant change in the pattern and rate of urban development in the region. While substantial amounts of development continued to occur adjacent to established urban centers, considerable development also occurred in isolated enclaves in outlying areas of the region” (SEWRPC 2006a). The population density of the urban portion of the Southeastern Wisconsin region decreased significantly, from 10,700 persons per square mile in 1940 to about 5,100 in 1970; 3,900 in 1980; 3,500 in 1990; and 3,300 in 2000 (SEWRPC 2006a). See Section 2.2 for more information about population, employment and land use trends for Milwaukee and Waukesha counties.

As the original construction of the Interstate system greatly improved accessibility to outlying areas and as a growing population and market forces attracted people to suburban locations, the value of central downtown

locations diminished and disinvestment pursued (Boarnet and Haughwout 2000). Low-income residents became concentrated in central city locations as people with economic means moved to suburban locations. Also, as jobs decentralized, it became increasingly difficult for transit-dependent, low-skilled workers to obtain employment in areas of the region not served by public transportation.

Section 2.2.1, Socioeconomic Data and Trends, reviewed the distribution of minority and low-income populations within Milwaukee and Waukesha counties. Exhibit 8 shows a substantial concentration of minority populations in the City of Milwaukee's near-north, northwest and near south-side neighborhoods. Exhibit 10 shows the highest rates of poverty are located within the City of Milwaukee, especially north of I-94 and east of US 41. Areas of the city's south side also had high rates of poverty to the south of I-94 and east of 27th Street. In Waukesha County, the only substantial concentration of minority and low-income individual is in the central portion of the City of Waukesha. The remainder of the county has low poverty rates and low percentages of minority populations.

Environmental Consequences

The changes in the regional land use pattern discussed previously have not only impacted natural resources, but have also had social and economic implications for portions of the population. The primary concern raised by local stakeholders is that adding new travel lanes to the freeway system in Milwaukee and Waukesha counties could continue to facilitate low-density development patterns in Waukesha County and increase the number of jobs that are not accessible by transit.

As discussed in Section 2.4.3 the Milwaukee County Transit System (MCTS) provides good coverage to employment centers within Milwaukee County, but access to employment centers outside of Milwaukee County is limited for those who do not have a vehicle due to the lack of transit routes that cross the Milwaukee County line, unreasonable travel times (greater than 90 minutes) or transit schedules that are not coordinated with reverse commuting and worker shifts.

Several research studies have documented the concerns surrounding transit access and workers in the Milwaukee area. A 2004 report titled, "*Transportation Equity and Access to Jobs in Metropolitan Milwaukee"*, identified a "spatial mismatch" between Milwaukee metropolitan's affordable housing supply in the City of Milwaukee and the availability of low-skilled jobs in adjacent suburban areas (The University of Wisconsin-Milwaukee Center for Economic Development 2004). The report's research found that while 81 percent of families living below the poverty line are located in the City of Milwaukee, only 30 percent of businesses with strong hiring projections for entry-level workers are located in Milwaukee, and the remaining 70 percent are in the suburbs (The University of Wisconsin-Milwaukee Center for Economic Development 2004).

More recently, the Public Policy Forum published a related report called *Getting to Work: Opportunities and Obstacles to Improving Transit Service to Suburban Milwaukee Job Hubs* (Public Policy Forum 2013). The report examines the challenges associated with accessibility to the major employment centers (a concentration of at least 10,000 jobs) in Milwaukee, Waukesha, Washington and Ozaukee counties for workers in Milwaukee who do not have access to a vehicle for work trips. The report found that of the 29 job centers located within these counties, 15 have relatively high levels of public transit access (Milwaukee County), four are completely inaccessible by transit (Washington and Waukesha counties) and 10 are served by transit on a limited basis (all four counties).

Additionally, the SEWRPC 2035 regional housing plan found that 17 percent of households in the City of Milwaukee did not have access to a car in 2005-2009 and only 41 percent of employers (with 500 or more employees) in the region are accessible by local or rapid transit service (SEWRPC 2013b). As a result, households in the City of Milwaukee that lack access to a car are not able to access the majority of employment centers in Waukesha County and the region.

The spatial mismatch is a complex issue and it is complicated by the lack of workforce housing outside Milwaukee County. The SEWRPC 2035 regional housing plan analyzed the ratio of available jobs and housing in the region to determine if communities with a substantial amount of existing and/or planned employment also have existing or

planned workforce housing (SEWRPC 2013b). The SEWRPC analysis found a current and projected jobs/housing imbalance for many of Milwaukee's suburban communities. Municipalities such as Brookfield, New Berlin, Muskego and others were found to have a lower-cost job/housing imbalance and a moderate-cost job/housing imbalance. This means that these communities have both a higher percentage of lower-wage jobs than lower-cost housing and they have a higher percentage of moderate-wage jobs than moderate-cost housing. According to SEWRPC, a moderate-cost imbalance is the most common type of current and projected job/housing imbalance in the region and also tends to occur in suburban communities. See Appendix E for a SEWRPC map that shows the projected 2035 jobs/housing imbalance.

Local transit funding is another important factor affecting the ability of local transit services to provide access to suburban job locations. MCTS has four primary sources of revenue for its operations. In 2014, passenger fares accounted for 35 percent, the State of Wisconsin provided 43 percent, the federal government provided 11 percent and Milwaukee County property taxes contributed about 11 percent to operating revenues (MCTS 2014). As discussed in the Public Policy Forum report, *Milwaukee County's Transit Crisis*, public funding sources have not kept pace with growth in transit operating costs (Henken, Horton and Schmidt 2008). The local share of funding public transit is largely provided by property taxes, which have to compete annually with funding for mandated services and projects. Increasingly, due to the constraints in property tax-based funding and shortfalls and fluctuations in federal and state funding, MCTS has found it difficult to provide funding to maintain current service levels and address transit needs beyond the county border. To address its fiscal challenges, MCTS has reduced transit service levels, resulting in a 22 percent decline in total annual bus miles between 2000 and 2012 (Public Policy Forum 2013). While service reductions have mostly involved reduced trip frequencies and shorter hours of service, several bus routes that once connected Milwaukee County residents with suburban job centers have been eliminated (Public Policy Forum 2013).

Funding for transit is further complicated by the fact that Wisconsin legislation limits WisDOT's ability to provide capital funding for transit outside traffic mitigation measures during construction projects. As stated in Section 85.062(2), Wisconsin Statutes, "No major transit capital improvement project may be constructed using any state transportation revenues unless the major transit capital improvement project is specifically enumerated under subsection (3)." In 2010, capital project revenue sources for MCTS were primarily funded by federal sources (80 percent) and from Milwaukee County (20 percent) (Gulotta-Connelly 2010).

Magnitude and Significance of Cumulative Effect

While the original construction of I-94 in Milwaukee and Waukesha counties in combination with post 1950s historic development patterns played a large cumulative role in the decentralization of development and jobs in the past, the study team has determined the subsequent improvements and widening to I-94 in Milwaukee and Waukesha counties would have a much smaller cumulative effect on regional land use patterns and redistribution of population and employment between Milwaukee and Waukesha counties. [4] (National Cooperative Highway Research Program 2002) (Boarnet and Haughwout 2000).

As discussed in Section 2.2.2, the land use patterns in Milwaukee and Waukesha counties have developed around a mature transportation system that already has a great deal of transportation accessibility. Research shows that the extent of land use effects is influenced by the maturity of the regional transportation system; and greater effects are associated with new facilities compared with existing facilities that are expanded (National Cooperative Highway Research Program 2002) (Boarnet and Haughwout 2000). Because so much development has occurred, it is difficult to distinguish the role of the freeway from other factors that influence development.

[4] In the report, *Do Highways Matter? Evidence and Policy Implications of Highways' Influence on Metropolitan Development,* researchers found that the first limited access or interstate highway built in an urban area brought large improvements in transportation access and resulted in large increases in land prices. However, the researchers found that "as more highways are built, and the metropolitan highway network matures, the incremental effect on accessibility from new or improved highways decreases, thus accounting for a smaller change in land prices due to any access premium." The researchers further discuss that metropolitan highway investments still influence land use, but at a much smaller geographic scale, rather close to the project. (Boarnet and Haughwout 2000)

Several stakeholders that participated in outreach for the ICE analysis stated they believe the location of one's workplace, school districts and housing style choices are the primary driving forces behind the residential location decisions within the region. Also, many stakeholders could not distinguish any substantial differences in land use and development patterns when asked to consider the I-94 East-West corridor project in combination with the reconstruction and widening of the entire freeway system in Milwaukee and Waukesha counties.

Plus, the suburban areas in Waukesha County closest to the project corridor including Brookfield and the urbanized areas of New Berlin and Menomonee Falls are largely built out and development has already spread as far west as Oconomowoc**.** This was confirmed at an interview with the Waukesha County planning manager who state development has spread throughout the county and that adding new lanes to I-94 would not change these already established land use patterns in Waukesha County. (See stakeholder interview in Appendix A) Also, interviews with local real estate professionals and many stakeholders at the June 6, 2013, focus group meeting did not think adding capacity to I-94 in Milwaukee and Waukesha counties would have much effect on existing land use and development patterns. Instead, they stated that adding capacity to I-94 was important to the continued development and redevelopment of business areas in Milwaukee County, because congestion makes it more difficult for Milwaukee County business districts (including downtown) to compete with other locations in the region that have less congestion (see Appendix B and Appendix C).

Furthermore, development in the non-urbanized areas of western Waukesha County is limited by a lack of sewer and water facilities, large environmental corridors that are preserved by local zoning, and local zoning ordinances that permit low-density development. Most importantly, the development potential of western Waukesha County is limited because it is farther from the existing concentrations of population and labor. This was confirmed by an interview with a local real estate developer that stated locations in western Waukesha County such as Oconomowoc are less desirable for commercial and industrial development because they are farther from the population base and available workforce. (See stakeholder interview with David Merrick, Irgens in Appendix C.)

Population and employment trends discussed in Sections 2.2.1 and 2.2.2 shows that the redistribution of population and employment between Milwaukee and Waukesha counties has slowed in recent decades and Milwaukee County has been gaining population. In addition, many communities and neighborhoods along the I-94 project corridor have been redeveloping former industrial areas and focusing on neighborhood revitalization as discussed in Section 2.2.2.2. This has increased the availability of jobs that are accessible via transit, walking or biking, which is important for environmental justice populations in Milwaukee County. In addition, redevelopment in Milwaukee County has made older urban neighborhoods more attractive to residents who prefer walkable neighborhoods, historic architecture and other recreational and cultural amenities offered by these communities. Infill development has maintained the viability of these existing urbanized areas, which has helped to minimize development that may have otherwise occurred in Waukesha County or other parts of the region.

In 2014, SEWRPC completed Report No. 215, *Review and Update of the Year 2035 Regional Transportation Plan*. The report contains a review and update of the 2035 regional transportation plan and includes an assessment of the plan's implementation status. The update found that implementation of the 2035 regional transportation plan is lagging for all transportation components, including bicycle accommodations, roadways, and transit. Since the plan was originally adopted in 2006, only 13 percent of the arterial street and highway system capacity improvements have been implemented, and fixed route bus service has been reduced by 7 percent. According to SEWRPC, the lag in plan implementation is a result of significantly constrained transportation funding from the elimination of motor fuel tax indexing and the failure of RTA legislation (SEWRPC 2014).

Given the funding situation, the 2014 plan update identified a fiscally-constrained year 2035 regional transportation plan, which includes the elements of the 2035 plan that likely can be achieved within existing and reasonably expected available revenues. According to SEWRPC, the effect on the highway system element is a delay in capital projects being implemented and the effect on the transit element is a lack of transit improvement and expansion identified in the 2035 plan, reductions in current transit service, and increases in transit fares above the rate of inflation (SEWRPC 2014).

Appendix B of the SEWRPC report evaluates the impacts and benefits of the fiscally constrained 2035 regional transportation plan on minority and low-income populations in southeastern Wisconsin. The analysis found that because the segments of freeway proposed to be widened under the 2035 fiscally constrained plan would directly serve areas of minority and low-income populations, these populations would benefit from the expected improvement in arterial street and highway accessibility to employment associated with the proposed freeway widening. According to the SEWRPC report, this is based on the fact that 45 percent of the trips that use I-94 between 16th Street and 70th Street are from areas with a minority or low-income population greater than the regional average (SEWRPC 2014).

For Appendix B, SEWRPC compared the 2035 fiscally constrained transit system plan to the location of minority and low-income populations. According to SEWRPC, the analysis indicates that most (but not all) of the transit system would serve the principal concentrations of minority and low-income populations. Also, most of the higher-quality bus routes would serve areas of minority and low-income populations under the plan (SEWRPC 2014)

Based on SEWRPC's findings for the 2014 plan update, the study team determined that minority and low-income populations in Milwaukee County can expect to receive accessibility benefits from freeway segments in Milwaukee County that are improved. However, the continued constraints with transit funding and the decrease in transit service anticipated by the SEWRPC 2014 plan update would not improve access to jobs in suburban locations, particularly Waukesha County, for transit-dependent populations in Milwaukee. As a result, minority and low-income populations in Milwaukee who are transit dependent would continue to experience challenges accessing jobs that are not accessible from transit.

Mitigation Measures

Transit access to jobs in suburban locations outside Milwaukee County is a complex issue that would require coordination of many different levels of government including federal, state and local agencies. Potential mitigation measures that would help improve transit access to jobs in suburban locations are summarized below and discussed in more detail in Section 2.4.2.2 under Growth Inducing Effects in Waukesha County.

Freeway Project-Related Measures. Because the provision and maintenance of transit services is under the jurisdiction of local governments in Wisconsin, WisDOT is not able to directly implement transit services. However, WisDOT has the ability to coordinate with local transit providers and select freeway reconstruction alternatives that could benefit transit or not preclude future transit options. For example, adding new travel lanes to the freeways in Milwaukee and Waukesha counties would benefit existing freeway flyer transit services that operate in freeway travel lanes as these services would benefit from improved traffic operations. Also, WisDOT could allow transit buses to operate in the freeway shoulders. Implementation of bus-on-shoulder transit operations would require cooperation between WisDOT, a local government entity like Milwaukee County and/or Waukesha County and their designated transit service providers (MCTS and Waukesha Metro).

WisDOT also has the ability to mitigate any transit impacts that may occur during freeway reconstruction projects. During the final design phase, WisDOT and FHWA would evaluate the diversion routes to determine if improvements to the routes are necessary to accommodate transit movements. These improvements could include parking restrictions and intersection improvements. For example, additional transit service provided by WisDOT during the Zoo Interchange construction included the Burleigh and State Fair Shuttles from the Regional Medical Center during interchange closures in 2014 and 2015 (approximately 114 rides/day), UPASS expansion and Route 901 service in Waukesha County in 2015 (approximately 120 rides/day), and several, all-day free transit service zones through and around the Zoo Interchange construction area in 2014-2015. These free zones included 92nd Street, 84th Street, Hwy 100, Watertown Plank Road, 76th Street, and Bluemound/Wisconsin Avenue (approximately 335 rides/day combined).In addition, as part of the construction of the Zoo Interchange project, WisDOT is funding $13.5 million in bus transit to reduce traffic congestion and provide transportation for workers between Milwaukee and the suburban job centers during construction. Also, $2 million of funds are being used for service enhancements. Routes funded by WisDOT include Route 61, Route 279, and Route 6. Route 61 provides service

from Milwaukee's northwest side to Germantown. Route 279 travels from 35th Street in Milwaukee to the Park Place business park on Milwaukee's northwest side and the Menomonee Falls business park. Route 6 travels from Port Washington Road along Capital Drive to the New Berlin industrial park. WisDOT will provide over 4 years of funding for increased transit to suburban job centers.

Regional Transit Implementation-Related Measures. According to SEWRPC, if the transit components of the 2035 regional transportation plan were implemented, many major employment centers that are not currently served by public transit would become accessible for people without access to a car, including those who work weekend hours and second and third shifts (SEWRPC 2013b). According to the 2014 *Review and Update of the Year 2035 Regional Transportation Plan*, which SEWRPC conducts every four years, little progress has been made on the transit component of the regional transportation plan. In fact, the amount of transit service in Southeastern Wisconsin as of 2012 has declined since the Local government entities (i.e., Milwaukee County and Waukesha County), along with transit service providers (i.e., MCTS and Waukesha Metro), are the agencies responsible for implementing these measures. In fact, the amount of transit service in Southeastern Wisconsin as of 2012 has declined since plan was adopted in 2006, including a decrease of almost 7 percent in fixed-route bus service (SEWRPC 2014). Local government entities (i.e., Milwaukee County and Waukesha County), along with transit service providers (i.e., MCTS and Waukesha Metro), are the agencies responsible for implementing these measures.

Transit Funding-Related Measures. The primary reason the transit component of the regional plan has not been implemented is that the plan assumes state legislation would be passed to create a local dedicated transit funding source and that a renewal of adequate annual state financial assistance to transit would be provided as part of the State biennial budget. Attempts have been made at the State Legislature in recent years to establish dedicated transit funding and RTAs, but these attempts have failed to pass the Legislature. Between 2005 and 2011, state transit operating funding to Southeastern Wisconsin increased by 4 percent annually, federal transit operating funding increased about one percent and local transit operating funding decreased slightly (SEWRPC 2014). Transit funding-related measures continue to rely on existing local, state, and federal funding sources.

Attempts have been made at the state legislature in recent years to establish dedicated transit funding and RTAs, but these attempts have failed to pass the legislature. Between 2005 and 2011, state transit operating funding to Southeastern Wisconsin increased by 4 percent annually, federal transit operating funding increased about 1 percent, and local transit operating funding decreased slightly (SEWRPC 2014). Although overall transportation funding has been decreasing, from 2014 to 2015, state transit funding increased by 4.0 percent and has remained constant. The state's 2016-2017 biennial budget maintained state transit funding at $111 million for both 2016 and 2017. According to SEWRPC, without legislation for dedicated local transit funding or more substantial increases in state funding, the expansion of public transit service recommended in the regional plan may not be implemented, and existing transit service is likely to continue to decline.

MCTS has been obtaining federal grants to implement a system of express bus routes, known as MetroEXpress. The routes primarily serve destinations in Milwaukee County. In 2012, MCTS started the RedLine, BlueLine, and GreenLine, and the GoldLine in 2015. These routes are largely funded by Congestion Mitigation and Air Quality Improvement program grants, which only provide up to 3 years of funding for transit service. Once the grants run out, MCTS will need to find alternate sources of operational funds. Although these routes are mostly within Milwaukee County, they do lay the foundation for future extensions to employment centers in the suburban communities adjacent to Milwaukee County if funding and approvals can be obtained.

WisDOT is encouraging the implementation of transit in the Milwaukee area. The Modernization Alternatives for the I-94 East-West Corridor study do not preclude transit. WisDOT has committed to financially participate in the planning process of Milwaukee County's BRT study connecting downtown Milwaukee with the Milwaukee Regional Medical Center along a corridor parallel to I-94. WisDOT provides a subsidy for the Amtrak Hiawatha train route between Milwaukee and Chicago and is reconstructing the passenger train concourse at the

Milwaukee Intermodal Station, which involves removal of the existing train shed and construction of a new, more welcoming structure designed for ADA requirements.

Housing-Related Measures. Consistency with the SEWRPC recommendations in the 2035 regional housing plan could help to address the existing and projected jobs/housing imbalance. The plan advises local governments with existing and planned employment land uses that have sewer services to conduct detailed analyses of their communities to confirm if an existing or planned job/housing imbalance exits. For communities that have a higher percentage of lower-wage jobs than lower-cost housing, new affordable multifamily housing developments are recommended. For communities with a higher percentage of moderate-wage jobs than moderate-cost housing, additional modest sized single-family homes on small lots would help to improve the imbalance. Progress towards achieving the recommendations in the SEWRPC Housing Plan is complicated by the fact that SEWRPC is an advisory agency. Local governments would need to make substantial changes to local land use plans and zoning regulations to increase the region's supply of housing that is available to workers.

Land Use Related Measures. Local government consistency with the SEWRPC 2035 Regional Land Use Plan would help the region develop in a more compact manner that can support transit. The 2035 regional land use plan supports centralized regional settlement patterns, revitalization of urban centers, infill development and new urban development at densities that effectively support essential urban services including water, sewer, and public transit. Because land use is under the jurisdiction of local governments, the 2035 regional land use plan recommendations primarily need to be implemented by local governments in the region.

3.2.8 Air Quality

Based on the air quality analyses completed for the proposed improvements in EIS Section 3.20, the I-94 East-West corridor project will not contribute to any violation of the NAAQS. MSAT emissions will decrease with any of the Modernization Alternatives, and neither carbon monoxide (CO) nor $PM_{2.5}$ levels will exceed the air quality standards. Air quality was included in cumulative effects discussion because air quality concerns have been raised by the public as a resource of concern. This section discusses the potential cumulative effects to air quality in Southeastern Wisconsin.

Affected Environment

The Clean Air Act of 1970 established National Ambient Air Quality Standards (NAAQS). These were established to protect public health, safety, and welfare from known or anticipated effects of air pollutants. The most recent amendments to the NAAQS contain criteria for sulfur dioxide (SO_2), particulate matter (PM_{10}, 10-micron and smaller along with $PM_{2.5}$, 2.5 micron), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead (Pb).

The study area freeway system is located within the Southeastern Wisconsin Intrastate Air Quality Control Region #239. Milwaukee County is currently in attainment status for five of the six criteria pollutants, and has been redesignated to a maintenance area for $PM_{2.5}$ (see EIS Section 3.20, Air Quality, for more information).

Environmental Consequences/Potential Mitigation

Past and ongoing development of the freeway system along with other activities and developments in the study area (see Table 25), may have a cumulative impact on air quality in the region. Other activities in the region such as the expanded Oak Creek coal-fired power plant and continued regional traffic growth are sources of air pollutants. By the year 2040, average weekday traffic along the I-94 project corridor is expected to increase by 15 percent and current and future development in the region has the potential to continue to impact air quality.

WDNR manages, monitors, and enforces air quality programs in Wisconsin. To help manage the air quality program, WDNR works with a range of industries, agencies, interest groups, and individuals to develop the state implementation plan (SIP) that demonstrates how Wisconsin will attain compliance with national air quality standards. FHWA also provides congestion management and air quality grants for transportation projects in non-attainment areas that will reduce transportation-related air emissions.

Ultimately, the U.S. Environmental Protection Agency (EPA) plays a major role in managing Wisconsin's compliance with the Clean Air Act, which includes monitoring the SIP. If the state and southeast Wisconsin region cannot achieve attainment standards, EPA can impose sanctions, such as stricter emissions rates for new developments and withholding federal funds for transportation projects.

To obtain federal funding, the reconstruction of the I-94 East-West Corridor must be included in transportation plans that conform to the SIP. At the regional level, SEWRPC prepares a TIP to assure conformance with the SIP. Conformity with the SIP means projects contained in the TIP will not worsen air quality or delay attainment of air quality standards. The next phase of the project is not included in the recently approved 2015-2018 SEWRPC TIP because funding has not yet been allocated to the project for this biennium. Funding for final design activities is being pursued and will be obtained, with inclusion in the TIP, prior to the signing of the project's ROD. The ROD is currently scheduled for spring 2016. While the project may contribute to a cumulative air quality impact, it will also have some beneficial impacts (EIS Section 3.20.2). Thus, it is not expected to be a substantial contributor, as measured by current pollutant standards.

WisDOT compared the projected 2040 design year traffic volumes for the I-94 East-West Corridor with the 2035 design year traffic volumes which served as the basis for the CO modeling conducted for the Interstate I-94, I-894, and U.S. Highway 45 (Zoo Interchange) project. The mainline, cross street and ramp volumes for the Zoo Interchange project were all greater than I-94 East-West project and the modeled CO concentrations were less than 75 of the NAAQS, therefore, the CO concentrations would be well below the CO NAAQS from the proposed I-94 East-West project.

The project has been determined by the Transportation Conformity Workgroup to not be a project of air quality concern for $PM_{2.5}$. In addition to meeting air quality standards, there is growing concern over the direct and cumulative effect of Mobile Source Air Toxics (MSATs). WisDOT and FHWA evaluated the potential change in MSATs from the Modernization Alternatives and the No-build alternative. In the EIS, Section 3.20, Air Quality, contain detailed discussions of MSAT analysis.

According to the MSAT analysis, MSATs will decrease in the future because of EPA's national pollution control programs. In 2007, a new EPA rule to regulate MSATs, "Control of Hazardous Air Pollutants from Mobile Sources," went into effect. The rule sets new standards for fuel consumption, vehicle exhaust emissions, and evaporative losses from portable containers that will be phased in between 2011 and 2015.

The MSAT analysis indicates that by 2040 MSAT pollutants will decrease 70 to 87 percent for 6 of the 7 priority air toxics and over 96 percent for diesel particulate matter from 2008 conditions.

When a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions may increase. However, this could be offset by increases in speeds and reductions in congestion, which are associated with lower MSAT emissions.

As discussed in EIS Section 3.9.4, the Wisconsin Department of Health Services reports a high prevalence of asthma occurring among minorities, particularly African Americans. Asthma attacks or episodes are triggered by a number of factors, including allergens, infections, and irritants such as chemicals, tobacco smoke, and air pollution. The most recent data on statewide asthma statistics show that Milwaukee County has the second highest rate of asthma hospitalization and hospital emergency department visits in the state (Wisconsin Department of Health Services 2013). Menominee County, a rural county in northern Wisconsin, has the highest rates.[5] Air emissions from I-94 East-West Corridor could have a cumulative effect on air quality, which could, along with other contributing environmental factors, trigger asthma episodes in adjacent neighborhoods. Since the I-94 East-West Corridor would meet air quality standards, this effect is expected to be minimal with the build alternative due to reduced traffic congestion. As the Wisconsin Department of Health Services reports, proper asthma management, which includes receiving the influenza vaccine, visiting the doctor for routine asthma visits,

and having a written asthma management plan, can limit or prevent asthma attacks. Limiting exposure to asthma triggers is also an important part of managing asthma, and exposure to environmental tobacco smoke is noted as both a cause of asthma in children and an asthma trigger.

Greenhouse gas emissions are also a concern in the I-94 East-West Corridor air quality study area. While there are no accepted quantitative tools to estimate greenhouse gases at the project level, vehicles using the I-94 East-West corridor can be expected to contribute to greenhouse gas emissions within the region. Currently, the major way to reduce emissions of greenhouse gases from transportation is to reduce the amount of fuel consumed. This can be accomplished by reducing congestion (more efficient driving conditions), reducing driving, and more fuel-efficient vehicles. Induced travel resulting from the Modernization Alternatives is not expected to substantially increase in a region with a mature transportation infrastructure that already provides a high degree of accessibility and limited travel time savings in a corridor with established land use patterns.

Local governments can help manage and reduce greenhouse gases by utilizing appropriate land use and zoning policies that reduce travel demand within individual communities and southeast Wisconsin. A study published by the Urban Land Institute indicates that the continuing growth of VMT may offset emissions reduction gained through technological improvements in vehicles and fuels (Ewing, et al. 2007). The study points to the importance of reducing vehicle miles of travel by managing growth and land use patterns. Several studies on the relationship between land use and vehicle trips found that where diverse land use, accessible destinations, and interconnected streets exist, households drive 33 percent less compared to households in low-density developments. Local government plans that are consistent with the SEWRPC regional land use and transportation plans would help ensure the most efficient land use and zoning policies within the region.

Increased amounts of greenhouse gas in the atmosphere can have impacts on the environment and human health across the planet. Examples of these impacts include rising sea levels, causing erosion of beaches and shorelines, destruction of aquatic plant and animal habitat, floods of coastal cities, and disruption of ocean current flows; a warming trend over much of the planet, broadening the range for many insect-borne diseases; and chronic stress of coral reefs. The possible impacts of global warming to Wisconsin include warmer and drier weather; decreases in the water levels of the Great Lakes, inland lakes, and streams (which may affect shipping operations); increases in water temperature (lowering water quality and favoring warm water aquatic species); changes in ecosystem and forest composition; increases in droughts and floods (impacting crop productivity); and reduction of snow and ice cover (WDNR; Public Service Commission of Wisconsin 2008).

3.2.9 Construction Impacts

This section describes potential cumulative effects from ongoing freeway construction within Milwaukee County.

Affected Environment

The Southeastern Wisconsin freeway system, which includes 270 miles of freeway, is nearing the end of its service life and needs to be reconstructed over the next 20 to 30 years. As a result, WisDOT has begun construction on major portions of the freeway system and is planning for the reconstruction of addition segments. To date, WisDOT has completed the reconstruction of the Marquette Interchange in downtown Milwaukee and has completed the Milwaukee County portion of the I-94 North-South corridor (Mitchell Interchange). WisDOT recently initiated the construction of the Zoo Interchange project in Milwaukee County and is planning for the reconstruction of the I-94 East-West corridor and the I-43 North-South corridor.

The City of Milwaukee has expressed concerns about the duration of construction on its effects on local communities. In particular, concerns included impact of increased traffic diverted to local streets during construction and a lack of transit options that would be provided to allow travelers to choose alternate transportation and help alleviate local street traffic congestion. The concern is primarily based on past freeway construction of the Marquette Interchange, current construction of the Zoo Interchange and future construction of the I-94 East-West corridor. Other construction related impacts could include noise and vibration, air quality and water quality.

Environmental Consequences/Potential Mitigation

During construction, traffic on the I-94 East-West Corridor may divert to local streets to avoid potential delays. Traffic diversion could have a cumulative adverse effect on local streets including reduced traffic operations, increased wear and tear, increased safety hazards and difficulty accessing local neighborhoods, services and businesses during construction-related closures. Furthermore, declining transit service limits the availability of local transportation options that could help reduce congestion-related impacts on local streets, as well as the freeway system.

WisDOT will implement a transportation management plan (TMP), which has the purpose of improving safety, minimizing congestion and adverse traffic impacts and providing for improved public satisfaction during construction. Some of the key strategies of the TMP will include temporary traffic control measures and devices, local road improvements, public involvement and outreach and transportation operations (variable message signs, for example) and incident management strategies. Depending on additional coordination with local officials, WisDOT will fund additional transit routes, as warranted, to mitigate impacts to traffic within the project area during the construction phase of the project. The following are some recent examples of transit mitigation strategies on the I-94 North-South freeway reconstruction project:

- Providing a temporary park-and-ride lot during reconstruction of an existing park-and-ride lot.
- Providing funds to MCTS to add buses to fixed routes and freeway flyer routes to maintain headways during construction.
- Reimbursing MCTS on a per rider basis to provide free bus rides around closed roadways and/or bridges.
- Providing funds to a private bus service to offer reduced fares to and from baseball games during freeway construction in Kenosha.

Additional transit service provided by WisDOT during the Zoo Interchange construction included the Burleigh and State Fair Shuttles from the Regional Medical Center during interchange closures in 2014 and 2015 (approximately 114 rides/day), UPASS expansion and Route 901 service in Waukesha County in 2015 (approximately 120 rides/day), and several, all-day free transit service zones through and around the Zoo Interchange construction area in 2014-2015. These free zones included 92nd Street, 84th Street, Hwy 100, Watertown Plank Road, 76th Street, and Bluemound/Wisconsin Avenue (approximately 335 rides/day combined).

Noise and vibration from construction activities will vary by type of equipment in use and frequency of equipment use. The cumulative effect of these temporary impacts are managed through WisDOT special provisions for construction, which include requirements for contractors to maintain equipment and operate in compliance with relevant state, federal and local laws and regulations. Other ongoing construction projects are also typically subject to nuisance ordinances, including the City of Milwaukee's Chapter 80 nuisance ordinance.

Dust and air emissions from equipment and construction activities are common air quality impacts, which are managed by adhering to EPA emissions standards for equipment and on-site management strategies such as idling times, equipment maintenance, clean fuel and diesel emission control devices. Standard dust control measures such as on-site watering and equipment cleaning minimize impacts. For other construction projects, the City of Milwaukee's nuisance ordinance also regulates excessive discharge of air polluting materials such as dust.

Cumulative effects on water quality from construction activities are typically related to erosion from exposed soils. Erosion control is managed through compliance with WisDOT's *Standards and Provisions for Road and Bridge Construction*, Wisconsin Administrative Code Chapter Trans 401 and the WisDOT/WDNR Cooperative Agreement. For other construction projects, WDNR also enforces erosion control through NR 216, and the City of Milwaukee enforces water quality through its stormwater management regulations in Chapter 120 of the city's ordinances.

4 LAND USE EFFECTS – INFLUENCING FACTORS

This summary is meant to provide the rationale and background for the land use effects for the indirect and cumulative effects analyses. This summary is relevant to the indirect effects analysis and the cumulative effects land use analysis for Milwaukee and Waukesha counties as described in Sections 2 and 3 in this report. This summary provides the research basis for land use effects and it shows the various factors that influence the magnitude of the effects.

4.1 Research Background

Several research studies have shown that land use effects can result from improved transportation access that enables faster or more reliable travel between destinations, or by new access to destinations. The most recent research on this topic was published in 2012 by the Transportation Research Board (TRB). The report titled *Interactions Between Transportation Capacity, Economic Systems, and Land Use* analyzed 100 transportation case studies that documented the long-term before-and-after economic impacts of a variety of highway capacity investments (Strategic Highway Research Program 2012). According to the report, case studies confirmed the following typical sequence of land use and economic impacts that occur over time as a result of improved transportation accessibility:

- Land becomes more attractive as a place to live, work or recreate.
- Building construction and investment occurs.
- Residential and employment growth occurs.
- Local property tax revenues rise and sales and income taxes increase.

Based on the findings of this study as well as other past studies that have found similar findings, we can assume the I-94 East-West project, and the SE Freeways plan, would have some influence on land use development patterns as a result of capacity expansion that may improve accessibility. However, the TRB study also found that improved transportation accessibility alone is not enough to cause land use change. The context of the local environment will play a large role in how sensitive an area may be to land use effects as a result of changes in accessibility. As documented in the TRB report, supportive local factors such as availability of land; local government development policies and incentives; availability of complimentary infrastructure (i.e. sewer and water); and local economic conditions affect the magnitude of a transportation project's long-term economic impact (Strategic Highway Research Program 2012). The report states that transportation case studies with supportive local factors generated substantially more positive economic development outcomes. Conversely, transportation case studies that lacked local supporting factors or had distressed economies were associated with fewer economic development results.

Another important consideration that influences the magnitude of land use effects is the extent and maturity of existing transportation infrastructure. As discussed in the NCHRP Report 466, the influence of highway projects on land use diminishes with successive improvements because each new improvement brings a successively smaller increase in accessibility (National Cooperative Highway Research Program 2002). This means that new highways have a much larger effect on land use compared with an existing facility that is expanded.

4.2 Influencing Factors

Table 31 summarizes the presence of the various factors mentioned above that influence the magnitude of land use effects. Factors will a high rating increase the probability for a substantial effect and factors with a low rating greatly minimize the likelihood and magnitude of land use effects. Factors with a medium rating fall between high and low ratings. The rationale for the ratings is provided below the table.

Table 31: Land Use Effects - Influencing Factors

Rating	Factors that influence the probability and magnitude of land use effects					
	Improved accessibility	Maturity of existing transportation system	Available land	Favorable local development policies and incentives	Complimentary infrastructure (i.e. sewer/water)	Local/Regional economic conditions
High						
Medium/High						
Medium				X	X	
Medium/Low	X		X			
Low		X				X

High – Factor increases probably for land use effects
Medium – Factor has a medium probability for land use effects
Low – Factor lowers probability for land use effects

4.2.1 Rationale for Ratings

The following section provides rationale for each rating shown in Table 31.

Improved Accessibility

Historically, the original construction of the I-94 East-West corridor greatly improved accessibility to Waukesha County and most likely helped facilitate the spread of development along the freeway corridor and the redistribution of population and employment between the two counties.

A medium low rating was given because the subsequent improvements and widening of I-94 in Milwaukee and Waukesha counties are incremental. It will provide some accessibility benefits from reduced congestion and more reliable travel times, but these subsequent access benefits will be much less in comparison to the original construction of the freeway because no new interchanges[6] are being constructed and the travel time savings are not expected to be great enough to substantially alter travel patterns in the region.

Maturity of Existing Transportation System

A low rating was given because the region has a very mature transportation system comprised of freeways and local arterials that already provide a great deal of transportation accessibility. Even the less developed portions of Waukesha County are accessible by existing transportation infrastructure.

Available Land

A medium low rating was given because of the fairly developed nature of the study area. The majority of major developments tend to occur on infill sites and within redevelopment districts that are within or adjacent to existing population and employment centers.

[6] The only new interchange recommended within Milwaukee and Waukesha counties in the 2035 SEWRPC regional transportation plan is at Calhoun Road in Brookfield. To date this interchange has not been constructed and there are currently no plans to begin design and construction.

The majority of Milwaukee County is developed.[7] Former industrial areas are undergoing redevelopment throughout the county, most notably in Milwaukee, West Allis and Wauwatosa.

The eastern portion of Waukesha County is largely developed, but it is also has redevelopment districts. Available infill sites are attractive for development because of their close proximity to the region's exiting population and employment base.

The western portion of Waukesha County still has large tracts of undeveloped land and some areas along I-94 like Oconomowoc have experienced recent development. However, the western portion of the county tends to be less attractive to development because it is farther from the region's population and employment base and large tracts of land are protected natural areas. Plus, a substantial amount of land is under low-density zoning regulations further limiting the intensity of development in this portion of the county.

Favorable Local Development Policies and Incentives

A medium rating was given because most urban and suburban communities in the study area utilize development tools such as tax increment districts to grow their tax base and encourage employment growth within former industrial areas. However, the communities have policies and regulations in place to limit the intensity and density of development. They also have policies in place that preserve existing residential areas.

Complimentary infrastructure

A medium rating was given because nearly all of Milwaukee County and the urbanized portions of Waukesha County are served by existing sewer and water facilities.

A substantial portion of land within western and southern Waukesha County is outside an existing or planned sewer service area and lacks access to municipal water. Also, lands to the west of the subcontinental divide, which runs north-south through the eastern portion of Waukesha County do not have access to Lake Michigan water. An international Great Lakes water compact restricts water diversions outside the Great Lakes basins. The City of Waukesha is applying for an exemption due to radium contaminated groundwater wells, but a final decision has not been made. If approved, this would be the first exemption under the 2008 compact.

Local/Regional Economic Conditions

A low rating was given because the region and the state are relatively slow growth areas in comparison to other areas of the country such as Florida, Texas and California in the south and west. These areas have very high population and employment growth rates and are more susceptible to rapid changes in land use. Since the SE WI region and the state in general are slower growth areas in comparison to national trends, the potential for rapid change in response to infrastructure accessibility and capacity improvements is much less substantial.

4.3 Conclusions

Based on the range of factors that influence the probability and magnitude of land use effects, the I-94 East-West indirect and cumulative effects study area has a medium-low rating for land use effects. This supports the conclusions in the ICE report that state some induced development in Waukesha County may be present as a result of the preferred alternative (and the build out of the SE freeways in Milwaukee and Waukesha counties), but the effects are not expected to be substantial in comparison to existing trends or the No Build alternative. Due to the region's mature transportation system that already provides a great deal of accessibility and the incremental access benefits afforded from the expansion of I-94, Milwaukee and Waukesha counties will likely continue to develop as planned by local comprehensive plans and the redistribution of population and employment between the two counties would likely continue in accordance with existing trends. It is also possible

[7] Milwaukee County is the state's most urbanized county and most communities are fully developed. Franklin and Oak Creek are the only communities within the county that have substantial land remaining undeveloped.

the modernization of the I-94 East-West corridor could help the primary study area remain competitive within the region by reducing congestion and making safety and operations improvements to the interchanges. However, this effect is not expected to substantially change land use patterns because the primary study area already has a great deal of access to I-94 and the Preferred alternative maintains access in generally the same locations (except for Hawley Road and Mitchell Boulevard). Also, the access points in Waukesha County are established. The SEWRPC 2035 regional transportation plan recommends only one new interchange at Calhoun Road, but to date this interchange has not been constructed and there are currently no plans to begin design and construction.

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Appendix A: Stakeholder Meeting Summaries

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	City of West Allis
Date, Time	February 4, 1:30 p.m.
Location	West Allis City Hall, 7525 W Greenfield Ave, Room 220
Attendees	John Stibal, West Allis Bart Griepentrog, West Allis Patrick Schloss, West Allis Kristi Johnson, West Allis Dobra Payant, WisDOT Carolyn Seboe, HNTB Charlie Webb, CH2M Hill

Meeting Summary

A meeting was conducted with the city of West Allis, Department of Development to discuss indirect and cumulative effects for the Environmental Impact Statement being prepared for the I-94 East-West Corridor Study. After introductions, an overview of the alternatives that are being evaluated for the study was discussed. The project team mentioned the range of no build and build alternatives. More detailed information focused on the modernization alternatives that could affect West Allis including the interchange alternatives at 70th/68th streets, Hawley Road and the cemetery section.

The following is a summary of the comments that were made by West Allis staff members:

- Don't close access points and avoid long tunnels (people lose their sense of direction). West Allis heard that a 1.8 mile long tunnel could be constructed. The project team explained that a tunnel is not being considered and showed them where the double deck options through the cemetery were being evaluated.
- West Allis staff asked how congestion is defined and how the project team determines congestion. Charlie Webb explained that the corridor is being designed for 2040 (20 years beyond the anticipated construction date) and looks to achieve a LOS D during peak periods. They do not design for traffic during special events. Traffic analysis is still being developed, but the team anticipates that capacity expansion would provide only a few minutes of travel time savings.
- Preserve the 70th/68th street interchange. It provides access to West Allis' corporate gateway, State Fair Park, West Allis Towne Center and the Six Points Neighborhood. West Allis anticipates the density of employment and residential uses to continue to increase in this corridor. Some examples of developments include
    - Summit Place – existing office complex; contains 150 businesses; employs over 4,000 employees.
    - Renaissance Faire building (former Sam's Club) was renovated and has 250,000 SF of new office space.
    - Poblocki Sign
    - Milwaukee Area Technical College – West Allis campus
    - Global Power Components
    - Six Points Neighborhood - has 250 apartments planned
    - New office users are coming to the area.
    - New industrial use at southeast of Burnham and 68th intersection.

- The West Allis Comprehensive Plan proposes a long-term vision for the Milwaukee Mile Race car facility next to State Fair Park. If the racing operations were to end, the city would work to redevelop the area into a mixed-use high density office complex. The area contains over 100 acres and West Allis feels the area would be in high demand because it is centrally located in the Milwaukee area and the Milwaukee County Grounds are nearly built out. They anticipate office, residential, hotel uses. They would center the plan on daylighting the creek that is currently underground. West Allis said the density of the development would impact all of the area local streets and the adjacent interchanges would need to be able to accommodate the traffic.
- A new hotel and grocery store will be constructed in 2013 at the southeast corner of 84th Street and Greenfield.
- John Stibal said West Allis's primary concern is the interchanges because they serve West Allis' vision for redevelopment. Both the 70th/68th and Hawley interchanges are important for West Allis – they create "marque" areas.
- John Stibal said they are not worried about the proposed capacity expansion of the freeway. Their concern is with the interchanges.
- When asked about what interchange configuration option would be best for West Allis, John Stibal said it depends on the driver perception. Need to have interchanges that are easy for drivers to recognize and use. The braided configuration seems to be most similar to existing conditions with entrance and exit ramps close to the arterial streets. They were somewhat concerned about options (such as frontage and C/D roads) where drivers would have to anticipate the exit farther down the highway away, farther from their destination. John felt that if one of these options is selected signage would be very important. The configuration is not as important as the idea of an interchange.
- John said they are not concerned about traffic on local arterial streets. At this point they do not feel that lack of capacity on the freeway is affecting local arterials. They do see backups on the arterials when the freeway is severely backed up.
- If the no action alternative is selected or if spot improvements are selected, West Allis would be ok with that, they would be able to accomplish their goals with the existing access.
- West Allis felt the US 41 interchange with I-94 was over designed for the traffic. If the status of the interchange is downgraded to a service level it would not affect West Allis.
- The city's 2030 Comprehensive Plan, zoning and TIF Districts are available on the city's website.
- At the conclusion of the meeting, we explained that we will be hosting a focus group meeting in the spring to presents the results of the analysis and to obtain feedback. West Allis will be invited.

See figure on next page that shows development trends in West Allis.

Notes prepared by Carolyn Seboe, HNTB

Interchanges critical for West Allis to achieve local economic development goals
Pink Area - 70th/68th interchange serves West Allis redevelopment of former Allis Chalmers. Includes:
• Office corridor mixed with industries
• Town Center retail
• Six Points Neighborhood (apartment dev)
New Renaissance Faire Office
Summit Place Office Complex
MATC
Long term plans to redevelop Milw Mile into large/dense mixed-use office complex
250 apartments
New hotel and grocery store – construction 2013
New industrial
94
Mount Calvary Cemetery
Spring Hill Cemetery
Miller Park
Johnsons Woods Neighborhood
Dickinson St
Veterns Affairs
Joy Global
Zablocki VA Medical Center
State Fair Park
West Allis Town Center
Greenfield Ave
Walmart
Target
Six Points Neighborhood
VILLAGE OF WEST MILWAUKEE
Burnham St
Menards
JS Distribution
GE Healthcare
Lincoln Ave
Becher St
Lapham St
84th St
76th St
72nd St
70th St
68th St
64th St
60th St
Hawley Rd
Mitchell Blvd
Belpit Rd

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	Waukesha County, Department of Parks and Land Use
Date, Time	February 6, 10:00 a.m.
Location	515 W. Moreland Blvd., Waukesha, WI, Room AC 230
Attendees	Dobra Payant, WisDOT Carolyn Seboe, HNTB Jason Fruth, Waukesha County Planning & Zoning Manager

Meeting Summary

A meeting was conducted with Jason Fruth, the Waukesha County Planning and Zoning Manager to discuss indirect and cumulative effects for the Environmental Impact Statement being prepared for the I-94 East-West Corridor Study. After introductions, an overview of the alternatives that are being evaluated for the study was discussed.

The following is a summary of the comments that were made by Jason at the meeting:

- Jason asked if there is any consideration of commuter rail. He feels there needs to be transit/commuter rail that facilitates mobility east/west between Milwaukee and Waukesha counties. Also, Jason mentioned there is a chronic problem with wrong way drivers and drunk driving in this corridor and a commuter rail system would help.
- Jason does not feel the project will cause any significant changes to the land use patterns in Waukesha County. The two counties already have a strong relationship and there is already a substantial movement of people and commerce between the two counties. Jason feels the “reverse commute” is increasing with more young professionals moving to downtown Milwaukee.
- Jason felt reducing congestion along the highway would help build a strong regional economy by creating more efficient movement of products, resulting to more efficient businesses. He also thought reducing congestion would reduce fuel use and pollution.
- The county adopted a comprehensive plan in 2009 (available on their website). About 4/5 of the communities in Waukesha County participated.
- All communities in Waukesha County have zoning and land use plans in place including unincorporated areas.
- The county has a stormwater ordinance. All but two towns are subject to the ordinance. Brookfield and Eagle have their own stormwater ordinance.
- Jason mentioned the eastern portion of the county is mostly built out and development has already gone much farther west. If Brookfield had vast tracks of land remaining, indirect effects may be a greater concern, but they are now a built out community.
- Jason said aesthetic/CSD elements will be important. The freeway is a gateway to Milwaukee and it is the first impression many visitors to Milwaukee see. The freeways into St. Paul/Minneapolis leave an impression on visitors as you enter the Twin Cities.
- Jason mentioned how other communities have created green pockets along urban freeways such as Chicago and Pennsylvania. After the meeting, Jason forwarded the following link to the Chicago Greenway Project. http://www.gatewaygreen.org/about-us/

Notes prepared by Carolyn Seboe, HNTB

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	Menomonee Valley Partners, Inc. (MVP)
Date, Time	February 6, 1:00 p.m.
Location	301 W. Wisconsin Ave., Suite 400B, Milwaukee, WI 53203
Attendees	Dobra Payant, WisDOT Carolyn Seboe, HNTB Brad Heimlich, CH2M Hill Corey Zetts, Executive Director, MVP

Meeting Summary

A meeting was conducted with Corey Zetts, MVP Executive Director, to discuss indirect and cumulative effects for the Environmental Impact Statement being prepared for the I-94 East-West Corridor Study. The project team has already met with MVP staff and its board at previous meetings to go over the alternatives. Therefore, Corey did not feel we needed to review the alternatives at this meeting.

The following is a summary of the comments that were made by Corey:

- MVP has just started the process of updating the Menomonee Valley Plan. The last plan was adopted in 1998. The plan is being conducted with the city of Milwaukee and has a contract management team that includes members such as Harley, Potawatomi, Marquette Univ and some businesses along St. Paul Ave.
- The 1998 plan focused on redeveloping the Canal Street corridor. MVP feels that much of the 1998 plan has been fulfilled including the Menomonee Valley Industrial Center, Canal Street Commerce Center, the Harley Davidson museum, and Reed Street yards (planned water industry cluster).
- The 1998 plan helped to establish the valley as a destination for work, recreation and entertainment. In 1998 the valley had 5,000 jobs. Now the valley has 150 businesses and 14,000 employees. Redevelopment in the last 10 years created about 4,700 new jobs at a rate of 22.5 jobs per acre. Based on this information and available land, the valley could add another 2,000 jobs. The valley also generates 10 million tourist visits annually as the home of some of Wisconsin's top tourist destinations (i.e. Potawatomi, Harley)
    - MVP provided a document that shows the remaining development opportunities in the valley. (attached)
- The new plan will focus on the St. Paul Ave corridor and improving public access to the river. They are looking at high end green manufacturing. They will also focus on branding the valley as a cohesive entity/neighborhood. Residential uses are still off the table. Businesses along St. Paul are starting to invest in properties. Future uses are still to be determined, but home improvement/show room/light manufacturing seems to be a good fit for the corridor.
- The valley has many recreational amenities including:
    - Hank Aaron State bike trail
    - Valley passage – connects valley with the near south side neighborhood (dense residential area) and the Urban Ecology Center on Pierce Street.
    - A new 24-acre park (Airline Yards Park) – under construction, $2.5 million left to raise (partnership between MVP, city, state, Urban Ecology Center, others)
    - Soccer fields and playground – After the Airline Yards Park is completed, MVP will start focusing on raising money for the planned soccer fields located to the south of the railroad tracks, under and on both sides of the 35th Street viaduct. Canal Street forms the east and south border.

- Many employees that work in the Canal Street Commerce Center at businesses like Palermos and Falk use the bus route (Route 35) that has a stop on the 35th Street viaduct. They use the staircase that connects the viaduct to the valley. Many employees also use Route 17 along Canal Street.
- City Lights is a recent development to the east of 25th Street, north of the Menomonee River and south of the railroad tracks (south of St. Paul). City Lights is the first phase of a "planned development zone" that included the renovation of the historic Gas Light Company building at the west end of the development site. New public access to the river was provided. The building is used as offices for architecture and engineering firms. A second phase is anticipated to the east of City Lights project pending a new development proposal coming forward.
    - The main access for this site is from 25th Street on the west end. It is important for this access to be maintained.
    - 17th Street provides another access point, but the railroad crossing could be closed which would eliminate this access to St. Paul Avenue. Another access point is on the east end at 13th Street. This would require extending and improving Mt. Vernon Street to the east.
- 25th Street is very important to the valley because it not only serves the City Lights development, but it also acts as alternate route when a train blocks 13th Street.
- When traffic on the west side of Canal Street is congested it interferes with Falk's business shipments and employee shifts. St. Paul can also back up and it affects customers' ability to access on-street parking that is relied upon by St. Paul businesses.
- Flooding is a concern for businesses along St. Paul Avenue. Water is draining from the Badger Truck site onto St. Paul and through the businesses. MVP is looking into ways to capture and redirect the stormwater.
- MVP is working to improve the roadway connection to the former Basil Ryan site to encourage development.
- MVP wants to keep access from the freeway easy to get in and out of the valley.
- MVP is concerned about the footprint of the new freeway and wants to make sure developable parcels are maintained. Parcels that can't be developed tend to encourage nuisance activities.
- MVP prefers the 35th Street closure and braided ramps alternatives on the east segment.
    - No access at 35th Street would not impact the valley businesses. MVP feels it would simplify access in this area (fewer driver decisions) and creates a more direct 27th Street interchange, which is most important to valley businesses.
    - If the 35th Street interchange is maintained, MVP feels the braided option would also make it easy for people to get on and off.
    - They are concerned about interchange options such as CD and frontage roads that make access less direct and potentially increase travel time.
    - MVP also prefers to maintain the St. Paul connection under the freeway.
- MVP is concerned about the hill at the 35th Street ramp and how the road will intersect with the Hank Aaron trail.
- Development constraints to the St. Paul corridor include:
    - The presence of nuisance activities that create an unwelcoming environment.
    - St. Paul intersections with 28th through 25th is confusing and the land uses are not well kept.
    - The city lots are not a good gateway
    - Need to improve neighborhood connectivity (vehicle and pedestrian)
    - Need to improve access to properties along the river. (have a development easement along north side of river in place.)
- The valley currently benefits from its access and visibility to the freeways. They are concerned about how high the new ramps will be and if they will block visibility to the valley.
- The valley has strong market demand; it just needs to free up the space for development. They have many requests for commercial, but nowhere to put them. They are losing opportunities to other places in the city or the region – larger commercial developments going somewhere else. MVP is working to make land available. Valley businesses benefit from large workforce in the area.

- When asked about capacity expansion, Corey said MVP sees the need for modernization and they see problems with congestion and accidents.
- At the conclusion of the meeting, we explained that we will be hosting a focus group meeting in the spring to present the results of the analysis and to obtain feedback.

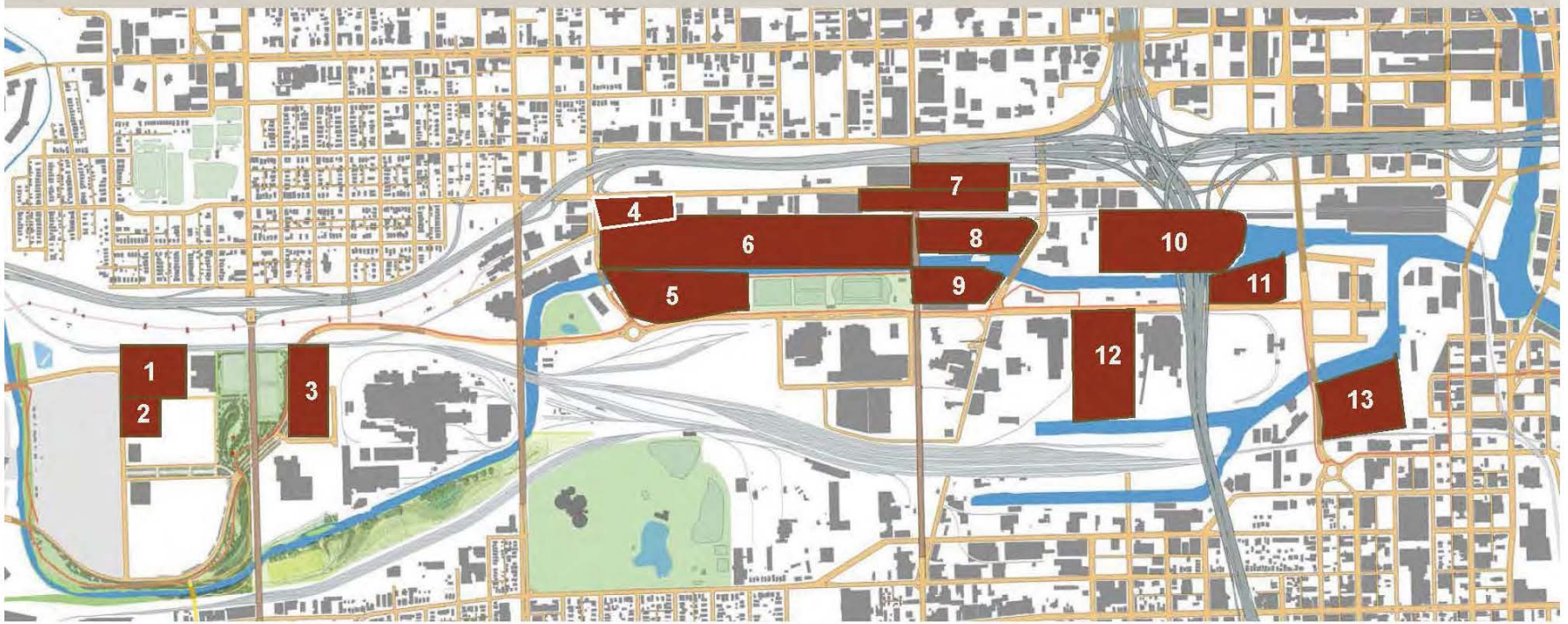
See figure on next page that shows development trends in the Menomonee Valley.

Notes prepared by Carolyn Seboe, HNTB

MV Industrial Center
Future soccer fields
Falk Corp
City Lights
Flooding
Former Basil Ryan property
Harley Davidson Museum
FOCUS OF PLAN UPDATE
Most important access point to valley
Canal Street Commerce Center
Reed Street Yards
Valley Passage
Palermos
New 24 - acre park
Valley Park Neighborhood
Hilltoppers Neighborhood
Potawatomi Bingo Casino
Marquette University
Michigan St
St. Paul Ave
Canal St
Wheelhouse Rd
Pierce St
National Ave
Florida St
Virginia St
Joy Global

Development Opportunities in the Menomonee Valley

Properties available or city owned and poised for redevelopment. Job estimates based on Valley's average of 20+ jobs/acre



1. MVIC, 7 acres > 150 jobs
2. MVIC, 2 acres > 40 jobs
3. MVIC 4 acres > 80 jobs
4. DMV, 3 acres > 60 jobs
5. City DPW waterfront lot > 100 jobs
6. Private 24 acres waterfront > 480 jobs
7. 10 acres of buildings, land > 200 + jobs
8. City MURF waterfront facility > 100 jobs
9. City DPW waterfront lot > 100 jobs
10. City/RACM waterfront lots > 200 jobs
11. Waterfront lot > 120 jobs
12. 9 acre lot > 180 jobs
13. M7 Water Campus, 15 acres > 300 jobs

- These parcels, nearly 100 acres, could yield 1,950 new jobs.

The Menomonee Valley is home to more than ***150 businesses*** and more than ***14,000 employees***. Redevelopments in the last 10 years created 4,700 new jobs at a rate of 20 jobs/acre. Current development opportunities would yield ***1,950 additional jobs*** at this rate. The Valley is also home to top WI tourist destinations and receives more than ***10 million tourist visits annually***.

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	Menomonee Valley Partners
Date, Time	July 10, 2:00 p.m.
Location	Teleconference
Attendees	Corey Zetts, MVP Dobra Payant, WisDOT Jason Lynch, WisDOT Carolyn Seboe, HNTB

Meeting Summary

A conference call was held with Corey Zetts from the MVP as part of the ICE process to follow up on MVPs thoughts on land use and development effects related to the latest Modernization Alternatives for I-94. Dobra Payant, WisDOT, Jason Lynch, WisDOT and Carolyn Seboe, HNTB were present from the study team. This meeting was needed because stakeholder outreach conducted for the ICE analysis in 2013 did not include the On-Alignment option. Below is a summary of key points Corey stated on the phone call:

Summary

MVP has been meeting with businesses in the valley and recently held a meeting with about 15 of the businesses that would likely be most impacted by the changes to the freeway (businesses that are closest to the freeway and/or businesses that have large properties in the valley). Feedback has been really mixed on the two alternatives, Off-Alignment and On-Alignment, and no consensus has been achieved. Businesses are most concerned about the ease of access to businesses in the valley (both on the freeway and within the valley) and the long-term impression the transportation infrastructure will have on the valley. The On-alignment alternative would have the least impact on the character of the valley, but consolidated access at 27th Street may provide some intuitive traffic benefits. If the Off-Alignment option is selected businesses in the valley feel that wayfinding signage from the interchange would be critical and that context sensitive solutions would be necessary to minimize the "tunnel-like" feeling the bridge and ramp would have over the entrance to the valley on St. Paul.

Access Effects

Corey said the consolidated access at 27th Street under the off-alignment alternative would make it easier for customers and suppliers to get to the valley from the freeway, but it could be more challenging for them to find their destinations within the valley after they've exited at 27th Street. They understand a consolidated 27th Street interchange is intuitive from a traffic standpoint, but will it be good for the valley? Wayfinding signage will be critical to get people to their destinations once they've exited the freeway.

The situation is reversed for the On-Alignment Alternative. It would be more challenging for people to find the exit along the freeway, but it is easier to reach their destination within the valley after they've exited due to the easy connection between 25th Street and St. Paul Avenue. Potawatomi Bingo Casino is the strongest advocate for maintaining access at 25th Street. They have a lot of first time visitors, have made substantial investments recently and direct their visitors and tour buses to this ramp.

Encroachment Effects

Valley businesses are concerned the bridge structure and elevated ramps proposed under the Off-Alignment option would affect the character of the valley and affect people's impressions of the valley. They are very

concerned about the length of the bridge and ramp that would go over St. Paul Avenue and that this would create a dark tunnel-like entrance to the valley. This could create a bad first impression of the valley for visitors and affect its economic development potential, especially along the St. Paul Avenue corridor. Corey said businesses are concerned undevelopable remnant parcels would become problem parcels (attract nuisance activities) and subsequently property values would go down and it would be hard to recruit employees and customers. Corey said if this alternative is selected, it would require context sensitive solutions so people do not feel like they are going through a tunnel.

Corey said valley businesses like that the On-Alignment Alternative would have less impact on the character of the valley and it would preserve the most developable land. It also would retain more businesses and it would retain more future development sites such as the DMV.

Travel Lanes

Corey said no businesses have expressed concerns about congestion. They are mostly concerned about local access and how the infrastructure would affect people's impressions of the valley. People have been living with the congestion for so long that they have learned how to deal with it.

Notes prepared by Carolyn Seboe, HNTB

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	City of Milwaukee, Department of City Development
Date, Time	February 6, 3:00 p.m.
Location	809 N Broadway, Milwaukee, WI
Attendees	Dobra Payant, WisDOT Keegan Dole, WisDOT Carolyn Seboe, HNTB Kathleen Matson, HNTB Vanessa Koster, DCD Bob Harris, DCD Maria Pandazi, DCD Mike Maierle, DCD

Meeting Summary

A meeting was conducted with staff from the city of Milwaukee, Department of City Development (DCD) to discuss indirect and cumulative effects for the Environmental Impact Statement being prepared for the I-94 East-West Corridor Study. DCD staff was not familiar with the alternatives being proposed. Therefore, a large portion of the meeting was spent presenting the alternatives.

The following is a summary of the comments that were made by DCD staff at the meeting:

- East Segment
    - An updated plan for the Menomonee Valley has been initiated. Bob Harris and Maria Pandazi are overseeing the planning process.
    - 35th Street closed alternative – DCD staff felt this alternative has the least property impacts, but they were concerned about how the closure would affect businesses in the Menomonee Valley and trucks that rely on this access. They also mentioned concern about access to Marquette High School.
    - Split Diamond/frontage roads – This is a compromise alternative – doesn't fix the curve in the mainline and requires less land than the CD road alternative, which shows the curve fixed. DCD was concerned about impacts to St. Paul. The Menomonee Valley Plan is being updated and St. Paul as a gateway corridor that will be a focus of the updated plan. DCD staff said it may be ok if St. Paul does not connect under the freeway, but a connection to 25th Street should be maintained. DCD would like to better understand the visual impacts of the alternative.
    - CD Roads – DCD staff felt this alternative has more property impacts on the south side. They acknowledged that more land could become available on the north side and discussed the potential of filling the land to the north to make it developable. DCD staff said it might not be that much more impact to fix the mainline curve because the other alternatives that don't fix the curve may create remnant parcels that are undevelopable.
    - If frontage roads or CD roads are used, DCD is concerned about what would happen to trucks if they miss the exit.
    - DCD asked what concerns Badger Truck has expressed.
    - Properties along St. Paul are experiencing problems with flooding. The city got a grant to conduct a Conditional Letter of Map Revision with FEMA.
    - The Menomonee Valley sustainability principles should be worked into the freeway project.
    - DCD expressed concern about how parcels (or remnant parcels) along Greeves Street would be accessed if the street is closed.

    - The Avenues West Neighborhood has a redevelopment plan that is available on the city's website. It discusses improving the commercial corridor along 27th street as well as other recommendations.
- DCD had questions about frontage roads and if they would feel/function like local roads. They asked if driveways would be allowed and if bike lanes could be included. Kathleen said that has not been decided and would likely depend on the amount of traffic. DCD could see having one side of the frontage road function as a mobility transition and the other side has a local feel with local access.
- CSD will be important.
- DCD staff said there is a lot of city and county traffic east of the Zoo Interchange and there may be some benefit to separating local and regional traffic in this corridor.
- DCD asked how stormwater will be handled. The project team said WisDOT has regulations that must be followed and is coordinating with MMSD. A team is dedicated to stormwater improvements. DCD said they would like to avoid ponds on remnant parcels.
- Stadium Interchange
    - The Washington Park Plan recommends filing in US 41 to reconnect the neighborhoods.
    - US 41 really serves as an arterial, not a highway.
    - US 41 has local access issues. Less infrastructure is needed. Let Miller Parkway be a local street to serve local businesses and institutions.
    - Shift the interchange south to minimize the impact to the Story Hill neighborhood.
    - DCD asked for some examples of existing single point intersections.
    - The area between 35th and Hawley is a no man's land for pedestrians. No streets or bridges that provide access across the freeway. The Near West Side Plan (under District 4) recommends pedestrian access under the freeway.
- Cemetery options were reviewed
    - DCD asked about the length of double deck section. Project team said latest estimate is about 3,000 feet.
    - How will the double deck affect neighborhoods? Will houses be next to a wall?
- West segment
    - See the West Side Area Plan for this area
    - No development plans in this area.
    - DCD is very concerned about impacts to neighborhoods. The freeway will get closer to houses. Homes will be right next to noise barriers.

Notes prepared by Carolyn Seboe, HNTB

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	Alderman Murphy, District 10 and Jeff Polenske, DPW
Date, Time	February 7, 10:00 a.m.
Location	200 E Wells Street, Milwaukee, WI
Attendees	Dobra Payant, WisDOT Carolyn Seboe, HNTB Beth Foy Michael Murphy, District 10 Alderman Jeff Polenske, Milwaukee DPW

Meeting Summary

A meeting was conducted with Michael Murphy, District 10 Alderman, and Jeff Polenske, DPW, to discuss indirect and cumulative effects for the Environmental Impact Statement being prepared for the I-94 East-West Corridor Study. Both had previously seen the alternatives for the project.

The following is a summary of the comments that were at the meeting:

- From a cumulative standpoint, the cost of the Zoo Interchange and I-94 N-S projects will decrease the amount of money that is available for other transportation projects.
- The state's investment in only highways provides no other options for people in the city. The only option they have is to purchase a vehicle. Milwaukee residents are low income and have to spend a greater percentage of their income on transportation to get to jobs. This continues the pattern of hyper-segregation of the community. Zoning in outlying areas does not permit affordable housing.
- Highway capacity expansion will alleviate traffic in the short term, but in the long term will induce traffic and the traffic problem won't be solved because there are no other options.
- Increased traffic will increase pollution. The city already has a high asthma rate.
- Highway expansion will devalue properties from increased noise and light. The Alderman is already hearing from people looking to sell their homes, but realtors are concerned about the future highway improvements and their ability to sell homes. Also, he received a letter from a couple from Chicago that purchased a home on 50th Street and they want to know if they just made a huge mistake.
- The alderman is concerned about noise walls and the shadow effect and noise going over the barrier.
- Property takings decrease property taxes. Property owners are compensated, but the city is not.
- Construction – increases traffic in residential neighborhoods, business and schools impacted by closures. Cumulative effect on area from construction impacts for Zoo and I-94.
- Marquette High School is concerned about their access at 35th Street. Their student body draws from a regional area and this is an important access point.
- The state has chosen to invest in one mode of transportation. This has regional economic implications. The population is aging and workers need to be replaced. When the economy rebounds we will have a worker shortage. (supply of labor in Milwaukee can't get to jobs in outlying areas).
- Increased capacity on highways will increase operations and maintenance costs, which will decrease money available for other means.
- The local street network has limited ability to accommodate more vehicular capacity. The way to make streets increase capacity is with transit. Simply widening the highway won't help.
- Employment is a regional issue. To not have a regional organization to discuss transit is detrimental to the region. It is hard to get people to jobs. Employers have to provide the service of transporting employees. This is a cost that most employers did not expect; they expect government to provide transit. This trend will continue to increase.

- When the alderman was asked about the different alternatives. He said impacts go up or down depending on the alternative. Alternatives that have a wider footprint have more encroachment impacts to neighborhoods. Alternatives that elevate the highway have a greater impact from increased pollution and noise.
- US 41 – there is broad support for the conversion of US 41 to a boulevard. A service interchange is consistent with this the long term vision of converting US 41 to a boulevard.
- The corridor does have challenges with safety and has serious design issues that need to be fixed.
- Alderman Murphy expressed concern about WisDOT using the same consultant for the EIS and the design. He felt this could encourage recommending alternatives that require more infrastructure.
- Miller Brewing has 240 trucks per day. Major employers in this area.
- The 44th street connection – a more substantial street could impact the Bluemound and Story Hill neighborhoods.
- No major redevelopment projects on the west side.
- Billboards – if billboards are acquired for the project, don't increase number along the corridor when WisDOT looks to replace. The digital billboards create light pollution for neighborhoods. Some concerns about relocating billboards on Zoo Interchange project.
- Frontage Roads – impacts will depend on acquisitions and if traffic and backups are pushed into the neighborhoods.
- Mitchell Blvd – this is a dangerous access point. Some may be ok with closing this access point.
- Hawley Road – has problems with wrong way driving and drunk driving.
- The city has 40,000 people driving without a license.
- I-94 construction at end of Zoo Interchange construction. This will be 15+ years of construction or more if Zoo construction is extended. Will need traffic mitigation.
- 68th and Fairview Avenue – already a dangerous intersection. Traffic will increase during construction.
- 77th Street and Blue Mound Road businesses – employees couldn't get out on Blue Mound Road during the I-94 resurfacing project. City allowed businesses to have another access point, but was in residential neighborhood.
- Concerned about parking along Blue Mound Rd during construction. Businesses need on-street parking.
- Traffic mitigation – WisDOT makes road improvement traffic mitigation for the long term. Consider transit during construction, but maintain transit for the long-term after construction.
- As a result of the project, there will be less money available for local streets and transit. This is setting the state up with problems for workers and employers.
- Merrill Park – redoing park. Very popular playground for children. Concerned about traffic on 35th Street-doesn't want to see any negative impacts to park.

Notes prepared by Carolyn Seboe, HNTB

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	Layton Boulevard West Neighbors (LBWN)
Date, Time	February 7, 1:00 p.m.
Location	Sacred Heart Center, 1545 S. Layton Blvd, Milwaukee, WI
Attendees	Dobra Payant, WisDOT Jake Livermore, WisDOT Carolyn Seboe, HNTB Brad Heimlich, CH2M Hill Charlotte John-Gomez, Executive Director LBWN

Meeting Summary

A meeting was conducted with Charlotte John-Gomez, LBWN Executive Director, to discuss indirect and cumulative effects for the Environmental Impact Statement being prepared for the I-94 East-West Corridor Study. The project team has already met with LBWN at previous meetings to go over the alternatives. Therefore, Charlotte did not feel we needed to review the alternatives at this meeting.

The following is a summary of the comments that were made by Charlotte:

- Layton Boulevard West is generally bounded by 27th Street (east) and Miller Parkway (west) and Lincoln Avenue (south) and Pierce Street (north). It incorporates three Milwaukee neighborhoods: Silver City, Burnham Park, and Layton Park.
- As part of the Zilber Neighborhood Initiative, LBWN completed a Quality of Life Planning process. (A catalytic project map was provided and is available at: http://lbwn.org/
- The Muskego Way neighborhood (adjacent to LBWN – 27th to 16th streets and Greenfield to Becher) is initiating a neighborhood plan with the Local Initiatives Support Corporation (LISC) through a grant from the Northwestern Mutual Foundation.
- LBWN partners with Clarke Square neighborhood (west of 27th between Pierce and Greenfield) who also has a Zilber Neighborhood Quality of Life Plan.
- The Near South Side Area Plan, which includes LBWN was approved by the Milwaukee Common Council in 2009.
- Valley Passage project completed (A partnership between the WisDOT, WDNR, the city of Milwaukee, Menomonee Valley Partners, and Urban Ecology Center - re-establishes a connection between Milwaukee's Near South Side neighborhood and the Menomonee Valley)
    - Serves as a trail head for the Hank Aaron State Trail
    - Allows residents to walk to work to thousands of jobs in the Menomonee Valley.
    - Provides access to recreation amenities and natural resources in the Valley.
- Silver City Townhomes – completed in 2010 includes 20 affordable, rent to own housing units near the intersection of the 35th Street viaduct and W. Pierce St.
- Pierce Street – seeing new investment as a result of Menomonee Valley and the Valley Passage.
    - Urban Ecology Center located next to Valley Passage.
    - Wisconsin Bicycle Federation opened office at 3618 W. Pierce Street.
    - Underutilized corridor, looking to repurpose.

  - Envision more green businesses and sustainable products (i.e. greenhouses, whole sale herbs) providing a back production, storefront retail and upstairs housing setting. (WHEDA Transform Milwaukee, goal to create jobs)
  - LBWN and South Side Organizing Committee are working with landlords to improve buildings
- Encouraging more walking and biking in neighborhood
  - National Avenue – popular bike route
  - Greenfield Avenue – LBWN talking to Milwaukee DPW about adding bike lanes
  - Layton Boulevard – road improvement funded between National and Oklahoma, considering bike accommodations
  - Mobile bike hub – LBWN in partnership with the Wisconsin Bicycle Federation and LISC are piloting a new bike trailer project that will ride around the neighborhood and help residents repair bikes and conduct bike repair workshops.
  - Two new bike businesses on Pierce
  - Hank Aaron State Trail
- National Avenue – main commercial district within neighborhood
- Lincoln Avenue – most established commercial corridor, some vacancies, but many businesses have stayed for generations.
- Miller Park Way – provides access to national retail/big box retail. New Wal-Mart hiring 250 employees.
- Silver City Main Street (W. National Avenue between 31st Street and Miller Parkway)
  - Composed of a mixture of businesses at various stages of development
  - Known for its international dining experiences
  - Includes retail, restaurants and commercial services.
  - Turnover of businesses is decreasing (since recession) but district is still fragile.
- 35th and National – LBWN purchased and renovated vacant building. Now includes first floor retail and two upstairs apartments. Intersection important Gateway for Silver City businesses.
- Rent-to-own initiative – 24 renovated and energy efficient homes to help reduce the number of foreclosed homes in neighborhood and stabilize housing market.
- Greenfield Avenue - Has many vacant buildings, has a few retail businesses between 35th and 39th streets, but it is not a retail corridor. LBWN is focusing on new investment in the corridor to improve its image.
- Burnham Park – Highly used park. LBWN is raising money to improve park.
- Frank Lloyd Wright American System Built Homes – Six FLW homes originally designed as affordable homes for moderate-income families are located at the 2700 block of Burnham Street. Some of the homes are owned by the Frank Lloyd Wright® Wisconsin Heritage Tourism Program, Inc. One home has been turned into a museum.
- Burnham and 31st – received grant for art feature
- El Rey Superstore– local grocery store at northwest corner of Burnham and 35th Street, number one destination and anchor for neighborhood.
- Maria Linden Assisted Living Apartments – new 60 unit independent and assisted senior apartment building on the campus of the School Sisters of St. Francis. Located at southwest corner of Greenfield and Historic Layton Boulevard. Just started to lease units.
- The neighborhood is starting to see a lot of momentum. They are seeing the “fruits of the seeds they planted” over many years. People are seeing the area as a better neighborhood, Place to eat, start a business and live. They will be starting a marketing campaign to reinforce this.
- If access to the freeway is restricted at 35th Street, it would slow down the momentum. 35th Street provides direct access to businesses; 27th Street is less direct and requires more maneuvers.
- Improvements to the 27th Street would help improvements along Pierce and National by encouraging more traffic to area.

- People from region are coming to the area.
- They are concerned about truck traffic on 27th Street.
- Development constraints include no empty parcels; people's perceptions; some existing residents don't want change; It is hard to get financing for market rate housing. City's zoning is sometimes restrictive, but can make it work.
- The demographics of the neighborhood are changing. Families and professionals are buying homes. This is changing the demand for housing and businesses.
- LBWN can provide data to show changing demographics.
- Existing residential base
    - Have 62 foreclosures, plus 160 in courts; Area was targeted with high cost mortgages
    - Have high owner occupancy rate – 88% for single family homes and 60% for duplexes.
    - Have demand for housing – investors are offering cash for foreclosures. LBWN is trying to avoid this by purchasing foreclosure properties so they can maintain own occupancy rate.
    - House on Layton sold for $170,000 – showed demand for higher end housing
    - LBWN buys foreclosed homes and sells for about $90,000. They get multiple offers.
    - Property values are increasing.
- Layton Boulevard is a boundary for the neighborhood. People neighborhoods to the east inspire to move west of Layton Blvd. People rent east of Layton Blvd and own west of Layton Blvd.
- The Latino population increased 42% in 2000 to 66% in 2010.
- Charlotte expressed very strongly that access to freeway via 35th Street is a huge amenity for neighborhood. Much progress has been made, but neighborhood is still fragile. New homeowners when asked why they moved to the area often site access to freeway allows them to get places easily. If the access is removed, the amenity will be taken away and LBWN is concerned the neighborhood would revert to the early 1990's.
- If the no action alternative is selected, it would have no effect on neighborhood. People would continue to access neighborhood.
- Charlotte said 35th Street interchange serves impulse trips. She does not prefer interchange alternatives that make access less direct to the 35th like the frontage roads and CD roads. She doesn't want people to have to think ahead. Frontage roads at 26th and 27th streets would be ok, serves more people going home and less businesses. Charlotte would like to keep access as is.
- For the ICE focus group meeting, Charlotte recommended Clark Square Neighborhood, Urban Ecology Center and Sandy Foller from the Domes.

See figure on next page that shows development trends in LBWN.

Notes prepared by Carolyn Seboe, HNTB

Maintaining access at 35th Street very important to LBWN and local businesses
Secondary access used to access residences
Avenues West Neighborhood
Merrill Park
St Paul Ave
Hilltoppers Neighborhood
Vernon Ave
Miller Park
Valley Passage – link to Men Valley jobs and rec, brings employees to LBWN businesses
Silver City Townhomes
Pierce Street - envision suppliers of sustainable businesses
Pierce St
Urban Ecology Center
Global
National Ave
Mineral St
Silver City Neighborhood
LBWN renovated corner building
Silver City Main Street District (international dinning destination)
Scott St
Walmart
Maria Linden Assisted Living
Greenfield Ave
Greenfield – LBWN working to improve image; not retail corridor
High owner-occupancy rate west of 27th Street.
Burnham Park Neighborhood
El Rey
Mitchell St
Burnham Park
Historic Layton Blvd District
Burnham St
Rogers Park
VILLAGE OF WEST MILWAUKEE
Frank Lloyd Wright homes.
Roger St
Fundraising to improve park
Menards
Becher St
Lincoln – Most established commercial corridor
Layton Park Neighborhood
GE Healthcare
Lincoln Ave
Hayes Ave

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	City of West Milwaukee
Date, Time	February 14, 10 a.m.
Location	200 E Wells Street, Milwaukee, WI
Attendees	Dobra Payant, WisDOT Jake Livermore, WisDOT Charlie Webb, CH2M Hill Carolyn Seboe, HNTB Len Roecker, Village Engineer Kim Egan, Village Administrator Ron Hayward, Village President Jim Stenzel, Superintendent of Public Works

Meeting Summary

A meeting was conducted with representatives from the village of West Milwaukee to discuss indirect and cumulative effects for the Environmental Impact Statement being prepared for the I-94 East-West Corridor Study. An overview of the project and the proposed alternatives was presented.

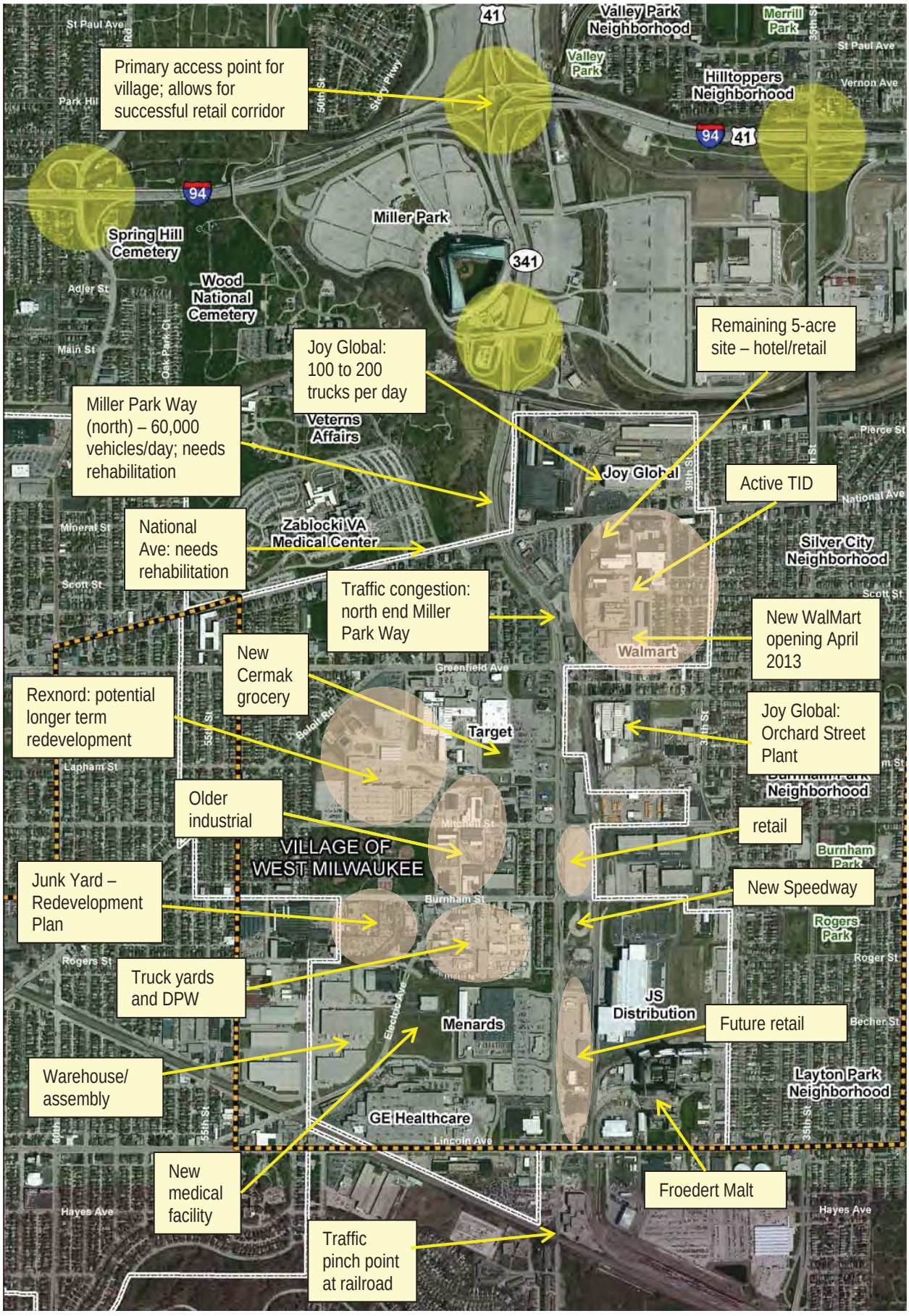
The following is a summary of the comments that were made at the meeting:

- West Milwaukee is a small community that has 719 acres of land. According to the U.S. Census West Milwaukee had 4,200 residents in 2010. A national chain retail corridor has emerged in West Milwaukee along the Miller Park Way corridor as former industrial lands were redeveloped.
- West Milwaukee asked if the team has received feedback from the Brewers. Charlie said they like pieces of different alternatives, but haven't expressed a preference yet. They want to balance the footprint of the freeway with access needs.
- The village has benefited from good freeway access. It is the reason why retailers are building in the Miller Park Way corridor. For this reason, the village wants to maintain the ease of access to Miller Park Way. How the access is changed or perceived by the public is important.
- The freeway work WisDOT has completed is well received once it is complete.
- US 41 and Miller Park Way access points are also important for Wauwatosa and Milwaukee's neighborhoods.
- The village's own redevelopment success has caused traffic impacts in West Milwaukee. Miller Park Way has 60,000 cars/day on the north end near National Avenue and drops as you go south. More development is still planned and it will continue to exasperate the traffic issues. The village will consider increasing capacity of the roadway in the future.
- Miller Park Way is the backbone through the village. They want to make sure Miller Park Way is not labeled as a congested corridor because it will make it less desirable. Many east/west corridors also feed into Miller Park Way.
- Concerned about traffic diversion during construction and how that increased traffic will impact the area given that it already has existing traffic problems.
- The village prefers options that maintain free flow traffic as much as possible. They want to avoid traffic backups into the village. They know how to deal with event traffic (Miller Park, State Fair), but it will be even more challenging to manage event traffic as traffic increases especially during construction of the freeway.

- Miller Park Way south of National Avenue will be 30 years old in 2018 and the village wants to work with WisDOT on rehabilitating the road. It is starting to deteriorate. West Milwaukee will be applying to WisDOT for Surface Transportation Program funds. It will be important to keep Miller Park Way in good shape to help with construction traffic. The village will also apply for Surface Transportation Program funds for Greenfield Avenue. It is a primary east/west corridor that is really showing its age.
- The village is concerned that if 35th Street is closed it will increase traffic on Miller Park Way and National Avenue.
- Joy Global (north of national between Miller Park Way and 39th Street) outgoing deliveries used 35th Street to access freeway, but since the city of Milwaukee installed streetscape planters at 35th and National, the trucks can't make the turn.. They generate anywhere between 100 and 200 truck trips per day along Miller Park Way. Joy Global also has a facility (Orchard Street Plant) to the south of Greenfield between 38th Street and Miller Park Way. It is in the city of Milwaukee.
- The VA is adding housing for families of soldiers to the north of National and west of Miller Park Way. The housing will be accessible from within VA property only. VA is a big institution and feels the land should be reserved for veteran uses only. West Milwaukee talked to them some years ago about expanding National Avenue and the VA did not want them to touch VA land.
- When asked about freeway capacity increases, the village representatives said they expect freeway capacity enhancements to benefit the village by creating less congestion. Increasing I-94 from six to eight lanes will allow for better traffic operations and continue the ease of access to the village. More capacity on the freeway would also help keep traffic off local streets.
- Miller Park Way has pinch points on the north and south ends (at Lincoln by railroad bridge). The village would like to see the traffic issue on the south fixed, but residents in Milwaukee's Jackson Park neighborhood are concerned it will create more traffic in their neighborhood.
- The traffic has been good for retail development, but it has created a local traffic problem. Miller Park Way is second to Bluemound Road for traffic volumes.
- The village has a 2010 Comprehensive Plan. The village's land use plan shows predominately retail/commercial uses along the Miller Park Way corridor. This includes retail and service oriented commercial establishments such as medical offices. There is no demand for office users. No plans for new residential areas.
- Most of the retail sites along Miller Park Way are developed. It consists primarily of national chain retail stores including large big box retailers like Menards and Target and smaller retail facilities such as restaurants, banks and gas stations. A new Cermak Fresh Market grocery store opened in 2012 to the south of Target. A new Speedway gas station is planned at the southeast intersection of Burnham and Miller Park Way. Additional retail is planned on the adjacent northeast corner.
- The village has an active TIF district along the 41st Street corridor bound by Greenfield, the railroad, National and 39th Street. A new Wal Mart will be opening April 2013 at the northeast intersection of Greenfield and Miller Park Way (east of railroad). It is a 15-acre development site. A 5-acre site (northwest corner) remains in this area and it is planned for retail and hotel uses.
- If WisDOT selects the no action alternative, the village sees no impact as they would maintain existing freeway access. However, they are concerned the no action alternative would not address congestion on the north end of the village/Miller Park Way, which could make it more difficult for them to implement their land use plans in the long term.
- West Milwaukee asked about the cemetery section and expressed concerns about options that have little/no shoulder and how safe that would be. The team said it is not ideal from a safety perspective.
- No changes are anticipated to the Canal Street interchange. The village feels this interchange operates well and it helps get people to events and downtown.
- The village has a few small triangle parks and one county park (West Milwaukee Park). No other natural or cultural resources.
- In terms of development constraints, the village said they are running out of developable sites. There is a strong market for retail development when land is available. The traffic volumes and residential densities make it an attractive corridor for retail development.

- The village has some remaining large manufacturing facilities (GE, Rexnord, Joy Global, Froedert Malt). It is difficult to determine their future plans and how their workforce needs will change over time. At any point in time, one of these facilities could leave and new redevelopment areas may evolve.
- A redevelopment plan is being prepare for the area known as the junk yards. It is an approximately 10 acre area south of Burnham and west of Electric Ave
- The village uses the B5 Planned Unit Development zoning code for most new development. It provides the village with flexibility for uses.
- The village gets calls from developers looking for land for residential development, but they do not have any available residential parcels.
- Discussion about the project schedule. The team confirmed construction will occur after the Zoo Interchange project.
- Improved traffic operations on the north end will benefit the village.

Notes prepared by Carolyn Seboe, HNTB


Primary access point for village; allows for successful retail corridor
Joy Global: 100 to 200 trucks per day
Remaining 5-acre site – hotel/retail
Miller Park Way (north) – 60,000 vehicles/day; needs rehabilitation
Active TID
National Ave: needs rehabilitation
Traffic congestion: north end Miller Park Way
New WalMart opening April 2013
New Cermak grocery
Rexnord: potential longer term redevelopment
Joy Global: Orchard Street Plant
Older industrial
retail
Junk Yard – Redevelopment Plan
New Speedway
Truck yards and DPW
Future retail
Warehouse/ assembly
New medical facility
Froedert Malt
Traffic pinch point at railroad
Valley Park Neighborhood
Merrill Park
Hilltoppers Neighborhood
Miller Park
Spring Hill Cemetery
Wood National Cemetery
Veterns Affairs
Joy Global
Zablocki VA Medical Center
Silver City Neighborhood
Walmart
Target
VILLAGE OF WEST MILWAUKEE
Burnham Park
Rogers Park
Menards
JS Distribution
Layton Park Neighborhood
GE Healthcare
St Paul Ave
Park Hill
Adler St
Main St
Mineral St
Scott St
Greenfield Ave
Lapham St
Mitchell St
Burnham St
Rogers St
Electric Ave
Lincoln Ave
Hayes Ave
Pierce St
National Ave
Vernon Ave
Roger St
Becher St
41
94
341

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	African American Chamber of Commerce (AACC)
Date, Time	February 25, 3:00 p.m.
Location	Prism Technical, 6114 West Capitol, Suite 200, Milwaukee, WI
Attendees	Keegan Dole, WisDOT Carrie Cooper, WisDOT Charlie Webb, CH2M Hill Carolyn Seboe, HNTB Dr. Eve M. Hall, AACC, President/CEO Randy Crump, AACC, Chairman of the Board Sheree Dallas Branch/ABRAZO

Meeting Summary

A meeting was conducted with the AACC to discuss indirect and cumulative effects for the Environmental Impact Statements being prepared for the I-94 East-West Corridor Study and I-43 North-South Corridor Study. After introductions, an overview of both studies was provided and the alternatives that are being evaluated were discussed.

The following is a summary of the comments that were made by Dr. Hall and Mr. Crump at the meeting:

- The 35th Street interchange is dangerous now especially from US 41. Dr. Hall grew up in this area.
- Discussed how the freeway development process compares today to when the freeways were originally constructed. The team discussed that today we have more laws that require public input and a process that requires the evaluation of alternatives and disclosure of impacts. Dr. Hall's childhood home in Merrill Park had previously been moved from a different location to accommodate the construction of I-94.
- Dr. Hall provided an overview of the AACC. They have been in operation since 1993 and they focus on building minority, particularly African American, businesses. They have 150 members that includes minority owned businesses, nonprofit partners and corporate partners. They primarily represent businesses in the Milwaukee area, but they are asked to get involved in other communities throughout the state including Kenosha, Racine and Green Bay. Some specific initiatives include developing a revolving loan program; creating an African American professional contractors business list that identifies quality businesses; organizing a women's business group; and promoting the next generation of minority businesses. The AACC has been through some transitions in recent years and they are working to rebuild their credibility in the community so they can help influence policies that affect their members.
- Most African American businesses are on the north side of Milwaukee.
- The North Milwaukee State Bank partners with WisDOT and Chambers of Commerce to offer micro loan funds. This program has been successful at helping local minority contractors participate in transportation construction employment. WisDOT guarantees the funds. The Chamber helps process the smaller deals that banks typically won't consider due to processing costs/small loan amount.
- The I-94 and I-43 corridors are important for African American businesses. These are the access points they use to get to downtown, Brookfield, Madison. They experience problems with safety and traffic.
- Concerned about access and traffic during construction. Need to keep businesses informed about construction activities so they can plan accordingly.
- Many of the local streets already have access and congestion issues. This will get worse when the freeways are under construction. An example is the intersection of Port Washington Road and Silver Spring Road. It is hard to access some of the businesses and this discourages people from using the businesses.
- In terms of capacity expansion, the AACC feels a more balanced transportation approach is needed that incorporates transit. They are concerned about highway capacity expansion stretching development out

further. Seems like people are wasting so much gas and time driving back and forth along these corridors in single occupancy vehicles. Need to incorporate transit. Other communities in the country are embracing transit.

- It seems that transportation is built to get people out of the city. Miller Park is an example. It provides and easy in/out of the ball park, but all the benefit is contained within Miller Park, the benefit is not shared with the regional economy.
- The Milwaukee area is separated between the haves and have nots and this is affecting major corporations in the region. The president/CEO of SC Johnson stated this concern in a speech.
- The AACC is not against freeways, but a more balanced approach that includes transit would be better for the regional economy.
- The frontage roads along I-94 may be a good solution to help keep all access points open and help make the access points more easily identifiable. Some of the existing access points are confusing. The 27th Street-25th Street interchange is an example.
- The 27th and Wisconsin area is prime for redevelopment. Maintaining freeway access will be important.
- Traffic operations along the 27th Street corridor north of I-94 are poor. If access is consolidated at 27th Street, how will this affect traffic on the local road? The team said local road impacts still need to be studied.
- It is important for the project team to talk with the local neighborhoods to find out what is important. An example is how important the ACE Hardware store in Glendale is to the area.
- The no action alternative does not seem likely because something needs to be done to address the freeway's deficiencies. The replace in kind alternative would be ok if it addressed some of the major safety and access issues.
- A better approach that is better for our region will include a more balance transportation system that incorporates commuter rail and transit. We need to be able to function within our community (access points), but have touch points outside the city to make sure we connect people with jobs.
- People who do not have cars are not able to access suburban job markets because there is a lack of transit. This same worker in other communities (Washington DC for example) has access to transit and can access jobs.
- The Chamber will be invited to the focus group meeting. They will send a staff member or recommend someone appropriate.

Notes prepared by Carolyn Seboe, HNTB

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	Milwaukee County
Date, Time	February 28, 1:30 p.m.
Location	
Attendees	Dobra Payant, WisDOT Carrie Cooper, WisDOT Charlie Webb, CH2M Hill Carolyn Seboe, HNTB Clark Wantoch, Milwaukee County, Director of Highway Operations Aziz Aleiow, Milwaukee County

Meeting Summary

A meeting was conducted with Milwaukee County to discuss indirect and cumulative effects for the Environmental Impact Statements being prepared for the I-94 East-West Corridor Study and I-43 North-South Corridor Study. After introductions, an overview of both studies was provided and the alternatives that are being evaluated were discussed.

The following is a summary of the comments that were made at the meeting:

- Clark oversees the county's highway projects and maintenance.
- Clark spoke with Brian Dranzik before the meeting to find out if he has any concerns about transit impacts. The county does not anticipate much impact to transit other than making sure bus access at park and ride lots is replaced if impacted by the project. Clark relayed that Brian also said the county would like to coordinate with WisDOT to include a bus only ramp at the Brown Deer Road interchange along I-43 to connect with the park and ride lot.
- The county contracts with the state for snow removal services for the freeways. Clark's main concern about the project is that the designs account for future maintenance and the safety of maintenance workers including lane width and areas to be plowed.
- The Milwaukee County parks department owns the county parkways and is responsible for their maintenance. Clark said we should check with the parks department as the Mitchell Park Blvd may be under their jurisdiction and the county may have some plans for the boulevard.

Notes prepared by Carolyn Seboe, HNTB

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	City of Wauwatosa
Date, Time	March 4, 2013; 1:30 p.m.
Location	Wauwatosa City Hall, 7725 W. North Ave., Wauwatosa, WI 53213
Attendees	Dobra Payant, WisDOT Jake Livermore, WisDOT Carolyn Seboe, HNTB Charlie Webb, CH2M Hill Paulette Enders, Director, City Development Tammy Szudy, Planning & Zoning Manager

Meeting Summary

A meeting was conducted with staff from the city of Wauwatosa Development Department to discuss indirect and cumulative effects for the Environmental Impact Statement being prepared for the I-94 East-West Corridor Study. Charlie Webb provided an overview of the project. Then, Carolyn Seboe asked a series of questions related to indirect and cumulative effects.

The following is a summary of the comments that were at the meeting:

- Will Miller Park lose parking? Charlie explained that parking impacts vary based on the alternative, but overall there is likely to be a net loss of parking if a full system interchange is built.
- Many Wauwatosa residents especially on the east side of the city use US 41 and value its convenience. The interchange design (system versus service) at the Stadium Interchange will not affect the community as long as the local access connections at Wells/Wisconsin and State Street are maintained.
- The west side of the community will not be affected as long as the 68th/70th Street access is maintained.
- Keep access as simple as possible. Visitors may have trouble with frontage road and CD road options.
- The braided ramp alternative is preferable.
- A new Alterra café is being constructed at 68th and Wells.
- The city does not have any redevelopment plans along Blue Mound Road.
- The city comprehensive plan outlines a master plan for the State Street corridor and the Tosa Village. They expect continued redevelopment along this corridor with increasing densities and intensity of uses. Some specific projects/redevelopment parcles (existing and future) were pointed out on the map and include:
    - The remnant fire station parcel – redeveloped as four story apartment and retail building in Tosa Village at 1463 Underwood Ave.
    - Continued rehabilitation and investment of properties along State Street between 72nd and 74th Streets
    - The Enclave located south of Martin Drive between 60th and 62nd streets – completed 150 apartment units. Currently constructing the Enclave Annex that will expand the complex with a second 40 unit apartment building.
    - Stone Pointe – over 200 multi-family units planned – west of 62nd Street, north of Grede foundry.
    - Future multifamily anticipated north and south of State Street, west of 62nd Street as land becomes available. Developer interest on land to the south.
    - The Reserve – existing 230 unit apartment complex north of State Street and west of 60th Street.
- State Street is a truck route.

- Make sure the reconstruction of 68th/70th interchange does not push traffic north on 70th. Maintain connection to 68th Street to avoid impacting neighborhoods.
- The biggest constraints to development are limited available land, brownfields and flood plain issues. All redevelopment projects have a brownfield clean up component.
- The market demand is strong in Wauwatosa when sites are available. Developers keep finding new sites.
- The local policies are generally favorable to development, but they are careful to incorporate neighborhood concerns with development impacts. The city will use tax increment financing to encourage redevelopment. Redevelopment occurs only in non-residential areas.
- In terms of capacity expansion, the Wauwatosa staff said it would take the pressure off Blue Mound Road. When the highway is congested people will use Blue Mound Road. Commuter traffic typically not stopping at local businesses. People would use the freeway more if it had more capacity.
- The city of Wauwatosa staff is not concerned about capacity expansion sending businesses out farther west. Wauwatosa is desirable for development when sites are available. Capacity expansion would help maintain an important regional east/west connection.
- Adjust study area boundary to include all of the downtown area.
- If WisDOT chose the no action alternative, the city of Wauwatosa would not be affected much. However, the increasing congestion on the freeway would put more pressure on Blue Mound and Wisconsin Avenue.
- Some businesses are located along Blue Mound corridor. Most do not rely on commuter traffic except for some of the gas stations and fast food restaurants.
- Their biggest concern with the project will be disruption during construction.
- They said the community sensitive solutions process for the Zoo Interchange project helped the local stakeholders feel more comfortable about the project and provided an opportunity for them to learn about the project.
- They recommend inviting a member from the Village Business Improvement District and the Chamber of Commerce to attend the focus group meeting.

Notes prepared by Carolyn Seboe, HNTB

Adjust study area boundary to include all of Tosa Village
Ardor apts/retail at former fire station parcel
Ongoing rehabs and reinvestment
Enclave - 150 apartments completed; The Annex – 40 unit addition, opening summer 2013
US 41 is convenient route for Wauwatosa residents
200+ multi-family units planned (Stone Pointe)
The Reserve – existing apartments
Continued redevelopment of State Street corridor planned. Higher density/intensity, commercial and multi-family uses
Future multi-family expected
Small commercial node - New Altera cafe
US 41/I-94 interchange design not as important as maintaining access at Wells/Wisconsin and State Street
Avoid increased traffic on 70th / maintain 68th St. connection
West Project Limit
More freeway capacity would help businesses on Blue Mound Rd (less traffic on Blue Mound)
Important corridor to State Street and west side of city. Prefer braided ramp options for most direct access.
Tosa Village
Hart Park
State St
Wick Field Neighborhood
Highland Park
Jacobus Park
Wisconsin Ave
Wells St
Story Hill Neighborhood
Bluemound Rd
Mount Calvary Cemetery
Mitchell Blvd
Bluemound Heights Neighborhood
Spring Hill Cemetery
Wood National Cemetery
Miller Park
Dickinson St
Veterns Affairs
Joy Global
Zablocki VA Medical Center
State Fair Park
CITY OF MILWAUKEE
Honey Creek Pkwy
72nd St
68th St
64th St
60th St
92nd St
84th St
70th St
41
94

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	Hispanic Chamber of Commerce of Wisconsin
Date, Time	March 14, 2013 3:00 p.m.
Location	Café El Sol at United Community Center, 1028 S 9th St Milwaukee
Attendees	Dobra Payant, WisDOT (I-94 E-W Study) Charlie Webb, CH2M Hill Carrie Cooper, WisDOT (I-43 N-S Study) Carolyn Seboe, HNTB Maria Monreal-Cameron, President / CEO Hispanic Chamber of Commerce Ivan Gamboa - Tri City National Bank and Cesar E. Chavez Business Improvement District Ricardo Diaz- Executive Director, United Community Center Nancy Hernandez, Abrazo Marketing

Meeting Summary

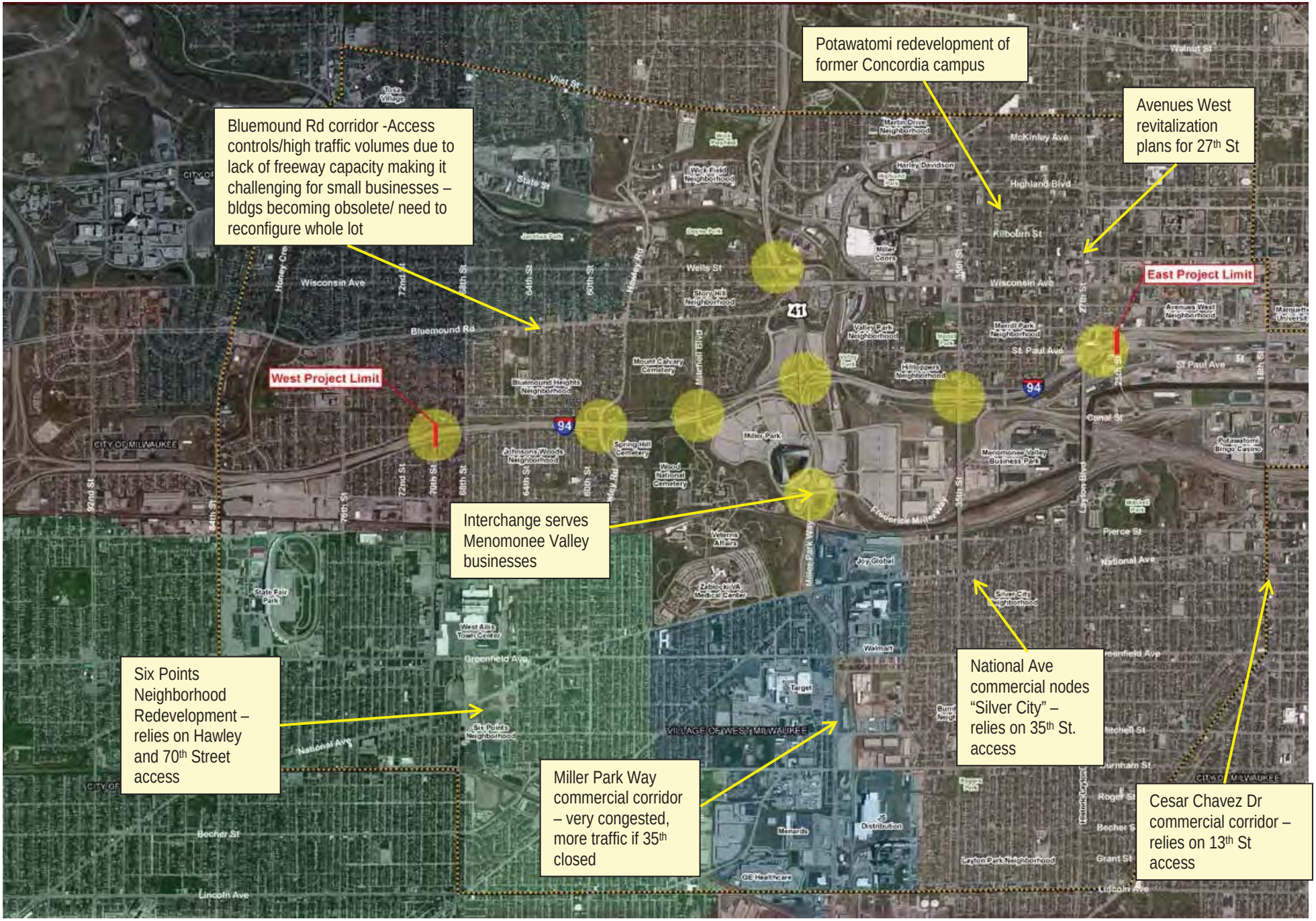
A meeting was conducted with Maria Monreal-Cameron, Ivan Gamboa and Ricardo Diaz to discuss indirect and cumulative effects for the Environmental Impact Statements being prepared for the I-94 East-West Corridor Study and the I-43 North-South Corridor Study. Charlie Webb provided an overview of the I-94 project and Carrie Cooper provided an overview of the I-43 project. The attendees represent organizations on the south side of Milwaukee and were therefore mostly interested in discussing effects related to the I-94 project.

The following is a summary of the comments that were made at the meeting:

- How well are the public meetings being attended? (Nearly 200 individuals have attended past meetings).
- It is becoming harder to do business on the large local arterials because access is being controlled so tightly do to the traffic volumes. This is less desirable to do business. The lack of highway capacity hurts small businesses on Highway 100 and Bluemound Road. Parking is being eliminated on-street and the value of buildings is decreasing. Buildings are becoming obsolete. You have to tear down existing building and reconfigure whole lot to fit to adjust to the access restrictions.
- If 35th Street is closed that will make the congestion on 43rd/Miller Park Way worse.
- How much is the 35th Street interchange used. (About 600 cars/day. It is similar to the other interchanges in the corridor.)
- The expansion of development has already happened. Capacity expansion of the freeway is needed to let people get in the city easier. Milwaukee has just as many redevelopment opportunities as the outlying areas. The suburbs are mostly built out. The primary redevelopment opportunities for Hispanic businesses are in Milwaukee near the lakefront and in the Menomonee Valley.
- It is important to get products in and out efficiently especially for the Menomonee Valley.
- The Canal Street interchange serves the Menomonee Valley. (no change anticipated for this interchange.)
- How would the Cesar Chavez Business Improvement District obtain better signage on the freeway near 13th Street? (Carrie Cooper and Dobra Payant will provide Ivan with a contact at WisDOT)
- If the interchanges are modified, it is ok as long as signage is provided.
- National Avenue is impacted by traffic volumes.
- Good access is needed for the livelihood of businesses.
- Main commercial corridors served by the I-94 corridor include:
    - Bluemound Road – Hawley to US 45: would be impacted by a Hawley Road interchange closure
    - National Avenue – Businesses at 35th Street and other commercial nodes
    - Avenues West – plans to revitalize 27th Street corridor (north of I-94)

  - Redevelopment of the former Concordia College campus located southeast of State Street and north of 33rd Street in Milwaukee's Concordia neighborhood. (Background: The Forest County Potawatomi Community is moving forward with $25 million redevelopment plan for the former campus. Of the seven buildings, one will be demolished and six will be renovated. Uses included tribal government offices, the Spotted Eagle High School, space for business incubators, office spaces. A new data center was constructed in 2012.)
  - Cesar Chavez Drive/16th Street - uses 13th Street access
  - Miller Park Way – very congested
  - Hawley Road – Wheaton Franciscan Hospital investing in facility
  - West Allis – Six Points redevelopment
- Options that end up creating new developable parcels could help mitigate impacts to loss of access.
- Discussion about existing congestion issues in downtown and reasons for the congestion.
- Contact Maria Monreal-Cameron at the Chamber to discuss focus group participants. Ivan Gamboa may be an option.

Notes prepared by Carolyn Seboe, HNTB


Potawatomi redevelopment of former Concordia campus
Avenues West revitalization plans for 27th St
Bluemound Rd corridor -Access controls/high traffic volumes due to lack of freeway capacity making it challenging for small businesses – bldgs becoming obsolete/ need to reconfigure whole lot
East Project Limit
West Project Limit
Interchange serves Menomonee Valley businesses
Six Points Neighborhood Redevelopment – relies on Hawley and 70th Street access
National Ave commercial nodes "Silver City" – relies on 35th St. access
Miller Park Way commercial corridor – very congested, more traffic if 35th closed
Cesar Chavez Dr commercial corridor – relies on 13th St access

Appendix B: Focus Group Meeting Summary

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Focus Group Meeting Summary

MEETING OVERVIEW

The Wisconsin Department of Transportation conducted a focus group meeting on June 6, 2013 to obtain feedback on the project's potential indirect and cumulative effects (ICE). The meeting was held from 9 a.m. to 12 p.m. in the conference room at the Wisconsin State Traffic Operations Center, located at 433 W. St. Paul Avenue. The ICE analysis is a component of the Environmental Impact Statement (EIS) for the I-94 East-West corridor study.

A broad range of stakeholders attended the meeting including local, regional and state government/quasi-government representatives, local businesses, real estate professionals and economic development organizations. In total, 23 people attended the meeting. The meeting was staffed by 11 project team members that included representatives from WisDOT, FHWA and the consulting firms of HNTB and CH2M Hill.

The meeting was divided into two parts. The first half included a presentation that provided background information about the I-94 East-West corridor study and a review of EIS terminology. Next, an overview of the process being used to analyze indirect and cumulative effects was presented. Then, the primary and secondary ICE study areas were introduced and the population, employment and land use trends affecting the ICE study areas were presented. The first half of the meeting concluded with a large group discussion to confirm the study area trends and to learn about other trends that might be relevant for the analysis.

For the second part of the meeting, the project team presented an overview of the proposed spot improvement alternative and the modernization options. Then, an overview of the potential indirect and cumulative effects was presented.

After the presentation, the participants were broken up into five different small groups to discuss the study areas and the potential indirect and cumulative effects. Participants had about 45 minutes to discuss a list of 12 questions. Due to time limitations, the report back session did not take place. Instead, the project team sent the meeting summary to participants.

LARGE GROUP DISCUSSION COMMENTS

The following is a summary of comments received during the large group discussion about the population, employment and land use trends and natural resources within the primary and secondary study areas.

- Randy Crump, African American Chamber of Commerce – Randy noted that he lives in one of the neighborhoods that are experiencing a decline in population (areas in red on population map). He said the I-94 corridor is important for access to jobs for residents in this area. There is also a need for more transit services to improve access to jobs.
- Perfecto Rivera, WHEDA – The 43rd Street/Miller Park Way corridor is extremely congested even on non-Brewer game days. Both commercial and residential development continues to take place along that corridor. There is a great amount of congestion from National Avenue all the way south to Lincoln Avenue. It currently takes a long time to get from the south to I-94. Some days it may take 20 minutes in the afternoon. This is a very important corridor for the south side in terms of access to retail goods and services, but the congestion in this area is frustrating to local residents. He feels the congestion along 43rd Street/Miller Park way is mostly due to the successful commercial development along the corridor.
- Dan Adams, Layton Boulevard West Neighbors – The Layton Boulevard West neighborhood has increased by over 4,000 residents in the past 10 years. People are drawn to living in a dense, walkable urban neighborhood with the convenience of the retail provided along the nearby Miller Park Way corridor.
- John Stalewski, Village of West Milwaukee – Eastbound National Avenue through the village of West Milwaukee experiences a lot of commuter traffic from the suburbs. There is also a lot of Brewer game-

related traffic. He feels that if any of the I-94 interchanges were eliminated there would be even more traffic and pressure on the West Milwaukee arterial streets.

- Maria Pandazi, City of Milwaukee – Finding ways to get residents to jobs is important. She noted that the increase in the number of jobs in Milwaukee County is occurring in specific locations. The job growth should be acknowledged in the analysis. It is important to find ways for workers to be able to access these locations through various modes of transportation. Maria noted there is spill over commercial and residential development moving west from the Harley Davidson Museum and the Third and Fifth ward neighborhood. Some of these locations are just outside the proposed primary study area boundary.
- Stephanie Findley, Midwest Construction – She noted that US 41 is a key route for people on the north side of Milwaukee for access to I-94. US 41/Lisbon Avenue is in poor condition and needs to be rehabilitated.
- Debra Jensen, MMSD – A vital river system improves quality of life for the region. Both water quality and quantity impacts from the highway need to be studied for the Menomonee River. The project needs to study the volume of runoff not just the peak flow. The peak flow is not the biggest impact to waterways, it is the volume. A number of years ago, a young girl lost her life when she fell into the fast moving stream during a rain event. Water quality is improving as indicated by the number of people fishing in the region's rivers, but road run-off is still a problem.
- Paulette Enders, City of Wauwatosa– She asked if the northern boundary for the proposed primary study area generally follows Vliet Street. She felt we should consider moving the boundary north to include the East Tosa Redevelopment area at North Avenue since this area relies on access to I-94 via US 41.
- Kyle Harmon, Summit City Realty – He worked on the redevelopment of the former Allis-Chalmers area in West Allis. There are redevelopment opportunities in West Allis, West Milwaukee, and the Menomonee Valley. We need to be able to get workers to these areas. Ten to 15 years ago the Allis-Chalmers site was vacant and now it is a vibrant work place and is only going to grow. The economic impact of access changes needs to be taken into consideration. The population figures do not tell the employment story, but the traffic generated by the jobs is a good indication of the investment that has happened. The area has seen 10s of thousands of jobs in the past decade. The data collected for the study area should reflect the job increases.
- Ken Yunker, SEWRPC – Maintaining access to I-94 is essential to support job growth and economic development in the corridor and surrounding areas. I-94 serves areas beyond the immediate corridor, including downtown Milwaukee. Ken said the new Northwestern Mutual development and Italian Community Center developments in downtown are an examples of the types of investments that are occurring. The I-94 corridor is important to existing and future development.
- Corey Zetts, Menomonee Valley Partners – In addition to the employment increases, entertainment and recreation opportunities in the corridor are expanding. You have existing facilities such as Miller Park, Harley Davidson Museum and Potawatomi Bingo Casino. There is also new investment including the Hank Aaron State Trail, improvement plans at Mitchell Park and a new park in the Menomonee Valley (Three Bridges Park). There are over 10 million visitors in this area each year and this trend is serving as a catalyst for neighborhood revitalization.
- Maria Pandazi, City of Milwaukee – Alternative transportation options are growing in other parts of the country and it is feasible that the Milwaukee area may see more transit investment in the future. Plans for the I-94 corridor should reflect the potential for future alternative transportation options.
- Al Pinckney, MATC – He takes alternative streets to avoid travel on I-94 and notes that even the side streets have heavy traffic. There is more traffic on these streets as motorists attempt to avoid congestion on I-94. The extra traffic on these arterial streets impacts businesses and education facilities.
- Larry Roberts, Potawatomi Bingo Casino – He asked if there are any plans to improve US 41 and Lisbon Avenue and if the work on I-94 would improve traffic operations on arterial roads. The arterials are very congested. Charlie Webb responded that with more capacity on I-94, more people are likely to use I-94 and this is likely to improve traffic on the local arterials. There are no specific plans to improve arterials as part of this project.
- Perfecto Rivera, WHEDA – The high occupancy vehicle lanes on the highway entrance ramps cause big delays and backups for single occupant vehicles. He mentioned the westbound Hawley Road entrance ramp as an example.

- Dan Adams, Layton Boulevard West Neighbors – He suggested an alternate view of congestion. He said it seems that congestion in the I-94 corridor is not enough to dissuade local trips since 60% of the I-94 traffic in the corridor is for local trips.

SMALL GROUP DISCUSSION COMMENTS

Small Group Facilitated by Carolyn Seboe and Ben Goldsworthy

Small Group Participants

Paulette Enders, City of Wauwatosa
Dan Adams, Layton Boulevard West Neighbors
Larry Roberts, Potawatomi Bingo Casino
Diane Eineichner, Downtown West Allis Business Improvement District
Debra Jensen, Milwaukee Metropolitan Sewerage District

Summary of Comments

The following is a summary of the comments that were made at the meeting. In addition, Debra Jensen submitted written comments after the meeting. Those comments are also summarized below.

1. **Do you recommend any changes to the primary or secondary study area boundaries? If so, what changes should be made and why?**

   The group felt a few adjustments were needed to the primary study area, but no adjustments were needed to the secondary study area.

   Paulette Enders suggested the primary study area should be extended north to include the area along North Avenue between 60th and 76th streets. This area may be affected by downgrading US41 to an arterial because US 41 provides a direct connection to I-94 for this neighborhood.

   Debra Jensen felt the study area needs to incorporate the downstream and upstream impacts of the highway on the river system. She said increased water volumes degrade stream banks and affect safety. She felt the exact limits of the boundary need to be based on modeling and will depend on the increased volume of stormwater runoff that will be produced by the project. Also, she felt WisDOT should consider the increase from this project as well as from the Zoo Interchange project. At a minimum, Debra felt the study area for the I-94 E-W project should include the localized impacts created immediately upstream of the project area as well as the downstream impacts along the Menomonee River between N. 70th Street and N. 25th Street.

2. **How would additional travel lanes affect land use/development patterns? Would it facilitate development in the primary study area? Does this project alone or in combination with other freeway projects have the potential to induce development in the secondary study area? Please indicate specific business, residential or other areas that may be affected.**

   Paulette Enders and Diane Eineichner felt capacity on I-94 should be increased to alleviate traffic on the local arterial streets. They felt less congestion on the arterials would help the businesses along those corridors.

   Dan Adams felt the freeway needed to be modernized, but had several concerns about capacity expansion relating to construction costs, property acquisitions and air quality. He wanted to know the difference in impacts between reconstructing the highway with and without additional travel lanes. Dan also felt that adding capacity would encourage people to live further away from the city because it would decrease commute times.

Larry Roberts did not think capacity expansion would encourage people to move further from the city. He felt that people chose to live in neighborhoods based on their person preferences and other factors such as schools. He doesn't want to see too much traffic on local business corridors.

Debra Jensen said she is concerned that additional travel lanes would increase impervious space and affect the area river system from increased water volumes.

Debra Jensen suggested the land on the east leg of the highway that would become available from the proposed realignment of the highway in this area could be used for stormwater management. Other participants discussed if the land could be developed. They noted that the grades in this area may make it challenging to develop.

3. **How do the proposed interchange modifications affect local land use/development patterns? Which alternatives are most consistent and which alternatives are least consistent with local plans? Please indicate specific business, residential or other areas that may be affected?**

Paulette Enders and Diane Eineichner stated that the 70th Street only interchange option that does not provide direct access to 68th Street would miss Wauwatosa and decrease access to the community's business corridors. It would also have residential impacts. They felt the reconstructed interchange should continue to serve both 70th and 68th streets to serve existing land use patterns that have developed around these split corridors. Also, they mentioned that 68th Street is an important north/south connection between West Allis and Wauwatosa, allowing easy access for residents to get to the businesses in both communities.

Paulette and Diane said interchange configurations that provide direct access are most desirable. However, they did not think the collector-distributor options would be a detriment to their communities as long as signage on the highway was provided. The interchange option at 68th/70th streets that does not have collector-distributor roads would be ideal, but not if the Hawley Road interchange is closed.

Paulette added that US 41 and Hawley Road interchanges are important access points for the Vliet Street business corridor and changes to those access points should consider Vliet Street.

Larry Roberts discussed the difficult access situation along the east leg of the highway. He feels it is discouraging investment. He said the 13th Street interchange serves the Menomonee Valley, Marquette University and downtown. It is congested and doesn't have good traffic flow. There are too many traffic signals and the railroad corridor adds extra delays. Guests to the casino complain about traffic jams and delays getting to the casino. He said the interchange option that consolidates access at 27th Street is least desirable because it eliminates the 25th Street connection. Access to 25th Street should be maintained because it provides the most direct access to Canal Street. Larry said a better solution would be to provide an access point to Canal Street via 35th Street. This would provide the most direct access to the Menomonee Valley and the Casino and provide an alternative to the congested 13th Street interchange.

4. **How would the freeway project affect local arterial routes? Would it affect traffic patterns and/or land use/development patterns? What arterial corridors may be affected?**

Paulette Enders and Diane Eineichner felt that additional travel lanes on the highway would reduce traffic on the arterials and help improve the vitality of the business corridors in Wauwatosa and West Allis including National Avenue, Greenfield Avenue, Bluemound Road and Wisconsin Avenue. They felt the types of businesses along the corridors are not likely to change, but less traffic on the arterials would help improve pedestrian mobility and decrease the vacancy rate of stores. Overall, less congestion would make the commercial districts more accessible.

Dan Adams was concerned that congestion on I-94 pulls traffic to National Avenue. He said National Avenue has been changed to accommodate traffic in some areas. Pedestrians avoid areas of National Avenue with fast moving traffic and more business vacancies are present. Streetscape features have been added to portions of National Avenue near 35th Street. This has calmed traffic and encouraged pedestrian activity, which has helped the vitality of the business district.

5. **How would land use/development patterns under the modernization alternatives compare to the no-build, replace-in-kind and spot improvement alternatives?**

   Paulette Enders and Diane Eineichner were the only participants left in the group for this question. They did not see a significant difference between land use patterns under the difference scenarios, but reiterated that businesses along the local arterials would benefit from capacity expansion on the highway.

6. **What other factors besides the freeway project are influencing land use/development patterns? (i.e. market demand, availability of land, local land use policies, availability of sewer/water.)**

   No comments were made.

7. **How might the freeway project's design elements affect neighborhood quality of life over time? What neighborhoods may be affected and why?**

   Dan was concerned about how the project would affect the quality of life in adjacent neighborhoods. He was concerned about air quality, traffic impacts and property acquisitions.

8. **How might the freeway project's design elements affect the vitality of business areas over time? What areas may be affected and why?**

   No comments were made.

9. **How might minority and low income populations be affected? Please indicate neighborhoods or business areas that may be affected and discuss the types of changes that may occur positively or negatively. Also, discuss how the availability of transit services affects low-income and minority populations.**

   No comments were made.

10. **Please discuss your concerns regarding indirect or cumulative effects to natural, cultural or historic resources?**

    Debra Jensen said the MMSD has water quality and water quantity concerns. She said water quality is improving in our region as witnessed by the increased fishing, boating and other water related activities. The I-94 project should ensure the runoff from the I-94 project does not have an adverse effect on the region's water quality. She said typical highway pollutants include heavy metals, chlorides, sulphates, particulates and others. MMSD has been removing stream barriers to allow fish to migrate further upstream. This will ultimately allow fish to move 37 miles upstream and open up fishing opportunities throughout the region. Debra said any adverse water quality impacts would have a detrimental effect on the fish and other life in the stream.

    From a water quantity standpoint, Debra said the MMSD would like WisDOT to analyze increases in stormwater volume caused by its projects, not just peak flows. Debra said increases in volumes have a number of impacts as follows:

    - Safety – increases in runoff volumes increase the velocity of stream flow resulting in unsafe conditions. Several years ago a young girl fell into a fast moving stream during a rain event and lost her life. This project in combination with the Zoo Interchange project will affect safety.
    - Erosion – increases in volume would increase stream bank erosion later in time. The Western Milwaukee Stream Bank repair project along the Menomonee River will repair about 220 feet of stream bank. Debra is concerned the I-94 project could create new impacts to this expensive restoration work.
    - Utilities – Erosion of stream banks can adversely impact utilities that are often located along waterways. An example is along the Menomonee River at about 25th Street. The river bank has eroded and is impacting the MMSD interceptor sewer. MMSD is planning to repair the stream bank.

If the repair did not occur, sewage could flow directly into the waterway. Stream bank erosion may also affect non MMSD utilizes as many kinds of utilities are along waterways.

- Flooding - Increases in runoff from the I-94 project and in combination with the Zoo Interchange project may result in flooded structures that would not have flooded prior to the freeway work. MMSD is implementing the Western Milwaukee Flood Management project downstream of the I-94 E-W project area; increases in runoff may increase the potential for flooding in this area and could impact the regulatory floodplain. Also, Falk is in the process of extending its floodwall to protect its facilities. This is an example of an industry that is affected by flooding. Ensuring that increased freeway runoff does not flood new structures is critical to business vitality and neighborhood growth and improvement.
- Impacts to fisheries: Many groups have been involved in removing fish passage barriers in the Menomonee River including environmental groups, U.S. Army Corps of Engineers, Wisconsin Department of Natural Resources, and MMSD. Increases in volume of runoff may impact the ability of fish to travel upstream; this could prevent fish from traveling from the lake and upstream through the Menomonee River.

11. What other projects or developments have occurred, are currently happening or are planned that could result in cumulative effects to communities, natural resources or cultural/historic resources when combined with the impacts of this freeway project?

No comments were made.

12. Please provide any other comments you may have.

No comments were made.

Small Group Facilitated by Charlie Webb and Brad Heimlich

Small Group Participants

Corey Zetts, Menomonee Valley Partners
Kyle Harmon, Summit City Realty
Michael Brockman, Southeast Wisconsin Professional Baseball Park District
John Stalewski, Village of West Milwaukee

Summary of Comments

The following is a summary of the comments that were made by participants of this group

1. Do you recommend any changes to the primary or secondary study area boundaries? If so, what changes should be made and why?

The participants felt the boundaries for the study areas were adequate.

2. How would additional travel lanes affect land use/development patterns? Would it facilitate development in the primary study area? Does this project alone or in combination with other freeway projects have the potential to induce development in the secondary study area? Please indicate specific business, residential or other areas that may be affected.

John Stalewski felt adding travel lanes to the freeway would enhance existing development patterns. He did not think it would accelerate the pace of development, but it would enhance existing and planned development in West Milwaukee.

Corey Zetts felt alleviating bottle necks on the highway is good for businesses as long as access stays the same or improves. Making access more difficult could stall development and make the remaining parcels

more challenging to develop. She has heard concerns from residential neighborhoods adjacent to I-94 that think freeway widening could make their neighborhood less desirable.

Charlie Webb asked participants if widening I-94 all the way through WIS 16 would affect the regional development patterns. John said he was not sure. Kyle Harmon said there would not be a big difference between widening and not widening the freeway. Kyle also said there are many downsides to the at-grade option through the cemetery section that would require narrow lanes. He felt the loss of Hawley Road interchange would negatively impact the area.

Mike Brockman related an anecdotal story about his own residential location decision. He wanted to move out of his southwest side neighborhood and after looking west he decided to move to Franklin partly because of congestion in the Zoo Interchange corridor.

3. **How do the proposed interchange modifications affect local land use/development patterns? Which alternatives are most consistent and which alternatives are least consistent with local plans? Please indicate specific business, residential or other areas that may be affected?**

   In general, the participants felt making access more difficult would have a detrimental effect on development.

4. **How would the freeway project affect local arterial routes? Would it affect traffic patterns and/or land use/development patterns? What arterial corridors may be affected?**

   John said if the arterials are congested to the point that people can't move around, it is detrimental to businesses. He noted that eastbound National Avenue backs up from Miller Parkway to the west end of the VA complex.

   Corey said she already hears from businesses in the Silver City district that there is too much traffic on National Ave and it hurts their businesses.

5. **How would land use/development patterns under the modernization alternatives compare to the no-build, replace-in-kind and spot improvement alternatives?**

   Kyle Harmon said less congestion on the freeway will make it easier to market real estate in the primary study area. For example, if the Brewers want to develop part of their parking lot, a modern freeway would enhance their real estate. He also felt light rail and any other modes of transportation would be good for development in the primary study area.

   Mike Brockman felt less congestion will be better for development. Less congestion would help people get to places they want to go easier. He felt safety improvements are good too.

   Corey Zetts said the current freeway configuration impedes redevelopment of the 27th Street and St. Paul Avenue area. The current configuration leaves pockets of undevelopable land and this attracts nuisance activities.

   Kyle said there is still land available for commercial and industrial development in the primary study area. He and John circled several areas on the map that could be redeveloped. Examples included the Drop Forge site, sites along Electric Avenue in West Milwaukee, areas to the west of Six Points along 70th Street in West Allis, east end of the Menomonee Valley (east of I-43), the St. Paul Avenue corridor and the parking lots at Miller Park. They felt opportunities for residential development were limited. Kyle said the Milwaukee Mile is the most desirable parcel in the state.

6. **What other factors besides the freeway project are influencing land use/development patterns? (i.e. market demand, availability of land, local land use policies, availability of sewer/water.)**

   The participants mentioned some factors that make development in the primary study area more challenging. They mentioned it can be difficult to bring parcels to market due to brownfield issues. Also,

some parcels lack adequate access to the local street network. An example is the parcel known as Reed Street yards Milwaukee.

The participants also mentioned some factors that are helping to facilitate development within the primary study area. John mentioned the commercial development along Miller Parkway was sparked by an influx of new residential development in West Milwaukee. Also, Corey mentioned there has been some spill over development from Walkers Point into the east end of the Valley.

7. **How might the freeway project's design elements affect neighborhood quality of life over time? What neighborhoods may be affected and why?**

   Corey said she is hearing concerns about freeway encroachment and noise impacts. She said people are also concerned that the new freeway will create a perceived barrier to crossing, like I-794 between downtown and the Third Ward.

   John said the least amount of land acquisition would be best.

8. **How might the freeway project's design elements affect the vitality of business areas over time? What areas may be affected and why?**

   Corey felt the proposed I-94 bridge that would go over St. Paul Avenue would create an unpleasant environment and would be a blighting influence. The proposed bridge would be similar to the I-794 bridge structure between downtown and the Third Ward. A bridge over St. Paul Avenue could be detrimental to redevelopment at the west end of St Paul Avenue, especially with the freeway alternative that realigns both directions of the mainline.

   Corey mentioned there are huge grade changes in this area and asked if redevelopment could occur in the area where the freeway would be removed. If the area is not developable, then the remaining vacant land would attract nuisance activities such as car break-ins and litter. The area around 27th Street is already susceptible to nuisance activities because the freeway and steep slopes create pockets for homeless camps.

   Kyle said elevated freeway structures around the Milwaukee area create divisions in the community. He said the continuity of the St. Paul Avenue corridor is very important.

9. **How might minority and low income populations be affected? Please indicate neighborhoods or business areas that may be affected and discuss the types of changes that may occur positively or negatively. Also, discuss how the availability of transit services affects low-income and minority populations.**

   John said transit and other modes of transportation seem to be mutually exclusive in southeastern Wisconsin. He said this makes it more challenging for people to get to jobs and said the freeway project won't address that.

   Mike said we need to keep existing access points to help people that have established themselves in the area.

   Corey said Silver City is starting to redevelop. The Merrill Park neighborhood still has a lot of vacancies and foreclosures. It is important to keep neighborhoods connected to the freeway by maintaining access at 27th Street and 35th Street and it is important for the neighborhood to the north and south of the freeway to be connected. Many employees live in the adjacent neighborhoods north and south of the Menomonee Valley.

10. **Please discuss your concerns regarding indirect or cumulative effects to natural, cultural or historic resources?**

    Corey said she is concerned about stormwater runoff from the highway.

11. **What other projects or developments have occurred, are currently happening or are planned that could result in cumulative effects to communities, natural resources or cultural/historic resources when combined with the impacts of this freeway project?**

    Redevelopment within the primary study area will increase traffic and demand for additional services. There are a lot of destinations such as Miller Park, State Fair Park and Potawatomi Bingo Casino that generate demand for ancillary services such as restaurants and hotels. Providing convenient access to those ancillary services is needed.

12. **Please provide any other comments you may have.**

    No additional comments were mentioned.

Small Group Facilitated by Ashley Booth and Monica Wauck

Small Group Participants

Bart Griepentrog: City of West Allis
Jim Plaisted, Wauwatosa Village Business Improvement District
Christopher Hiebert, Southeast Wisconsin Regional Planning Commission
Shannon Jefferson, Gibraltar Industries and African American Chamber of Commerce

Summary of Comments

The following is a summary of the comments that were made by the participants of this group.

1. **Do you recommend any changes to the primary or secondary study area boundaries? If so, what changes should be made and why?**

   Chris Hiebert recommended including the Third Ward in the primary study area because I-94 would service any development/redevelopment associated with the Lake Interchange reconstruction. Also, he recommended extending the primary study area to the Fond du Lac Avenue/I-43 interchange to include a larger area of downtown.

   Jim Plaisted recommended extending the northern boundary at Vliet Street to North Avenue, at least through Wauwatosa since many people travel from North Ave to I-94. Chris and Shannon Jefferson agreed with Jim.

   Bart Griepentrog recommended moving the southern boundary to the south in West Allis so the industrial corridor along Lincoln Avenue is not split up.

   Shannon noted that it is difficult to get to the rest of the region from the 30th Street Industrial Corridor. For example, to get to Saukville, one usually takes US 41 to I-94 to I-43.

   In regards to the secondary study area, Chris noted that the strongest travel pattern is between Waukesha and Milwaukee counties, and that “reverse” commuting is virtually equal to traditional commuting between the two counties.

   Bart added that even though the commute patterns are relatively equal, Milwaukee still has a larger share of the regional population than Waukesha County and would be more affected by the potential I-94 project. Therefore, the needs of the communities along the project corridor should have more weight than communities in the secondary study area.

2. **How would additional travel lanes affect land use/development patterns? Would it facilitate development in the primary study area? Does this project alone or in combination with other freeway projects have the potential to induce development in the secondary study area? Please indicate specific business, residential or other areas that may be affected.**

Chris, Jim and Shannon felt additional travel lanes and other interchange modifications would not dramatically affect land use trends. It was noted that redevelopment was already occurring in the primary study area and it would likely continue regardless of the freeway alternative chosen. They discussed how places in Wauwatosa have experienced tremendous development/redevelopment (Research Park, UWM Engineering school, Burleigh Triangle, etc.). They said this is due to the community's central location and its existing large population base. They also mentioned West Allis, Miller Parkway and the Menomonee Valley were experiencing strong redevelopment.

In general, Bart and Shannon did not see current congestion as a major problem. Bart felt that congestion was more of a perceived problem. Bart and Shannon noted that congestion is much worse in other cities (i.e. Chicago, New York, L.A. etc. or even Minneapolis). Bart felt that current congestion was not discouraging people from coming to the primary study area, downtown or other major attractions like State Fair, Miller Park, etc.

Jim agreed with Bart's point about congestion and said that a perceived lack of parking affects people's decisions to come to Wauwatosa or the primary study area more than perceived or real congestion on I-94. Jim wanted to know if large employers (Joy Global, etc.) viewed congestion as a problem and if congestion has impacted decisions for businesses to relocate or expand in the primary study area.

Shannon said access is very important to employers and employees, especially in the 30th Street Industrial Corridor and any improvements to access from I-94 to the 30th Street Industrial Corridor would be helpful.

Bart said reduced congestion and quicker travel times from capacity expansion would help development in Waukesha County because land is cheaper there. It was noted by Chris that there are other factors that weigh into decisions related to development such as: schools, crime, water and sewer availability, etc. Bart agreed that there are other factors that influence development decisions, but quicker travel times to and from Waukesha County would eliminate the core advantages of the primary study area which are population density and a large customer base.

Some participants including Bart, Shannon and Jim felt that urban-density was a more cost-effective development pattern and that freeway expansion subsidizes suburban sprawl, which is less cost effective. On the other hand, Chris felt that freeway expansion provides better access to downtown Milwaukee and the primary study area, improves safety, and improves travel reliability which is important for industry.

Jim indicated that he preferred to see congestion mitigated by multimodal solutions (i.e. trains, streetcar, bus improvements, etc). Bart and Shannon both agreed and supported more investment in multimodal options. Chris also felt more multimodal invest was important for the region.

3. **How do the proposed interchange modifications affect local land use/development patterns? Which alternatives are most consistent and which alternatives are least consistent with local plans? Please indicate specific business, residential or other areas that may be affected?**

Everyone in the group agreed that maintaining access at all the existing interchanges is vital. In particular, 70th street is vital to West Allis businesses and 68th Street is vital to Wauwatosa's village area. Jim indicated that the alternative that eliminates direct access to 68th Street would be bad for Wauwatosa and that he didn't support having to jog over from 70th Street back to 68th Street to go north.

4. **How would the freeway project affect local arterial routes? Would it affect traffic patterns and/or land use/development patterns? What arterial corridors may be affected?**

Jim and Shannon maintained that freeway expansion would pull traffic off local roads, in particular State Street and Bluemound Road. Jim said that this would be a benefit because excessive commuter traffic through neighborhoods and central business districts detracts from the quality of life.

Bart said traffic on Greenfield and National avenues during commuting hours was excessive. However, he felt people avoided these corridors less because of congestion and more because of the traffic signal spacing in downtown West Allis being too frequent.

5. **How would land use/development patterns under the modernization alternatives compare to the no-build, replace-in-kind and spot improvement alternatives?**

   Bart said that before the freeway, the city had the economic advantage. He feels the modernization alternative without capacity is the most neutral option and that there are more questions and potential impacts with added capacity. Modernization has a less negative impact and adding capacity has more impact.

6. **What other factors besides the freeway project are influencing land use/development patterns? (i.e. market demand, availability of land, local land use policies, availability of sewer/water.)**

   Chris mentioned several factors that are influencing development patterns. Examples include: schools, land prices, access to infrastructure, taxes and crime. Bart indicated those are key factors in development decisions, but the main advantages for development/redevelopment in the primary study area are lower transportation costs from shorter commutes, the ability to have one car versus two cars and access to other modes of transportation like bicycling and bus. He also mentioned having the ability to walk to restaurants and shopping is an advantage for the primary study area.

   Jim said that Milwaukee County has become more attractive since the recession because it has the population density and buying power to attract retail. Waukesha lacks the density to attract high-end retailers—that's why Pabst Farms is struggling and why Nordstrom is locating near Mayfair in Wauwatosa. He said density and access to market places is critical to businesses. This phenomenon seems to be here to stay. Shanon agreed and indicated she used to go to Brookfield Square in the 90's and now Mayfair/Tosa has everything one needs and seems to be the hot spot for shopping and restaurants.

   Chris said that telecommuting might make the home location more flexible in the future and impact the needs for infrastructure even more.

7. **How might the freeway project's design elements affect neighborhood quality of life over time? What neighborhoods may be affected and why?**

   Shannon said that freeway access is vital because the central city would be isolated without access and would not be able to attract neighborhood amenities. She indicated the 30th Street Industrial Corridor would benefit from more ancillary goods and services to support the businesses. She reiterated the success of Mayfair is due to its freeway access. She also said no access to jobs and capital perpetuates crime.

8. **How might the freeway project's design elements affect the vitality of business areas over time? What areas may be affected and why?**

   Participants reiterated that access to the freeway is vital to business corridors.

9. **How might minority and low income populations be affected? Please indicate neighborhoods or business areas that may be affected and discuss the types of changes that may occur positively or negatively. Also, discuss how the availability of transit services affects low-income and minority populations.**

   All participants reiterated that access to transportation is critical to all populations, whether minority or low income including transit and automobile access. Shannon indicated the primary reason she located her business to the former Eaton building in the 30th Street Industrial Corridor was its proximity to a bus route.

   Shannon indicated that residents in the primary study area or in Milwaukee in general spend a high portion of their disposable income. This has helped to facilitate redevelopment in places like Milwaukee's Near south side and Miller Parkway.

   Shannon said she hopes the growth of the Miller Parkway commercial corridor would spread north of I-94 along US 41 and into the 30th Street Industrial Corridor. She said people underestimate the buying power of the inner city.

All four participants noted that transit is critical and that it needs to be regional. Bart indicated that projects like I-94 E/W and the Zoo Interchange would likely face less opposition, if there was an expansion of transit projects. If projects like the Milwaukee Streetcar weren't directly trying to be stopped, then freeway improvement projects may not receive as much opposition.

The group indicated poverty on the north side of Milwaukee is directly related to a lack of access to jobs. It is difficult for people to go west (I-94) or north (I-43) to access suburban jobs due to the lack of automobile ownership, valid driver's licenses and regional transit.

10. **Please discuss your concerns regarding indirect or cumulative effects to natural, cultural or historic resources?**

    No comments were made.

11. **What other projects or developments have occurred, are currently happening or are planned that could result in cumulative effects to communities, natural resources or cultural/historic resources when combined with the impacts of this freeway project?**

    No comments were made.

12. **Please provide any other comments you may have.**

    No comments were made.

Small Group Facilitated by Connie White

Small Group Participants

Teig Whaley-Smith, Milwaukee County
Al Pinckney, Milwaukee Area Technical College
Perfecto Rivera, Wisconsin Housing & Economic Development Authority (WHEDA)
Charles Vang, Hmong Wisconsin Chamber of Commerce
Jason Tolleson, Harley-Davidson Motor Company

Summary of Comments

The following is a summary of the comments that were made by the participants of this group.

1. **Do you recommend any changes to the primary or secondary study area boundaries? If so, what changes should be made and why?**

   The primary study area should extend further south down Miller Parkway to Lincoln Avenue and further north to North Avenue to capture neighborhoods that are currently divided by the study area boundary line.

   Some participants discussed that the primary study area should include downtown Milwaukee, all the way to Lake Michigan since I-94 serves as the main access to downtown from locations to the west.

   One participant said the secondary study area should be based on whether the cumulative effect of all the other highway projects in the region will improve travel time enough to affect economic development.

   Another participant said the secondary study area that includes Milwaukee and Waukesha counties is appropriate.

2. **How would additional travel lanes affect land use/development patterns? Would it facilitate development in the primary study area? Does this project alone or in combination with other freeway projects have the potential to induce development in the secondary study area? Please indicate specific business, residential or other areas that may be affected.**

Currently there is a bottleneck going west from the Marquette Interchange to the Stadium Interchange and congestion is rising. This is affecting the Menomonee Valley area's attractiveness. Addressing this congestion may help make the area more attractive to development. The access to Potawatomi Bingo Casino from I-94 is also a safety and congestion problem that if fixed, would attract economic development.

There is incredible congestion around Miller Park that needs to be fixed to encourage economic development along Miller Parkway. If the freeway is made safer and easier to drive, Miller Parkway will be more attractive to customers. The Miller Parkway corridor all the way to Lincoln Avenue has areas that could still be redeveloped.

Some of the participants felt transit would not adequately address congestion.

MATC has just finished a 10-year facility plan indicating the need to expand a "community training facility" at the West Allis Campus. This is being done to meet the needs of local manufacturers for skilled workers. This is expected to increase student traffic on their campus.

3. **How do the proposed interchange modifications affect local land use/development patterns? Which alternatives are most consistent and which alternatives are least consistent with local plans? Please indicate specific business, residential or other areas that may be affected?**

   On the north side of I-94, 27th Street is the focus of revitalization efforts. This is where future development will occur because of the interchange access at 27th Street. Improving access to 27th Street would make the corridor more conducive to economic development. The commercial section between I-94 and Highland Avenue currently has about 75 percent vacancies (including vacant and undeveloped properties). Alleviating congestion is necessary because it will improve access to 27th Street. On the south side of I-94, there will be some development along the 35th Street corridor including the Silver City main street district.

   Access to bicycle routes is very low in the north side neighborhoods and it is difficult to get to the Hank Aaron State Trail on the south side of I-94. Improved north/south connections across the freeway would increase the quality of life for residents on the north side of I-94.

   For the east leg, the braided ramp option seems to be best for traffic. It also has the most relocation impacts. However, anything that is safer and better for traffic makes the area more attractive for economic development. All of the alternatives proposed for the east leg are equally effective in this respect.

   For the Stadium interchange, the interchange option that has the best traffic flow would have the most positive effect on economic development in the area, including south along Miller Parkway.

   The interchange at 35th Street is a commuter route and if changes affect the access/traffic flow at 27th Street, it will be a problem for redevelopment/development efforts along the 27th Street corridor.

   For the Stadium Interchange, the relative loss of real estate with the bigger footprint from the free flow option is not severe, based on what exists there now and for future development as well.

4. **How would the freeway project affect local arterial routes? Would it affect traffic patterns and/or land use/development patterns? What arterial corridors may be affected?**

   In general, the participants felt that additional capacity on the freeway was needed to alleviate congestion on the local arterials. This would help facilitate economic development in the primary study area.

5. **How would land use/development patterns under the modernization alternatives compare to the no-build, replace-in-kind and spot improvement alternatives?**

   No comments were made.

6. **What other factors besides the freeway project are influencing land use/development patterns? (i.e. market demand, availability of land, local land use policies, availability of sewer/water.)**

No comments were made.

7. **How might the freeway project's design elements affect neighborhood quality of life over time? What neighborhoods may be affected and why?**

   North side neighborhoods can be positively affected if the congestion decreases and the accessibility to 27th Street is improved. Also, bicycle connections across the freeway are important.

8. **How might the freeway project's design elements affect the vitality of business areas over time? What areas may be affected and why?**

   The steep vertical curve of the existing Stadium interchange (as you cross it from north to south) is very dangerous. Increasing the safety of this interchange would make the area more attractive for economic development.

9. **How might minority and low income populations be affected? Please indicate neighborhoods or business areas that may be affected and discuss the types of changes that may occur positively or negatively. Also, discuss how the availability of transit services affects low-income and minority populations.**

   No comments were made.

10. **Please discuss your concerns regarding indirect or cumulative effects to natural, cultural or historic resources?**

    No comments were made.

11. **What other projects or developments have occurred, are currently happening or are planned that could result in cumulative effects to communities, natural resources or cultural/historic resources when combined with the impacts of this freeway project?**

    Other highway projects, MATC campus plans, development along Miller Parkway, Menomonee Valley, and 27th Street could all be positively affected by decreasing congestion and increasing safety and accessibility.

12. **Please provide any other comments you may have.**

    No comments were made.

Small Group Facilitated by Caron Kloser

Small Group Participants

Maria Pandazi City of Milwaukee
Peter McMullen Wisconsin Department of Natural Resources
Randy Crump, Prism Technical/African American Chamber of Commerce
Stephanie Findley, Midwest Construction/African American Chamber of Commerce

Summary of Comments

The following is a summary of the comments that were made by the participants of this group at the meeting. In addition, Maria Pandazi submitted written comments after the meeting. Those comments are also summarized below.

1. **Do you recommend any changes to the primary or secondary study area boundaries? If so, what changes should be made and why?**

Maria Pandazi, Randy Crump and Peter McMullen felt that the downtown, Third Ward and Fifth Ward areas should be added to the primary study area. They felt the secondary study area boundary was appropriate.

Maria felt the Harley Davidson Museum and the Milwaukee Intermodal Station should be included in the primary study area. She also felt that the Third Ward and some of Walker's Point should be included because spill over development from these areas is moving west. Maria felt the secondary study is fine. She suggested it could be extended to the south to consider connections between Milwaukee and Chicago and consider if that connection is served by I-894.

2. **How would additional travel lanes affect land use/development patterns? Would it facilitate development in the primary study area? Does this project alone or in combination with other freeway projects have the potential to induce development in the secondary study area? Please indicate specific business, residential or other areas that may be affected.**

Maria felt that increasing capacity and reducing travel times would not facilitate development in the primary study area because most of the alternatives change access or have a larger freeway footprint that takes viable properties. She felt additional travel lanes could negatively impact development patterns because the emphasis is on moving cars through and not on access into the city. Maria also felt that the modernization alternatives that increase the number of lanes has the potential to induce development in the secondary study area for most land uses.

Randy noted that an extra lane is not expected to affect development patterns. Freeway access will help the Menomonee Valley and the growing entertainment venues downtown. The increased freeway profile in the vicinity of the Menomonee Valley could make it less attractive, but that could be mitigated with ongoing industrial development and there are commercial, recreational and entertainment uses already in the Valley.

Randy Crump said the north side of the freeway needs redevelopment. He asked if the freeway access could offer potential for redevelopment here.

On the west leg, Maria said the increased physical height of the infrastructure could create a sense of continuity disruption at the VA, cemeteries and Story Hill neighborhood.

Maria and Randy both though those State Street businesses depend on access from 68th Street; There is a commercial area on 76th Street just south of Bluemound Road that would not be affected.

3. **How do the proposed interchange modifications affect local land use/development patterns? Which alternatives are most consistent and which alternatives are least consistent with local plans? Please indicate specific business, residential or other areas that may be affected?**

Maria would like to see a "combo platter" of No Build/Spot Improvements and modernization.

Maria said access to neighborhoods is an important aspect of all city plans. She felt the freeway alternatives limit access to favor capacity expansion and that this is inconsistent with the city's planning documents. On the west leg she said alternatives that limit access and cul-de-sac local streets diminish access into neighborhoods. In the cemetery section, it is important to maintain access along Mitchell Boulevard because it connects two historic resources. Maintaining access at Hawley Road is also important. Maria felt that on the east leg, most alternatives seem to make access into the valley more difficult or round about and this is a major employment and economic engine for the area.

4. **How would the freeway project affect local arterial routes? Would it affect traffic patterns and/or land use/development patterns? What arterial corridors may be affected?**

Randy said, in the city, traffic on city roads are destination focused; freeway drivers don't want to use local streets; additional freeway capacity won't change travel patterns. Maria wondered if freeways really need to be designed for peak hour traffic (slower traffic in an urban area isn't bad).

Maria stated that some of the freeway alternatives may greatly affect local arterials by concentrating more cars on them. This could negatively impact property values on those streets.

Randy felt that US 41 and Lisbon Avenue improvements would have a bigger effect on land use, especially in combination with freeway improvements. Improving US 41/Lisbon Avenue (in a coordinated fashion with freeway improvements) could be a game changer (in a positive way) for the surrounding neighborhoods. Making the US 41/Lisbon Avenue corridor a "super street" (a boulevard type setting that could accommodate multiple travel modes) could re-establish neighborhood connections and create a tremendous opportunity for redevelopment.

5. **How would land use/development patterns under the modernization alternatives compare to the no-build, replace-in-kind and spot improvement alternatives?**

   Maria said it would depend on the type of modernization (CD roads vs. frontage roads, for example). CD roads are more freeway oriented, which change the landscape. It's okay to slow down traffic through the urban corridor. Randy said capacity expansion is okay as long as it works in concert with other street improvements (e.g. US 41/Lisbon Avenue).

   Maria felt that spot improvements seem to have the most balanced impacts and that more spot improvement options should be considered. She felt spot improvements would improve safety and maintain access that is important for neighborhoods and businesses.

6. **What other factors besides the freeway project are influencing land use/development patterns? (i.e. market demand, availability of land, local land use policies, availability of sewer/water.)**

   Maria said access to workers, market forces and quality of life choices are influencing development patterns. The group also discussed that easier access could result in increased pressure for sewer/water service for currently undeveloped areas.

7. **How might the freeway project's design elements affect neighborhood quality of life over time? What neighborhoods may be affected and why?**

   Maria felt freeway encroachment and the "barrier" effect would impact neighborhood quality of life, particularly on the west leg. She felt enlarged infrastructure would create visual impacts, noise impacts and increased traffic on local arterials. This would have a negative impact on neighborhoods and negatively affect the "livability" of the adjacent neighborhoods. She also felt the additional travel lanes would result in a loss of the "green buffer" to the residential areas on the west leg and decrease the value of the neighborhoods. In the cemetery section, she mentioned the increased height of the double deck freeway would have impacts on the surrounding neighborhoods.

8. **How might the freeway project's design elements affect the vitality of business areas over time? What areas may be affected and why?**

   Maria said if access is limited or if it is made more difficult to find businesses, it would have a very negative impact. Also, she said the visual impact of the large elevated ramps/infrastructure could have a negative effect on property values and businesses.

9. **How might minority and low income populations be affected? Please indicate neighborhoods or business areas that may be affected and discuss the types of changes that may occur positively or negatively. Also, discuss how the availability of transit services affects low-income and minority populations.**

   Maria said for minority and low income populations that have a car and driver's license, access to the interstate is via local roads and therefore maintaining access points is important to those who drive. She added public transit and improved transit availability is also important to these populations and the elderly populations.

   Maria said most low income and minority populations in the state live in this area and within the city of Milwaukee neighborhoods that surround this project. Doing a project that negatively impacts the broader city

(economic development, access, neighborhood livability, etc.) will by default negatively impact minority and low income populations.

10. **Please discuss your concerns regarding indirect or cumulative effects to natural, cultural or historic resources?**

    A concern was raised about how increased impervious area could affect development opportunities. For example, the St. Paul Avenue corridor and Badger Truck area in the Menomonee Valley could experience more stormwater flow from increased pavement. Existing businesses in this area already has flooding problems.

    Maria said she is concerned about impacts on neighborhoods that have historic value. She said all urban neighborhoods have historic roots and are valuable from a historic and cultural point of view. She is concerned about the increase in infrastructure and the increase of impervious surfaces and the effect it could have on the environment and air quality. She said the VA historic resources are also a concern.

11. **What other projects or developments have occurred, are currently happening or are planned that could result in cumulative effects to communities, natural resources or cultural/historic resources when combined with the impacts of this freeway project?**

    Maria provided the following list: redevelopment/development in the Menomonee Valley; preservation of the VA grounds; downtown streetcar; Hank Aaron state trail; Three Bridges Park; neighborhood stability programs; improvements to Washington Park and the work of the Washington Park Partners.

12. **Please provide any other comments you may have.**

    Maria said it seems that all the modernization alternatives plan for a great increase in capacity and these alternatives do not balance the other effects on the primary study area. She said alternatives that plan for a more moderate increase in capacity could balance the impacts better. She felt the study should choose either increased travel lanes or increased distribution lanes (i.e. C/D, frontage roads), but not both. Both seem to be overkill.

MEETING SUMMARY

Overview

The Wisconsin Department of Transportation conducted a focus group meeting on June 6, 2013 to obtain feedback on the project's potential indirect and cumulative effects (ICE). A broad range of stakeholders attended the meeting including local, regional and state government/quasi-government representatives, local businesses, real estate professionals and economic development organizations. In total, 23 people attended the meeting.

The first part of the meeting focused on the population, employment and land use trends affecting the primary and secondary study areas. A large group discussion was held to confirm the trends and to learn about other trends that might be relevant for the analysis.

The second part of the meeting focused on the potential indirect and cumulative effects that may occur as a result of the I-94 East-West corridor project. The participants were divided into five small groups to discuss a series of questions related to indirect and cumulative effects.

Study Area Trends

Overall, the participants agreed with the trends that were presented for the primary and secondary study areas. Participants emphasized that the primary study area has seen large growth in employment from the redevelopment of former industrial lands. They emphasized that the employment growth is substantial and

is in the tens of thousands of new employees. Examples include the Menomonee Valley, Miller Parkway, State Street and the 70th Street/Six Points area in West Allis.

Participants felt the increase in employment in the primary study area has led to an increase in traffic along many local arterials that are now experiencing congestion. They felt that traffic would only get worse in the primary study area because additional opportunities for redevelopment are still available and jobs in the primary study area will continue to increase.

Participants pointed out that the residential population is increasing in some areas of the primary study area such as Milwaukee's near south side. People are attracted to the walkable neighborhoods and the amenities they provide. Also, the recreational and entertainment facilities within the primary study area are attracting millions of visitors annually. This has helped to catalyze revitalization in adjacent neighborhoods.

While some areas of the primary study area are experiencing growth, the north side of I-94, east of the Stadium Interchange is declining in population. This is due to concentration of poverty and poor access to jobs from inadequate transit services and relatively low vehicle ownership rates in these neighborhoods.

It was pointed out that the health of the river system contributes to the quality of life in the area and that water quantity and quality impacts of the freeway need to be considered.

Study Area Boundaries

The participants recommend some adjustments to the primary study area. Suggestions included:

- Moving the northern boundary to North Avenue to capture neighborhoods and business corridors that rely on US 41 for access to I-94.
- Including downtown since the I-94 corridor services existing and planned downtown development.
- Including the Third and Fifth Ward neighborhoods since Milwaukee's Near South Side is experiencing some spill over development from these areas.
- Including the industrial areas along Miller Parkway just south of Lincoln Avenue since these lands rely on access to I-94 via Miller Parkway and could be redeveloped in the future.

No changes to the secondary study area were recommended.

Key Findings

The following are some of the key findings that resulted from the focus group meeting.

<u>New Travel Lanes</u>
For the most part, participants felt the freeway was in need of modernization to improve safety and traffic operations. However, some participants differed on their views about capacity expansion. Many participants felt additional travel lanes were needed to alleviate congestion on the freeway and along local arterial routes. They felt that congestion is limiting the economic development potential of the primary study area by discouraging people from traveling to and within the primary study area. On the other hand, some participants felt that additional travel lanes would support decentralized land use patterns outside Milwaukee County because the improved travel times would make it easier for people to live farther from their place of employment where land is cheaper. Also, a few participants felt that congestion was not discouraging people from coming to the primary study area. Other factors such as availability of parking have a larger influence.

A few participants felt the likelihood of induced development in Waukesha County would increase if the capacity of the freeway was expanded for the entire I-94 corridor through Waukesha County. Other participants felt that capacity expansion throughout the secondary study area would not have much effect on regional development patterns because so many other factors are influencing where people chose to live and the accessibility is already available. Also, many participants felt development within the primary study area would happen regardless of capacity expansion. The primary study area has been experiencing tremendous redevelopment and it benefits from a central location and an existing population base.

Several participants felt that multimodal solutions should be incorporated to help alleviate congestion in the corridor.

Interchange Modifications

Participants strongly felt that all existing access points needed to remain to support the neighborhoods, cultural resources and business corridors that have developed around those access points.

A few participants were concerned about less direct access on the west side of the corridor and how that could affect the viability of business corridors served by those interchanges. Other stakeholders felt the proposed interchange modifications on the west leg would have little effect as long as the design maintained access to both 70th and 68th streets and proper signage on the freeway was provided. Nearly all participants felt the interchange option that removes direct access to 68th Street would negatively affect existing and planned development to the north and would disconnect neighborhoods to the north and south of the freeway. Many participants mentioned the importance of the Hawley Road Interchange to local residential and business areas and said access should be maintained.

Many participants were not concerned about the potential downgrade of the Stadium Interchange as long as it did not cause traffic congestion along US 41 and Miller Parkway. Although some participants felt the full system interchange should be constructed to make sure Miller Parkway is not impacted since it already experiences congestion.

Some participants discussed the need to improve access to I-94 from central city neighborhoods in Milwaukee that currently do not have convenient access to the regional freeway system. They stated that improvements to US 41 and Lisbon Avenue in combination with the freeway project would have a more beneficial effect on economic development for areas to the north of the freeway in the city. Many people along the Lisbon Avenue and North Avenue corridors as well as the 30th Street industrial corridor rely on US 41 for access to I-94.

Some participants felt that the existing access points along the east leg are hindering the economic development potential of areas to the south of I-94. Several participants felt that the proposed east leg interchange alternatives do not adequately address the access concerns in this area. Some participants felt that the access ramp that links to 25th Street should be maintained because 25th Street provides the most convenient access to the Menomonee Valley businesses and attractions. Also, it provides an alternate route when 13th Street is blocked by trains. At least one stakeholder advocated for a ramp off 35th Street that would provide a direct connection to Canal Street to improve access to the Menomonee Valley businesses and attractions. Many participants felt that improved access to 27th Street would help facilitate redevelopment efforts to the north of I-94 in the Avenues West neighborhood.

Local Arterials

Many participants felt that the lack of capacity on the freeway is causing congestion on the local arterials. They felt that adding additional travel lanes to the freeway would reduce congestion on the arterials and help facilitate economic development along these corridors. Less traffic would make parking easier, could improve pedestrian mobility and ultimately reduce the vacancy rates of businesses along the arterials. Corridors that seemed particularly affected by traffic congestion based on comments include National Avenue, Bluemound Road and Miller Parkway. At least one participant felt traffic on the arterials was heavy during commuting hours, but that frequent traffic signal spacing was the main cause of congestion along the local corridors.

No-Build Alternative Land Use Effects

Many participants did not think there would be much difference in land use patterns between the Modernization Alternative and the No Build Alternative. Some participants said the businesses along the arterial routes would not benefit from less traffic and some participants said increasing congestion under the No Build alternative would make it more challenging to market available development sites within the primary study area. A few other participants said modernization without new travel lanes would provide a more balanced approach that would maintain access/improve safety, but have less land use impacts and less neighborhood impacts.

Factors Influencing Development

The participants discussed several factors that are influencing development in the primary study area. Some participants said that brownfields make redevelopment more challenging within the primary study area. Also, parcels that are not well connected to the local street network are difficult to develop.

Many factors within the primary study area are facilitating development including:

- New housing developments that spur retail development.
- Spill over development from fast growing neighborhoods like the Third and Fifth Wards.
- Population density that creates buying power for retail development.
- Close proximity to workers.
- Close proximity to jobs and shorter commutes.
- Walkable neighborhoods.
- More transportation options including transit, walking and bicycling.

Some participants discussed that the main limitation to retail development in western Waukesha County is the lack of population density.

Project Design Features

Some participants expressed concerns about some of the project's design features that may affect the quality of life in the adjacent neighborhoods, particularly o the west side of the corridor. They felt visual impacts, noise, air quality, traffic in residential areas and property acquisitions would diminish the quality of neighborhoods adjacent to the freeway. Some participants felt that a six- lane modernization alternative or a combination of modernization/spot improvements would be a more balanced approach that preserves access and reduces neighborhood impacts. They indicated that it would be helpful to compare the impacts of six lanes versus eight lanes.

Participants discussed the proposed bridge structure on the east leg that could be constructed to realign the mainline of I-94 in this section. Some participants were concerned that this structure would create an unpleasant environment and attract nuisance activities. They felt that it would hinder the planned redevelopment of the St. Paul Avenue corridor in the Menomonee Valley and create a blighting influence for many years after it is constructed. It would also diminish one of the main entrances to the Menomonee Valley along 25th Street.

Some participants discussed that the freeway creates a barrier between the neighborhoods on the north and south sides. They felt the north side neighborhoods would benefit from more connectivity to the south side to improve access to recreational amenities such as the Hank Aaron State Trail.

A few participants were also concerned about the visual barrier the double deck cemetery option would create between the cultural and historic resources at the VA and cemeteries.

Environmental Justice Effects

A large portion of the state's low-income and minority populations live in the primary study area and in the city of Milwaukee in general. Poverty on the north side of Milwaukee is related to a lack of access to jobs. It is difficult for these residents to access suburban job markets that have spread west along I-94 and north along I-43/US 45. Residents in these neighborhoods have low vehicle ownership rates, low rates of valid driver's licenses and the region does not have regional transit that make it easy to travel between counties.

Several participants felt access to the freeway was important for environmental justice populations living to the north and south of the freeway. Access to the freeway is important for minority owned businesses that rely on access to the freeway and for residents that need to utilize the freeway to access employment and goods and services. Some participants discussed that access to I-94 from central city neighborhoods is challenging due to poor pavement conditions along Lisbon Avenue and US 41. Improvements to arterial streets that connect with I-94 would help improve freeway accessibility to central city neighborhoods and help encourage neighborhood retail services.

Many participants indicated that transit is essential to get people to jobs and that transit should be provided on a regional basis. At least one participant noted that capacity expansion would be less of a concern if

regional transit was being implemented and if people weren't trying to stop projects like the Milwaukee Streetcar.

Natural Resources

A few participants said they were concerned about potential indirect and cumulative effects to the river system from an increase in impervious space and an increase in stormwater runoff. They said the highway is contributing to the pollutant load of the river system and an increase in the volume of water is impacting the Menomonee River. Increases in water volume have the potential indirect and/or cumulative effects:

- Increases the velocity of rivers and reduces public safety.
- Increases the erosion of stream banks and could impact recent stream restoration projects undertaken by MMSD.
- Increases in erosion impacts the viability of utilities that are located along streams.
- Increases the likelihood of flooding existing and planned development.
- Makes it more challenging for fish to travel upstream.

At least one participant suggested using lands that would become available from the realignment of the freeway mainline on the east leg for stormwater management.

ATTENDANCE RECORD

I-94 East-West Freeway Corridor Study

Indirect and Cumulative Effects Focus Group

Thursday, June 6th; 9:00 AM - 12:00 PM

STOC - Empire Builder Conference Room

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Attendee Name	Representing	Phone Number	Email Address
DIANNE EINBICHNER	Downtown West Allis	414-774-2676	director@downtownwestallis.org
MONICA WAUCIC	WisDOT	414-750-4742	monica.waucic@dot.wi.gov
CHRIS HIEBERT	SEWRPC	262-547-6721	CHIEBERT@SEWRPC.org
Bethaney Bacher-Gresock	FHWA	608-662-2119	Bethaney.Bacher-Gresock@dot.gov
Mike Brockman	Miller Park	414-588-7931	mbrockman@thesignagroup.com
Dan Adams	Layton Boulevard West Neighbors	414-383-9038	daniel@lbwn.org
Paulette Enders	City of Wauwatosa	414-479-3531	penders@wauwatosa.net
Debra Jensen	MMSD	414 225 2143	djensen@mmsd.com
Jason Tolleson	Harley-Davidson	262-343-4134	jason.tolleson@harley-davidson.com
Kyle Harmon	Summit City Manager	414-~~[illegible]~~ 475-3570	kharmon@summit-city.com
Teig Whaley-Smith	Milwaukee County	414 [illegible]-4185	teig.whaley-smith@milwcnty.com

ATTENDANCE RECORD
I-94 East-West Freeway Corridor Study

Indirect and Cumulative Effects Focus Group

Thursday, June 6th; 9:00 AM - 12:00 PM
STOC - Empire Builder Conference Room

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Attendee Name	Representing	Phone Number	Email Address
Maria Pandazi	City of Milw - DCD	414-286-5836	mpanda@milwaukee.gov
Ken Yunker	SEWRPC	262-547-6721	kyunker@sewrpc.org
Randy Crump	African American Chamber	414 847 0990 x104	rcrump@prismtechnical.com
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Janet Nodorft	WISDOT	608-267-7360	janet.nodorft@dot.wi.gov
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Larry Roberts	Potawatomi Casino	414-847-7333	LRoberts@Paysbig.com

ATTENDANCE RECORD

I-94 East-West Freeway Corridor Study

Indirect and Cumulative Effects Focus Group

Thursday, June 6th; 9:00 AM - 12:00 PM

STOC - Empire Builder Conference Room

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Attendee Name	Representing	Phone Number	Email Address
Corey Zetts	Menomonee Valley Partners	274-4855	Corey@RenewTheValley.org
JOHN STALEWSKI	VILLAGE OF WEST MILW	645-7949	JSTALEWSKI@GOODMANRUBBER.COM
Shannon L. Jefferson	Gibraltar Industries Inc AMCC	(414) 460-8040	sjeg@gibraltarindustries.inc.com
Jim Plaisted	Waukesha		
BART GRIEPENTROG	CITY OF WEST ALLIS	414 302 8409	bgriepentrog@westalliswi.gov
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Appendix C: Stakeholder Meetings with Private-Sector Real Estate Professionals

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Real Estate/Developer Meetings

A series of meetings were held with local real estate professionals as part of the indirect and cumulative effects analysis. The purpose of the meetings was to obtain input from private sector real estate firms on potential land use and development changes that could occur as a result of the No Build and Modernization Alternatives for the I-94 East-West corridor. Some of the key discussion points that came out of the meetings include:

- Convenient and easy to understand access is the most important factor for supporting existing business areas that are served by the freeway corridor.
- The elimination of the Hawley Road interchange would severely hamper West Allis' economic development and job creation goals and could diminish the value of existing development that relies on the access.
- The C-D roads proposed for the west segment are not expected to hinder development in West Allis or Wauwatosa. It is a matter of a new learned behavior.
- Adding new travel lanes would help facilitate development in the communities that surround the corridor and in downtown because people and employers avoid areas that are congested.
- The at-grade cemetery section would affect safety and traffic flow, which would diminish the benefits of reconstructing and expanding the freeway.
- Consolidating access at 27th Street would improve access on the east segment and help the Layton Boulevard West and Avenues West neighborhoods.
- No concerns were raised about the single-point interchange alternative proposed for the Stadium Interchange.
- Adding new travel lanes is not likely to spur development outside existing urbanized areas. Infill development areas in downtown and the first and second tier suburbs are most desirable. Developers do not want to risk investments in areas such as western Waukesha County that are too distant from the population base, especially since the economic recession. Employers want to be close to the work force and retailers want to be close to customers. This is why Pabst Farms in Oconomowoc has been struggling to attract development.

The following table lists the meetings that were held and the subsequent sections summarize the comments that were made at each meeting.

Name	Company	Project staff in attendance	Date/Time	Meeting Location
Sean Phelan	Phelan Development	Jason Lynch, WisDOT; Charlie Webb, CH2M Hill, Carolyn Seboe, HNTB	August 1, 2013; 9 a.m.	Colectivo cafe (former Alterra) 68th and Wells Street, Milwaukee, WI
David Merrick	Irgens	Jason Lynch, WisDOT; Andrew Rohde, WisDOT; Charlie Webb, CH2M Hill; Carolyn Seboe, HNTB	August 7, 2013; 9;30 a.m.	HNTB office 11414 W Park Place, Suite 300, Milwaukee, WI
Sig Strautmanis	General Capital Group	Jason Lynch, WisDOT; Andrew Rohde, WisDOT; Carolyn Seboe, HNTB	August 7, 2013; 11:00 a.m.	General Capital Group Office, 6938 N. Santa Monica Blvd, Fox Point, WI
Robert Simi	Miron Construction; Wauwatosa Economic Development Advisory Committee	Andrew Rohde, WisDOT; Charlie Webb, CH2M Hill Carolyn Seboe, HNTB	August 7, 2013; 1:30 p.m.	Miron Construction Office, 10700 Research Drive, Milwaukee, WI
Rod Rinzel; Steve Caveney; Daniel Lee; Joel Lee	Van Buren Management	Jason Lynch, WisDOT; Carolyn Seboe, HNTB	August 14, 2013; 2:30 p.m.	Van Buren Management Office, 788 N. Jefferson Street, Suite 800 Milwaukee, WI

Sean Phelan Meeting Summary

- Sean does real estate investment and consulting mostly in the eastern half of Wauwatosa. He was an investor for this Alterra (now Colectivo) café.
- Wauwatosa is thriving as the next generation of people and young families move into the city. This has helped to push redevelopment along North Avenue and State Street. Wauwatosa residents tend to be loyal to local businesses.
- US 41 is an important access point for the eastern side of Wauwatosa and Bluemound, State and North provide east-west connections. 68th Street is also important for Wauwatosa. If no interchange at Hawley Road it would create less direct access for Vliet Street. Hawley is less critical for Wauwatosa, but it would be more important for West Allis businesses. Maintaining existing access points is important because people are used to it.
- In regards to the collector-distributor roads on the west leg, Sean felt shorter ramps are best, but it is more important to provide safe access. The collector-distributor ramps will require people to learn a new behavior, but will be safer for people to get off the freeway sooner.
- When asked about the land use effects of freeway capacity expansion, Sean felt convenient and safe access points were most important for local business corridors. He felt the speed of the freeway was less important. He is a city grid person and avoids the freeway. He feels it is important to get people to the city grid because traffic on the grid exposes businesses to potential customers. Finding ways to get people to the grid is more important than how fast the freeway flows. When people slow down they realize what shops are there. He would like to see more cars on North Avenue.
- He was uncertain if the freeway capacity expansion would induce development in Waukesha County. Overall, he did not think it would have a negative effect on Wauwatosa because many other factors are driving development in the city such as young families moving to Tosa. He thought more local business signage on the freeway may encourage Waukesha County residents to visit Milwaukee County businesses.
- Sean suggested meetings with Van Buren Management who owns the Renaissance building in West Allis to discuss the local business effects of closing Hawley Road. Dan Lee is the contact.

David Merrick Meeting Summary

- David Merrick works for Irgens. His office is in the Milwaukee County Research Park. Irgens buys, develops and manages commercial properties. They are long-term holders of properties. They have properties in downtown, Wauwatosa, Brookfield, Waukesha, Pewaukee, Madison. They also work in Arizona and Illinois.
- David said there is currently a perception that it is not easy to get downtown. (Traffic congestion is not bad here in comparison to other cities.) He feels if it is easier to get to downtown, people may be willing to do businesses in downtown.
- Some businesses in Waukesha don't want to locate in downtown because they are worried about losing employees that live in Waukesha.
- The Menomonee Valley is hard to access due to the existing confusing access points. The businesses in the valley are destination type businesses.
- When asked about potential changes to land use and development as a result of adding lanes on I-94 in Milwaukee and Waukesha counties, David said you don't see greenfield developments popping up, especially coming out of the recession. Developers are looking for infill sites that have existing services and are in close proximity to existing workforce and population base. If you get too far west in Waukesha County you distant yourself from the employment base. Retailers also want to be close to population densities. Pabst Farms in Oconomowoc is trying to attract development, but it is too green.
- David gave examples of the type of infill developments that are currently happening. The Burleigh Triangle in Wauwatosa (US 45 and Burleigh) is an infill redevelopment project at the former Roundy's warehouse. It is being called the Mayfair Collection and will have a Nordstrom Rack as an anchor. Irgens recently purchased the 66-acre Ruby Farm site in Brookfield. He considers this a greenfield infill site (undeveloped land that is within exiting urban area). Plans are being developed, but he expects at least 1 million square feet of office, retail and medical uses will be built. The UWM Innovation campus (northeast corner of Milwaukee County grounds) is another example of an infill development that is underway.
- Developers jump on infill sites that aren't encumbered. Environmental contamination is not that big of a deal today.
- When asked about how transit influences employer's location decisions, David said it is a factor that they take into consideration, but it depends on the type of business. Transit access is very important for back office, blue collar and industrial businesses.

- The loss of the Hawley Road interchange would be a problem from a real estate standpoint especially for West Allis, but also provides good access to State Street in Wauwatosa.
- Wauwatosa is very centrally located, which is good for employers. They are surrounded by population densities in all directions.
- Downtown is limited by the lake, but has its own market and is seeing lots of activity. Examples include a new Northwestern Mutual Life Insurance office tower, The Couture hotel/apartment tower and the Irgens 18 story office building at 833 E Michigan Street.
- The first and second ring suburbs (Wauwatosa, New Berlin and Brookfield) are seeing a lot of activity for office, retail and industrial and it is likely to continue.

Sig Strautmanis Meeting Summary

- Sig is a partner at General Capital Group. They are a small development firm that has a commercial, industrial and multifamily housing portfolio. Sig primarily focuses on affordable and supportive housing projects in the Milwaukee area including city of Milwaukee, West Allis and Brown Deer. He partners with local groups such as the School Sisters of St. Francis, Jewish Family Services and other nonprofits.
- Project examples include:
    - Mcauley apartments – St Catherine Residence (supportive housing), downtown Milwaukee
    - Hide House in Bayview, Milwaukee
    - Beerline B Apartments on Commerce Street in Milwaukee
    - Berkshire in West Allis (senior apartments, first floor retail)
    - Pick N Save and Menards in West Milwaukee (Miller Park Way)
    - Senior housing in West Allis (Greenfield and 65th Street/Six Points)
    - Reed Street Yards – 14 acre planned urban office, educational and research zone focused on attracting water-related businesses. Near downtown Milwaukee along south bank of Menomonee River and 6th Street.
- The proposed design for the 68th/70th street interchange with C-D roads is a matter of people getting used to the new movements. He does not believe it would affect local business districts.
- The alternative that relieves the most congestion for through movements would benefit local economic development the most. If it is challenging to get to businesses people will avoid an area. From a business perspective reducing congestion is a benefit.
- Maintaining connectivity is important. Closing Hawley Road interchange would not be a concern for residential areas, they would drive the extra blocks. However, it would be a concern for business districts. Hawley is a way for people to get to the Six Points area in West Allis.
- The retail in West Milwaukee along Miller Parkway relies on smooth traffic flow for regional retail destinations. Commercial development along Miller Parkway is likely to continue. The community was aggressive in pursuing development and used TIF to encourage redevelopment.
- West Allis is benefiting from people moving back to the city, this trend will continue. They also benefit from amenity rich neighborhoods (Six Points) and good freeway access and freeway capacity.
- Substantial investments are occurring downtown Milwaukee. The apartment market is exploding.
- Consolidated access at 27th Street would benefit the Layton Boulevard West and Avenues West neighborhoods. Clean and easy access would present an opportunity to enhance a gateway to the neighborhoods. The current access is confusing.
- The interchange configuration for Hawley Road is not ideal, but other options would impact adjacent residences. Closing Hawley Road interchange would diminish the economic development potential of West Allis.
- Sig was not concerned about the single point interchange option for the Stadium Interchange. He felt the alternative actually cleans up access and makes it easier to understand.
- Sig felt that the freeway should be reconstructed in such a manner that would allow the flexibility to accommodate transit someday. Transit is very important for citizens that do not own vehicles.

Robert Simi Meeting Summary

- Robert works for Miron Construction as a commercial builder and he serves on the City of Wauwatosa Economic Development Advisory Committee. It is a high level policy committee that is making recommendations to the city on how to streamline the city processes to encourage thoughtful redevelopment.
- The city wants to encourage redevelopment to help increase the City's tax base. They have divided the city into 11 redevelopment areas that could add $2 to $3 billion in revenues. They are banking on Tosa's position in the region and the desirability of the community to increase development and minimize the use of TIF.
- County Grounds – the northeast quadrant is moving forward with development now. Bob would like to see the city be proactive on the northwest quadrant. It has the potential to generate $250-$300 million of private investment. It will be watered down somewhat by the high tension power lines. Need to make sure parcels are ready for development and get out of the way of the private sector.
- He does not feel adding capacity would decrease the competitive nature of urban areas. He feels this is a flawed argument. Congestion is a sign of a strong economy, but too much congestion can diminish economic development potential. Bob is not concerned about the freeway project taking traffic off the arterials. It will make Tosa more accessible form the east and west.
- Robert suggested the I-94 team should meet with NAIOP, the state's professional organization for commercial developers. They have a good pulse on every available parcel in the region.
- Robert said he is not concerned about the C-D roads proposed for 68th/70th street interchange. He said it still provides convenient access for Wauwatosa. He also did not have any concerns about the single-point alternative for the Stadium Interchange.
- Robert said he believes the I-94 Modernization Alternative which includes capacity expansion would enhance Wauwatosa and help it achieve its economic development goals. He feels the I-94 project is consistent with Wauwatosa's economic development goals.

Van Buren Management Meeting Summary

- The at-grade option in the cemetery section defeats the safety purpose of the project. It seems dangerous to have narrow lane widths. It would do nothing for traffic flow and it would increase accidents. It is counterproductive, might as well reconstruct as is. The at-grade option is even worse since it does not provide a connector/frontage road between Hawley and 68th/70th streets like some of the previous alternatives.
- If you are creating a bottleneck at the cemetery segment and not providing a connector road between Hawley and 68/70, why make capacity improvements elsewhere.
- If Hawley Road is closed it will increase traffic on local roads like 68/70 streets, Wisconsin, Wells and National. Increased traffic would come from residents and employees that would need to travel on local roads to reach alternate interchange locations.
- Van Buren Management owns the Renaissance Faire building located at 801 S. 60th Street in West Allis. It was a former Sam's Club. They recently renovated the building to attract new office tenants and add up to 200,000 square feet of new space. The project was just finished and tenants are moving in. Tenants include Wheaton Franciscan, CBS-affiliate WDJT-TV (Channel 58) and US Bank. The building contains about 400,000 square feet of office space.
- The Renaissance building is very important for the redevelopment of the city of West Allis which was devastated by the loss of manufacturing jobs over previous decades. The building has created a gateway to the city and created an opportunity to create new jobs in the community. The loss of Hawley Road interchange would devastate West Allis.
- Employers are attracted to West Allis for back office functions. The high density residential areas provide a large labor pool for employers to draw from. Also, the area's convenient freeway access at Hawley Road and its close proximity to downtown, allows employees to travel easily between the back office functions in West Allis and the office functions in downtown Milwaukee.
- Van Buren Management said tenants of the Renaissance Faire building have said they would move out of the building if the Hawley Road interchange was eliminated. The tenants made the decision to invest in this location because of the freeway access.
- The removal of the Hawley Road interchange would also devastate Bally's, which is located next to the Renaissance building. The loss of Bally's would make the area less desirable for the remaining tenants. The Bally's parking lot has about 2,000 cars per day.
- Van Buren Management would consider talking with WisDOT about acquiring the WisDOT service facility just south of the Renaissance Faire building along 60th Street because they see the potential for additional office tenants in this area and the service facility is not the best use. However, they will not make additional investments in the area if the Hawley Road interchange is closed.

- Most of Van Buren Management's portfolio is in downtown Milwaukee. They feel improving traffic flow along I-94 would help downtown. If travel times to downtown increase it makes areas outside downtown more attractive to development. For example, Northwestern Mutual looked at the I-43 corridor, but decided the bottleneck near Bender Road would limit mobility. They looked where freeway accessibility was the best and they chose Franklin. Employees would be more productive and spend less time in traffic.
- Van Buren Management strongly felt the double deck option should be selected to improve safety and traffic flow. Maintaining Hawley Road interchange is also very important to the redevelopment of West Allis and to maintain the viability of the Renaissance Faire building. They did not feel the cost of the double deck option should be the deciding factor because it is not that great when considered over the 50 year lifespan of the freeway infrastructure.

Notes prepared by Carolyn Seboe, HNTB

Appendix D: Downtown Stakeholders Meeting Summary

I-94 East-West Corridor Study
Indirect and Cumulative Effects
Meeting Minutes for Stakeholder Interviews

Meeting	Downtown Stakeholders – City of Milwaukee DCD; Downtown BID; Milwaukee County Economic Development; Historic Third Ward
Date, Time	August 29, 2013; 10 a.m.
Location	City of Milwaukee Department of City Development, 809 N Broadway
Attendees	Greg Patin, DCD Steve Looft, Downtown BID Nancy O'Keefe, Historic Third Ward Association Emily VanDeraa, Milwaukee County Economic Development Jason Lynch, WisDOT Monica Wauk, WisDOT Carolyn Seboe, HNTB

Meeting Summary

A meeting was conducted with downtown stakeholders to discuss indirect and cumulative effects for the I-94 East-West Corridor Study. The I-43 North-South Corridor Study was also discussed.

The following is a summary of the comments that were made at the meeting:

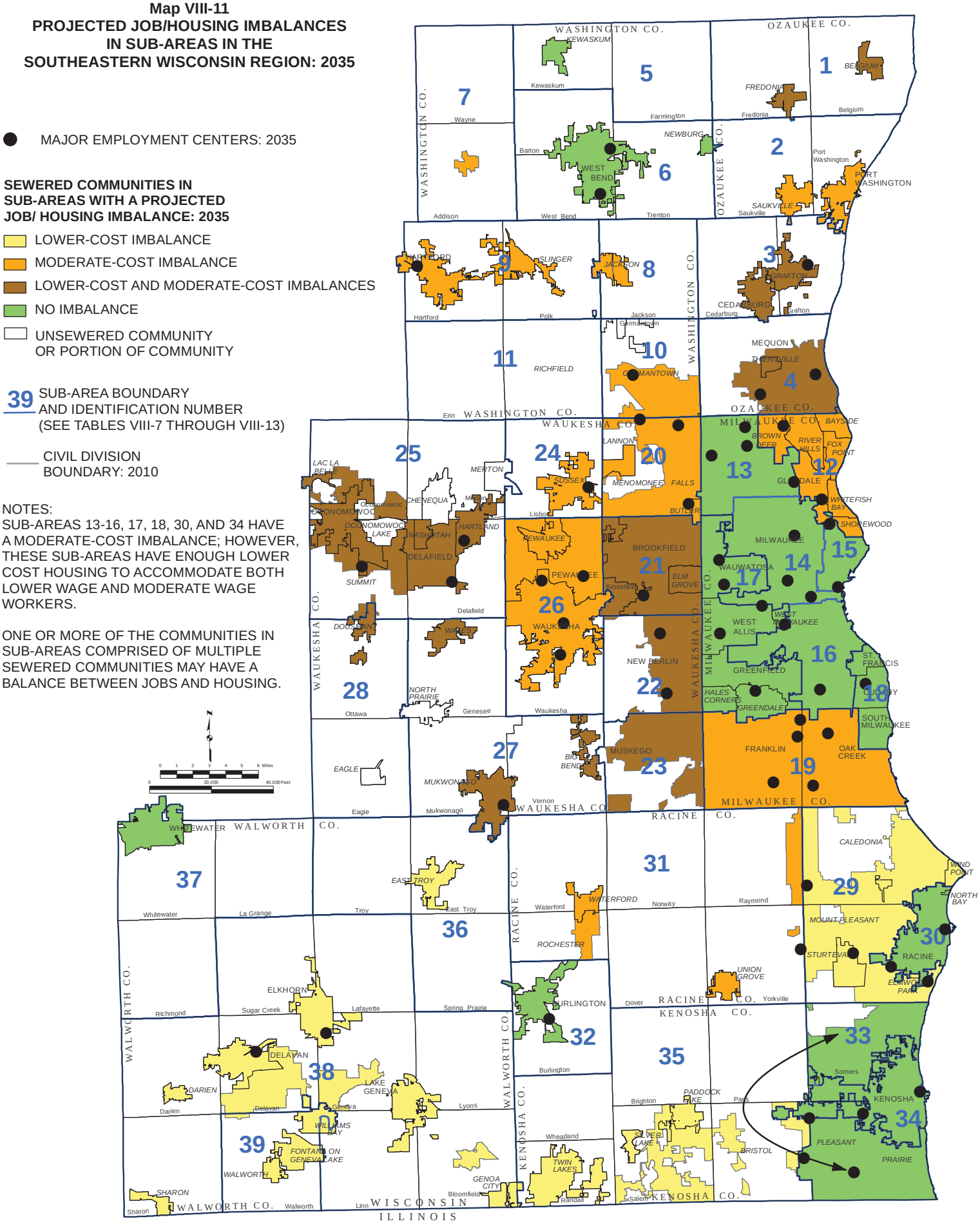
- Greg asked about the potential to develop the land that would be vacated by the realignment of the freeway on the east leg. Jason said it would no longer be needed for freeway use, but grade changes would need to be overcome.
- The city is coordinating with WisDOT on the Lake Interchange project. The project will free up land in downtown and the Third Ward. Several large developments are pending in this area such as the Couture hotel/apartment tower.
- The city is looking for opportunities to fill land that was left vacant by the Marquette Interchange. Exploring recreational uses.
- Infill development is occurring in downtown. Apartment development is strong right now. 100 units is a common scale for apartment developments.
- The Brewery (former Pabst Brewery) continues to grow and attract development.
- The west side of downtown and along Wisconsin Avenue is an area of concern, but also an area of interest. This area will see change. More residential growth is anticipated. The area needs a demographic shift to encourage redevelopment.
- Downtown Milwaukee is very stable. It experiences losses, but also gains. Slow growth, but comfortable, making progress. Not like Sunbelt growth.
- Downtown has about 80,000 jobs – this number has remained stable. Fortunate to not be like some cities that continue to lose jobs.
- The younger generation (22 to 33 year olds) is very interested in living downtown and being close to its amenities. They tend to stay local and utilize downtown businesses. Employers should understand this shift when considering business locations.
- The success and energy of the Third Ward is spilling over to the south and renovations are occurring in the Fifth Ward. The Third Ward continues to grow and has opportunities to development large parking lot areas.
- The city is trying to improve the aesthetics/lighting of the passage under I-794 between the Third Ward and downtown. Improving the connection will help the energy of the Third Ward move north.

- Park East corridor – land to the east of the river is mostly developed or will be. MATC is finishing a parking lot and a housing development at Ogden and Broadway. The county is evaluating options for the west side of the corridor. They are considering marketing the parcels for private development or reserving the land for a potential Bradley-like public/quasi-public use.
- The city is a long land mass and has many different exciting places, but the areas in between those places can be uninteresting. Goal of the downtown plan is to improve those the connections between the activity centers and encourage people to move between the activity centers. Greg did not think the I-94 E-W alternatives would affect this goal.
- The Italian Community Center in the Third Ward is seeking development opportunities within their parking lots.
- The Reed Street Yards is a planned development that is seeking water based research/technology firms and light manufacturing.
- Steve Looft felt improved traffic flow along I-94 would benefit downtown by improving the connection between downtown and the western suburbs. Better traffic flow would encourage business owners to consider downtown locations and would help existing businesses recruit employees. Currently employers are concerned employees won't want to travel along I-94 to get to work.
- Steve acknowledged the bottleneck on I-43 at Bender, but didn't think the traffic congestion between downtown and the northern suburbs was as bad as I-94. He felt the lakefront route provides a convenient and fast connection to Mequon and other north shore communities. Nancy on the other hand felt the congestion was challenging on I-43 and it made it difficult to conveniently access downtown. Steve hears most complaints about the I-94 corridor from downtown businesses.
- Greg Patin said freeway capacity expansion could make it easier for downtown residents to shop at retail centers in the suburbs and avoid downtown retailers.
- Steve felt that people live in downtown because they want the amenities downtown has to offer that you can't find anywhere else.
- Greg said it is challenging to forecast the land use effects of the freeway. There are so many factors that are in play regarding development. The freeway is not all bad and not all good. Many decisions come into play for development. Metro Milwaukee is not growing much; rising gas prices may influence people's decisions.
- Steve said data and trends show slow, but steady growth in downtown (1 to 1.5%). It is an international movement that people are choosing to live in urban environments.
- A lot of reverse commuting is going on. People living in downtown are commuting to the suburbs. Employment areas are spread across the region, not all in downtown.
- Steve and Nancy felt the easier it is to get people to downtown the better it will be for downtown investment. Need to make sure people can get in and out of downtown.
- More power thinkers/executives are living in downtown. This has helped to change regional trends of where people live and work.
- The speed limits on the freeway would remain the same.
- Greg would like to share the design plans with some of his coworkers and have an internal discussion on this topic. He will let us know if DCD has any additional comments.

Notes prepared by Carolyn Seboe, HNTB

Appendix E: Projected Job/Housing Imbalances in Southeastern Wisconsin: 2035

Map VIII-11
PROJECTED JOB/HOUSING IMBALANCES IN SUB-AREAS IN THE SOUTHEASTERN WISCONSIN REGION: 2035



Source: Local Government Comprehensive Plans and SEWRPC.

Wetland Investigation – GPS Mapping Report*

***(Preliminary Mapping is not a Jurisdictional Delineation of Wetland Boundaries)**

I-94 East-West Corridor Study: Preliminary Wetland Investigation
WisDOT ID# 1060-27-01

Milwaukee County

Prepared for

Wisconsin Department of Transportation
Southeast Region
141 Northwest Barstow St.
Waukesha, WI 53187

REVISED OCTOBER 2012

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GRAEF Project No. 2012-0021.05

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Appendix B Plant Community Lists

Appendix C Site Photographs on CD

Appendix D Wetland Summary Table

I. Introduction

Per the request of the Wisconsin Department of Transportation (WDOT), GRAEF conducted a preliminary wetland mapping within a WDOT-defined Study Area along the I-94 East-West corridor from approximately North 25th Street to North 70th Street, US-41 from I-94 to State Street, and US-341 from I-94 to Canal Street in the City of Milwaukee, Milwaukee County, Wisconsin. The Study Area is outlined in yellow on the Figure series 1 through 3 in Appendix A. The investigation was completed as part of the planning process for improvements to the I-94 corridor. The preliminary wetland mapping was conducted to determine the location and extent of jurisdictional wetlands that could potentially be impacted by the project. Fieldwork was completed from June12-15 by Ron Londre and Geof Parish of GRAEF.

GRAEF identified sixteen (16) wetland areas, hereby referred to as "W-1 through W-16", within the Study Area limits and one waterway, Menomonee River. All of the aforementioned wetlands and waterways are shown on Figures 2-1 through 2-7 in Appendix A.

A. Background Review

Prior to performing the field investigation, GRAEF reviewed the *Wisconsin Wetland Inventory* (WWI) (Figures 3-1 through 3-7, Appendix A) and aerial photographs from 1995, 2000, 2005, and 2010 that were viewed on Southeastern Wisconsin Regional Planning Commission's (SEWRPC's), online GIS Portal[1]. The 2010 aerial photograph, obtained from SEWRPC, was used as the base map for the series of Figures (2 and 3) in Appendix A. Together, these ancillary data sources were used to gather background data in order to identify, preliminarily map, and discuss wetlands within the Study Area.

B. Field Investigation Methods

Using the information from the background review, GRAEF field-checked all potential wetlands within the Study Area corridor looking for outwards signs of wetland hydrology and dominant hydrophytic vegetation. Preliminary wetland boundaries were located using a Global Positioning System (GPS) with sub-meter accuracy. The

[1] http http://maps..orsewrpcg/regionallandinfo/regionalmapping/default.shtm

resulting data were then used to create a plot of approximate wetland boundaries overlaid onto a 2010 aerial base map as depicted on Figures 2-1 through 2-7 (Appendix A). Additionally, each wetland was photographed to visually document conditions at the time of the fieldwork. A photograph of each wetland is included on a CD in Appendix D.

Plant species lists were prepared for each of the wetlands within the Study Area by conducting a meander survey. Lists of observed plant species and a *Wisconsin Floristic Quality Assessment*[2] (WFQA) for each list are provided in Appendix B. Presence of an "X" next to a plant species indicates a dominant or co-dominant species within each community. Taking into account the overall composition of each wetland's plant communities and its hydroperiod, the most appropriate classification was assigned to each wetland using classification system outlined in *The Wisconsin Department of Transportation Wetland Mitigation Banking Technical Guideline*[3].

Each list was entered into an electronic database which uses numerical ratings between 0 and 10 ("C" values) assigned to each native plant species in Wisconsin based upon the probability it was found in a relatively intact and undisturbed plant community found in Wisconsin. The higher the number, the more likely that species was found in a high quality natural area. The average of the sum of all C Values for each recorded species is the "mean C value" which indicates overall relative disturbance the native plant community has undergone since pre-settlement conditions of the 1800's. The mean C value multiplied by the square root of the number of species recorded provides a Floristic Quality Index (FQI), which also provides an indicator of species richness. According to the authors of this floristic quality method, an FQI value lower than 20 is generally indicative of a highly disturbed plant community that is not ecologically significant, while an FQI value above 20 indicates that a plant community may be relatively undisturbed and possess high floristic qualities, but may also be ecologically insignificant. The

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2 Bernthal, Tom. 2003. *Development of a Floristic Quality Assessment for Wisconsin*. Wisconsin Department of Natural Resources, Bureau of Fisheries Management and Habitat Protection, 22 pp.

3 *Wisconsin Department of Transportation Wetland Mitigation Banking Technical Guideline*. 1993, revised March 2002. Wisconsin Department of Natural Resources, United States Army Corps of Engineers, United States Environmental Protection Agency, United States Fish and Wildlife Service, and the Federal Highway Administration.

authors feel that an FQI above 35 is rare and indicative of a plant community with regional ecological significance.

The plant community lists provide a general characterization of wetland plant community composition and quality as well as potential for supporting conservative plant species and diverse wildlife habitat within the Study Area.

II. Results and Discussion

A. Background Review Results

Wisconsin Wetland Inventory Review

The Wisconsin Wetland Inventory (WWI) (Figures 3-1 through 3-7, Appendix A) shows five wetlands or wetland complexes with four different mapped wetland communities within the Study Area which are located in the same approximate locations as W-1, W-2, W-3, and W-16. The mapped wetland cover types within the Study Area are as follows:

F0H = Flats/Unvegetated wet soil (F), Subclass unknown (0), Standing water, palustrine (H)
T3/ F0H = Forested (T), Broad–leaved deciduous (3)/ /Unvegetated wet soil (F), Subclass unknown (0), Standing water, palustrine (H)
WOHx = Open Water (W), Subclass unknown (0), Wet soil, palustrine (H), excavated (x)

When compared to GRAEF's Preliminary Wetland Boundary Map (Figures 2-1 through 2-7, Appendix A), the WWI is generally consistent with the locations and cover types of wetlands W-1, W-2, W-3, and W-16 within the Study Area, however there are a number of discrepancies. For example twelve of the wetlands identified by GRAEF, including W-4 through W-15 were not shown on the WWI. These wetlands were small (<0.5 acre); therefore they may not have been easily detectable on aerial photography. Additionally, between 2007 and 2010 the change in land use from a commercial parcel to the creation of open space along the Menomonee River increased the size of the WWI wetland associated with W-16 to include a Wet Meadow.

Discrepancies between the WWI map and the GRAEF wetland map are attributed to the level of detail observable during field reconnaissance that cannot be observed by aerial observation alone.

Soil Survey Review

The NRCS does not have soils mapped within the study area. Therefore, GRAEF conducted a comprehensive investigation of all areas within the study area to investigate the presence or absence of wetlands.

Aerial Photography

Aerial photographs from 1995, 2000, 2005, and 2010 were reviewed on SEWRPC's Regional Map Viewer to determine the potential extent of wetlands within the Study Area and to analyze potential plant community types prior to the fieldwork. The most recent aerial photograph from the year 2010 was used as the base map for the series of Figures (2 and 3) in Appendix A.

Wetland features are typically observed on aerial photographs as non-farmed light tones with texture (often indicating a sedge or wet meadow), as dark tones in farmed areas, or as solid black tones indicating presence of standing water such as in ponds, rivers, and permanently inundated wetlands.

B. Field Investigation Findings

Types of Wetlands Identified

A total of sixteen (16) wetland areas (W-1 through W-16, and one navigable waterway, (Menomonee River) were identified within the Study Area limits. All of the aforementioned wetlands area shown on Figures 2-1 through 2-7 in Appendix A. On-site photographs of each wetland are located on the CD in Appendix D. All of the wetlands within the Study Area were GPS-located.

Wetlands in the Study Area were classified according to the system outlined in *The Wisconsin Department of Transportation Wetland Mitigation Banking Technical Guideline*. The Wetland Information Table in Appendix E lists the location

(Township, Range and Section 1/4), WDOT wetland classification, dominant species, FQI, WWI mapped wetland type, association with a mapped waterway, for each identified wetland within the Study Area. The table also provides additional relevant comments and an opinion of jurisdiction based on a significant nexus to waterways that are known to be tributaries to navigable waters of the U.S. However, the final determination on this jurisdictional status of each wetland must be made by the U.S. Army Corps of Engineers (USACE). It is GRAEF's opinion that all of the wetlands in the Study Area, with the exceptions of wetlands W-1, W-2, W-3 and W-16, appear to be isolated and would likely be under the jurisdiction of only the Wisconsin Department of Natural Resources (WDNR), however this would require a jurisdictional determination by the USACE. Wetlands W-1, W-2, W-3 and W-16 appear to be non-isolated and would likely be under the jurisdictions of the WDNR and the USACE. Two of the wetlands W-1 and W-3 appear to been constructed for and serving as storm water detention basins as evident by the shape, location, and presence of inlet and outlet structures. However, because all three wetland criteria were identified they were determined to be wetlands.

In general, most of the wetlands in the Study Area corridor exhibited varying degrees of degradation that likely resulted in part from incompatible land use, such as hydrologic disturbances, frequent land alterations, and sedimentation and pollution from runoff. Evidence of degradation included physical disturbance such as the predominance of aggressive non-native plant species, deposited sediment, and salt damage.

Other Waters Identified

In addition to the identified wetlands, one perennial waterway, Menomonee River, was observed within the Study Area. According to the WDNR's Surface Water Data Viewer[4], the Menomonee River is a Natural Heritage Inventory Water (NHI) and is considered an Area of Special Natural Resources Interest (ASNRI). This special designation may be important during a potential permitting scenario as these areas are typically more environmentally sensitive and therefore may require avoidance or a more environmentally sensitive design approach.

[4] http://dnrmaps.wi.gov/imf/imf.jsp?site=SurfaceWaterViewer

III. Summary

Based on the preliminary wetland mapping completed by GRAEF, there are sixteen (16) wetland areas (W-1 through W-16) and one navigable waterway (Menomonee River) within the Study Area limits. Most of the wetlands are small to medium sized and degraded due to urban land use practices.

Since a preliminary mapping is not a jurisdictional delineation of wetland boundaries, Methods outlined in the 1987 *Corps of Engineers Wetlands Delineation Manual*[5] (Corps Manual), the August 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*[6] *(Midwest Supplement),* and the *Basic Guide to Wisconsin's Wetlands and their Boundaries*[7] should be used to further refine the wetlands within the Study Area in the event that any new construction are planned. Twelve of the wetlands (W-4 through W-15) in the Study Area appear to be isolated, with W-1, W-2, W-3 and W-16 that are likely to be under the jurisdictions of both the WDNR and USACE. The final jurisdictional determination lies with the USACE and it is recommended that such a determination be made for W-4 through W-15. Any alteration of the land within these wetlands area may require a joint Section 404 with 401 Water Quality Certification from one or both of these agencies. In addition, environmentally sensitive areas with special designations may require avoidance or a more thoughtful design approach.

[5] Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

[6] Environmental Laboratory. August *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0). U.S. Army Engineer Waterways Research & Development Center, Vicksburg, MS.*

[7] WI Department of Administration, WI Coastal Management Program. 1995. *Basic Guide to Wisconsin's Wetlands and their Boundaries.* WI Coastal Management Program, Madison, WI

APPENDICES

Appendix A **Figures**

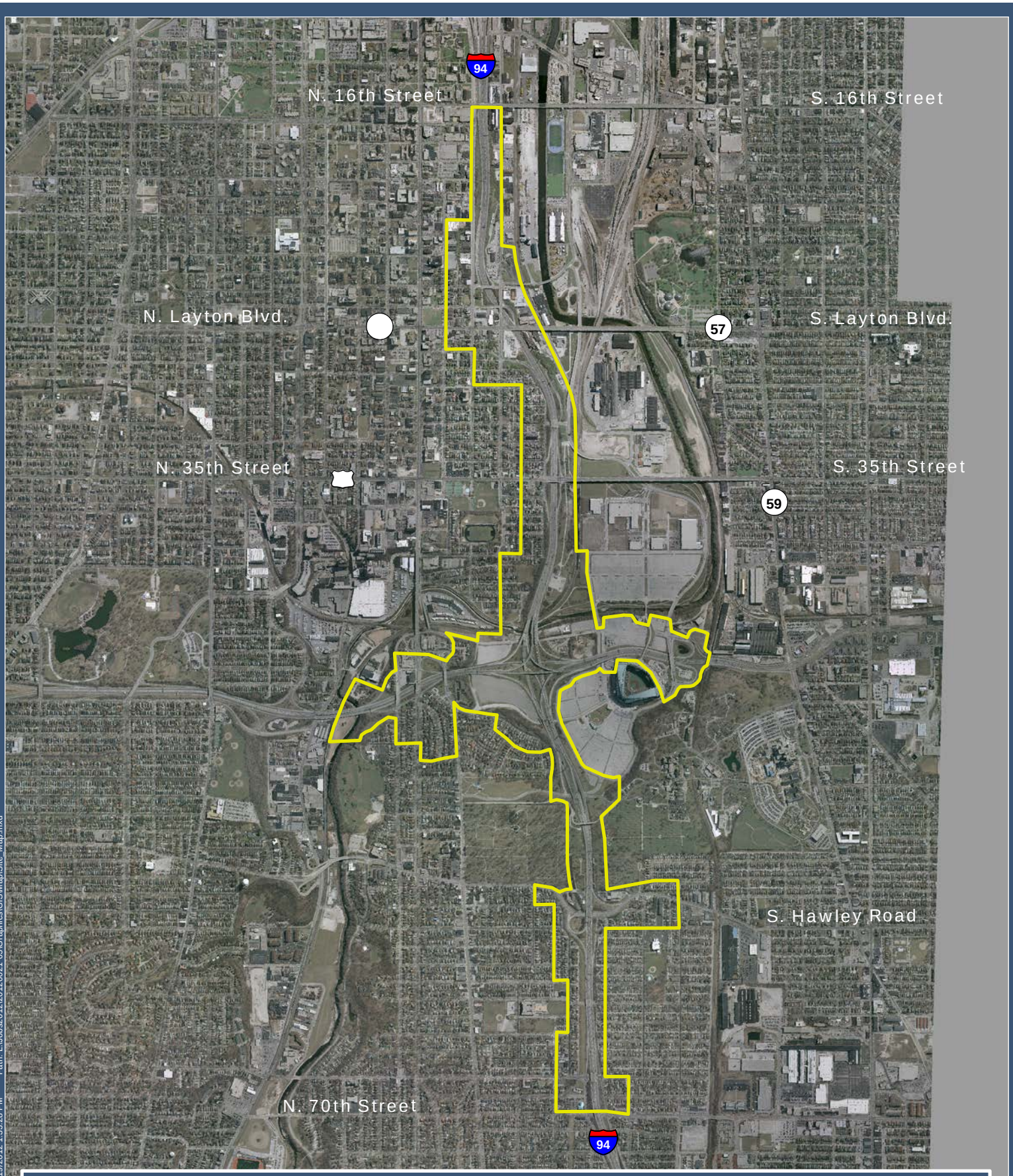
Appendix B **Plant Community Lists**

Appendix C **Site Photographs on CD**

Appendix D **Wetland Summary Table**

APPENDIX A

Figures



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1 in = 2,250 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - Site Map

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION
MILWAUKEE, WISCONSIN

FIGURE # 1

GRAEF

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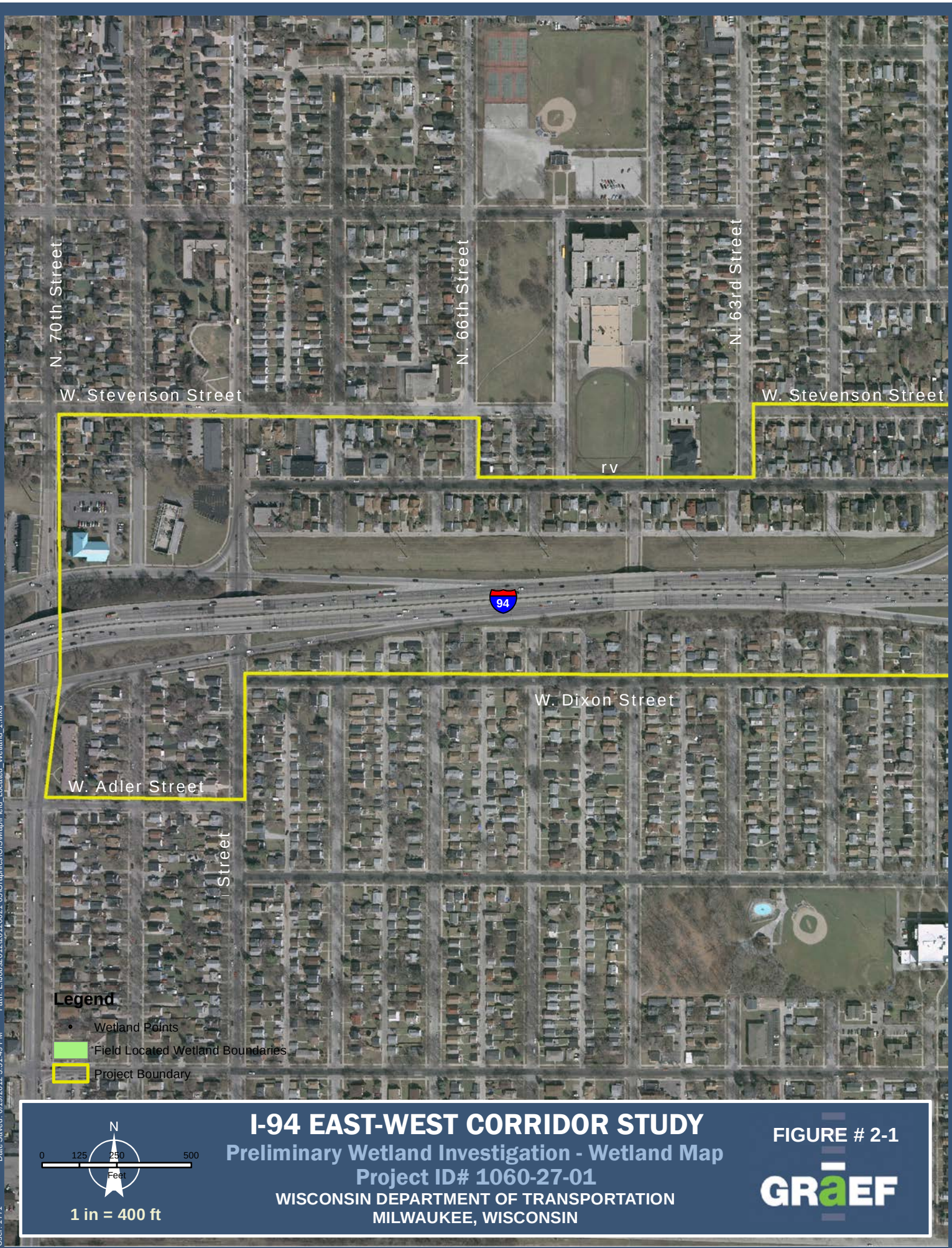

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - Wetland Map

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION
MILWAUKEE, WISCONSIN

FIGURE # 2-1

GRAEF

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I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - Wetland Map

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION
MILWAUKEE, WISCONSIN

FIGURE # 2-2

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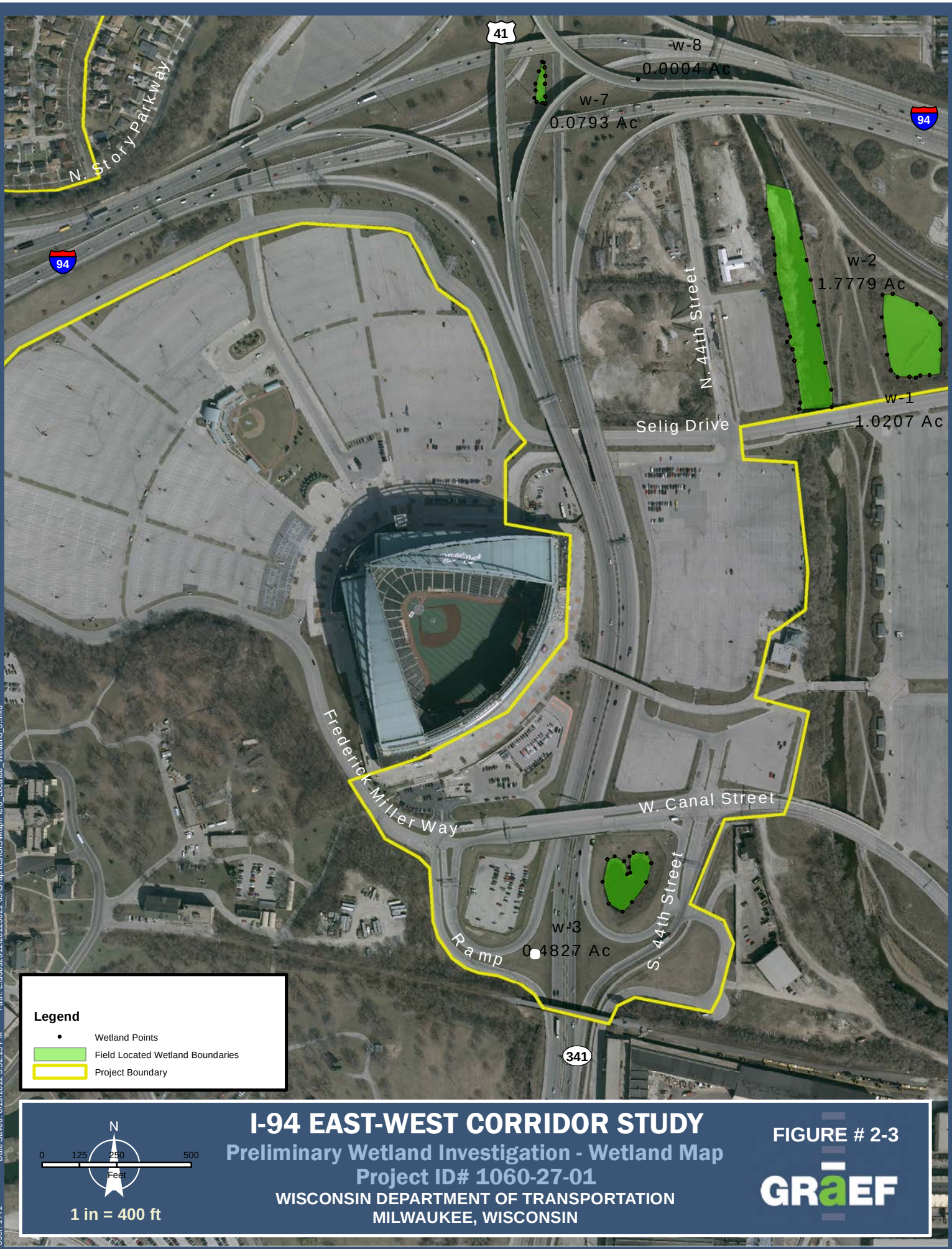

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - Wetland Map

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION
MILWAUKEE, WISCONSIN

FIGURE # 2-3

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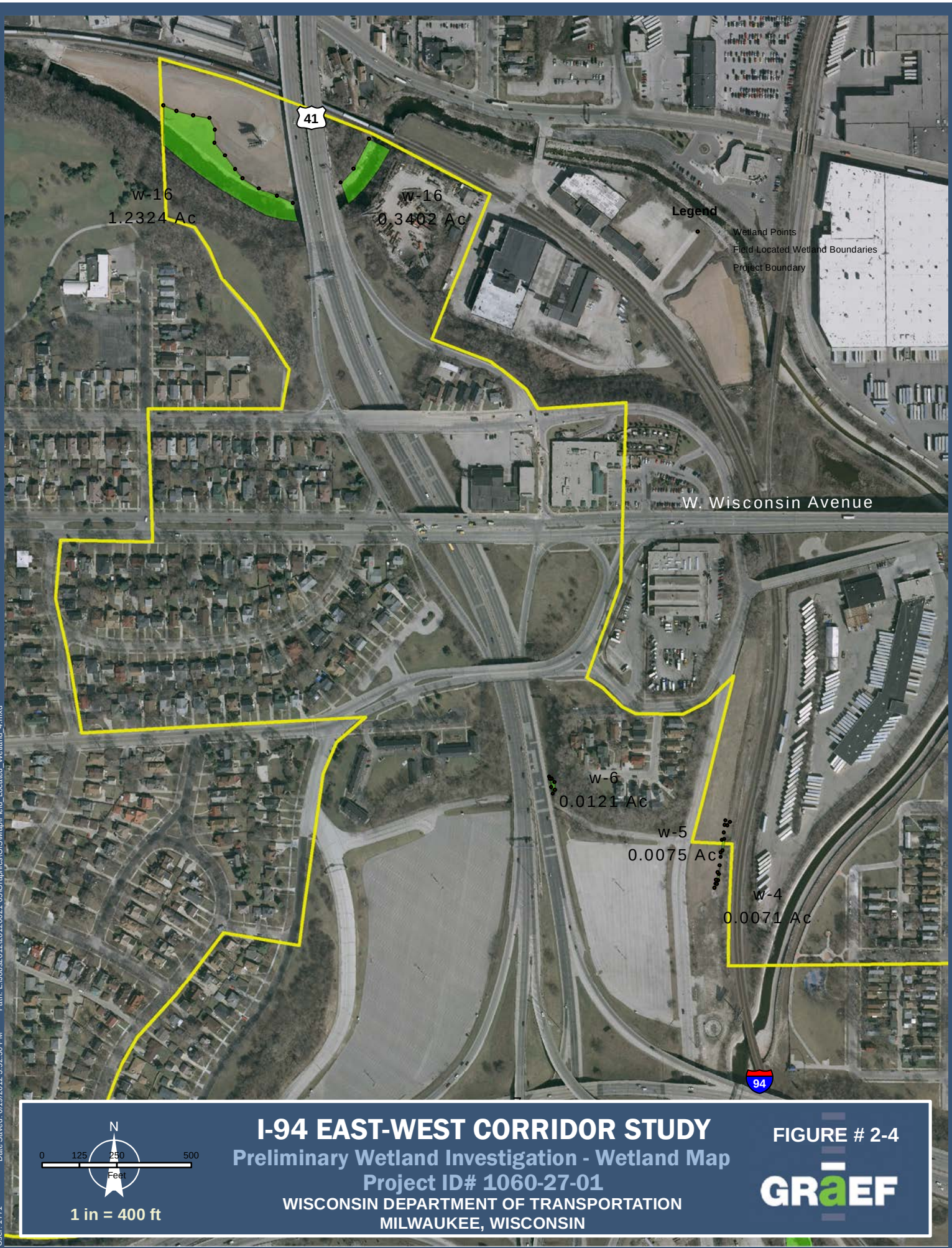

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - Wetland Map

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION

MILWAUKEE, WISCONSIN

FIGURE # 2-4

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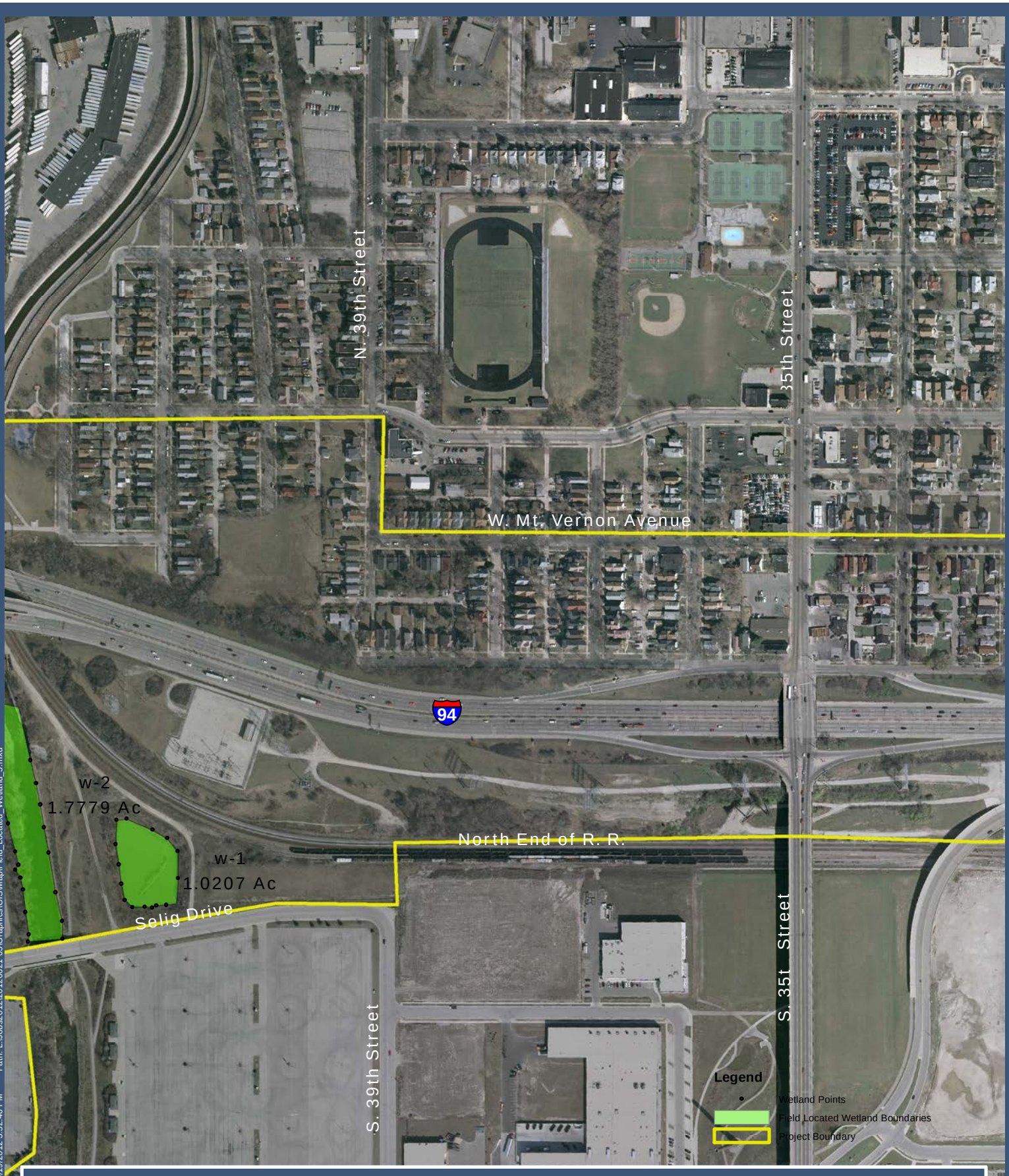

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1 in = 400 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - Wetland Map

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION

MILWAUKEE, WISCONSIN

FIGURE # 2-5

GRAEF

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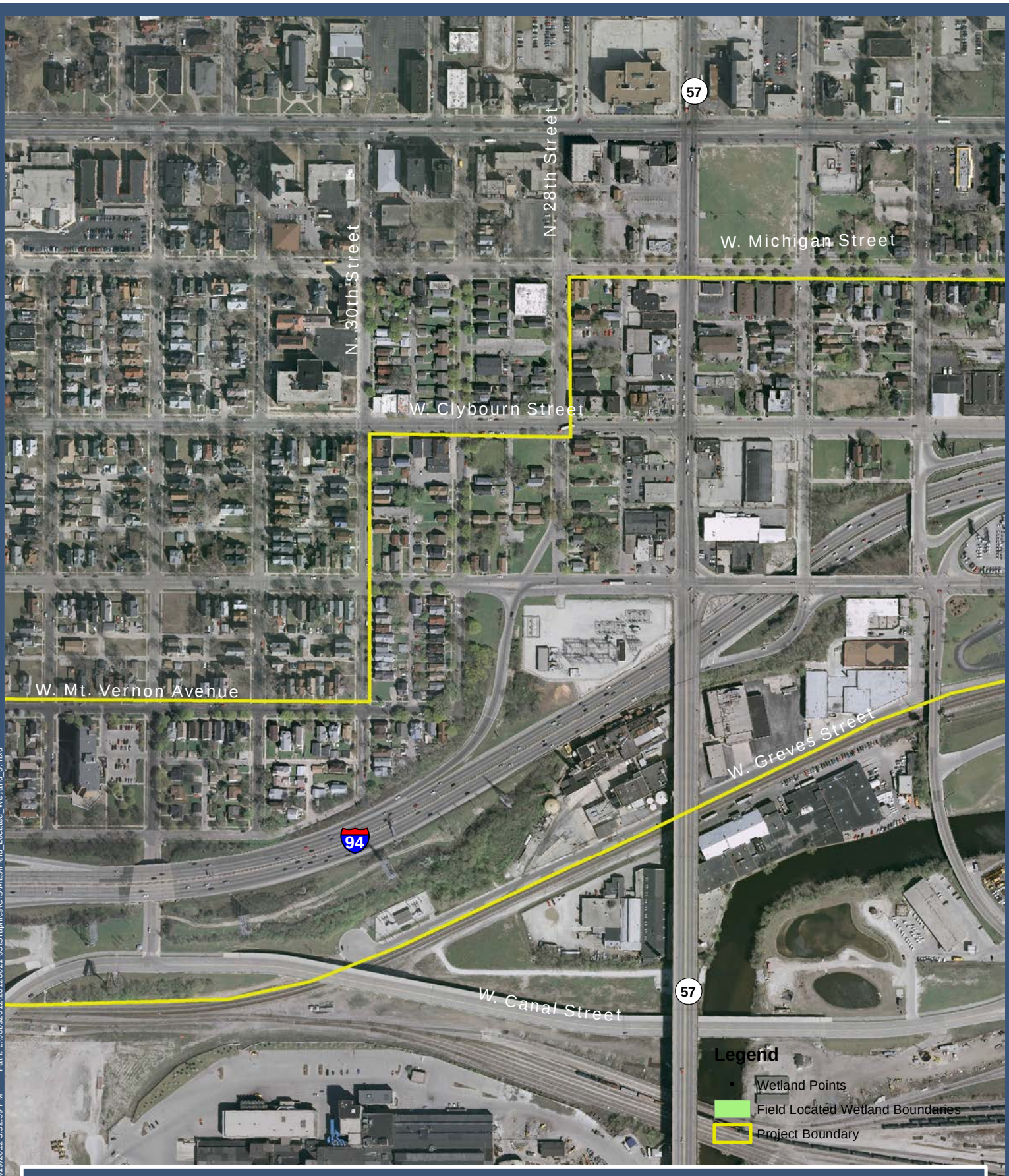
Source: SEWRPC 2010 Aerial Photography



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Feet

1 in = 400 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - Wetland Map

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION
MILWAUKEE, WISCONSIN

FIGURE # 2-6

GRAEF

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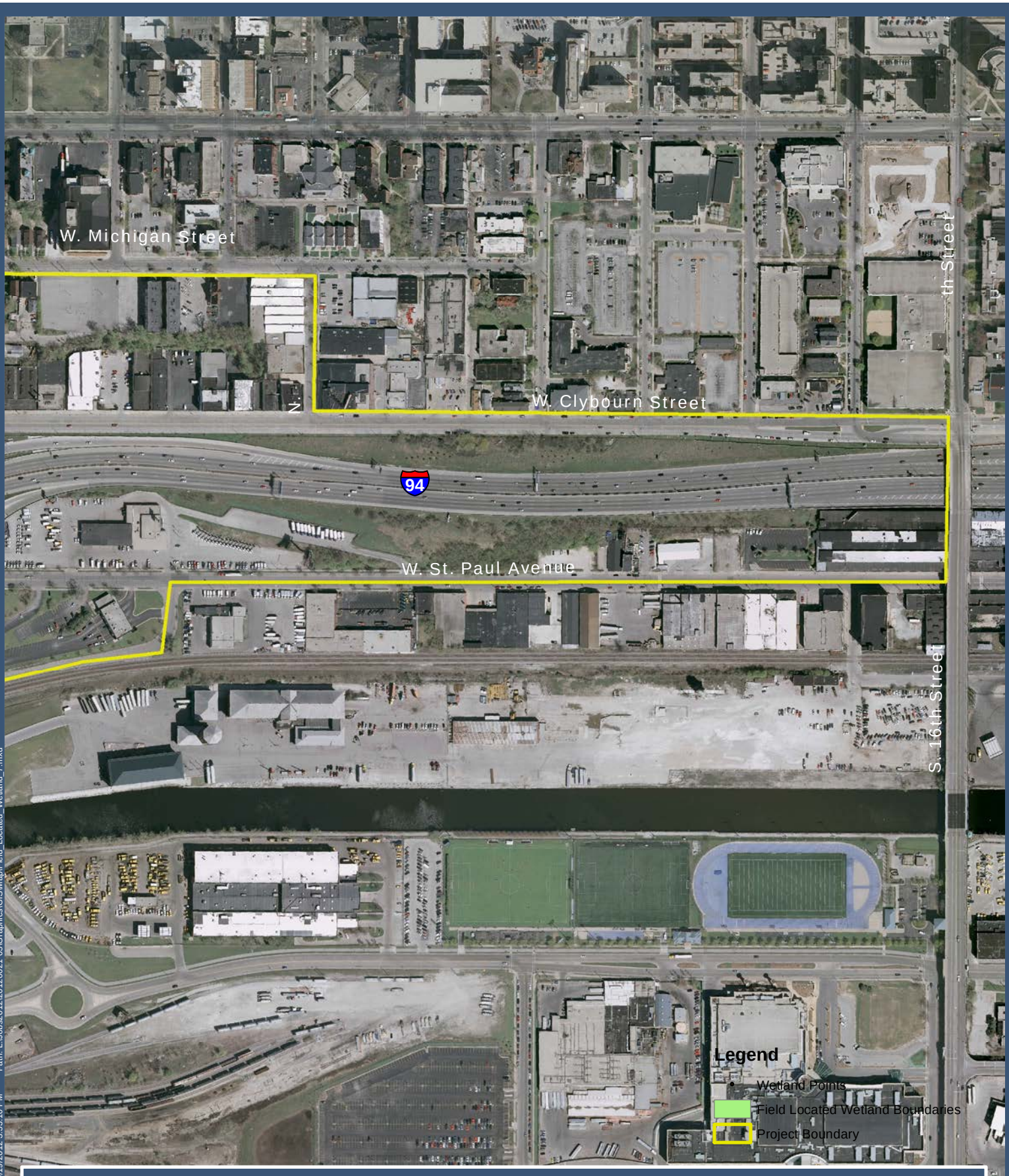
Proj. Number: 2012 0021.05 Source: SEWRPC 2010 Aerial Photography



N
0 125 250 500
Feet
1 in = 400 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - Wetland Map

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION
MILWAUKEE, WISCONSIN

FIGURE # 2-7

GRAEF

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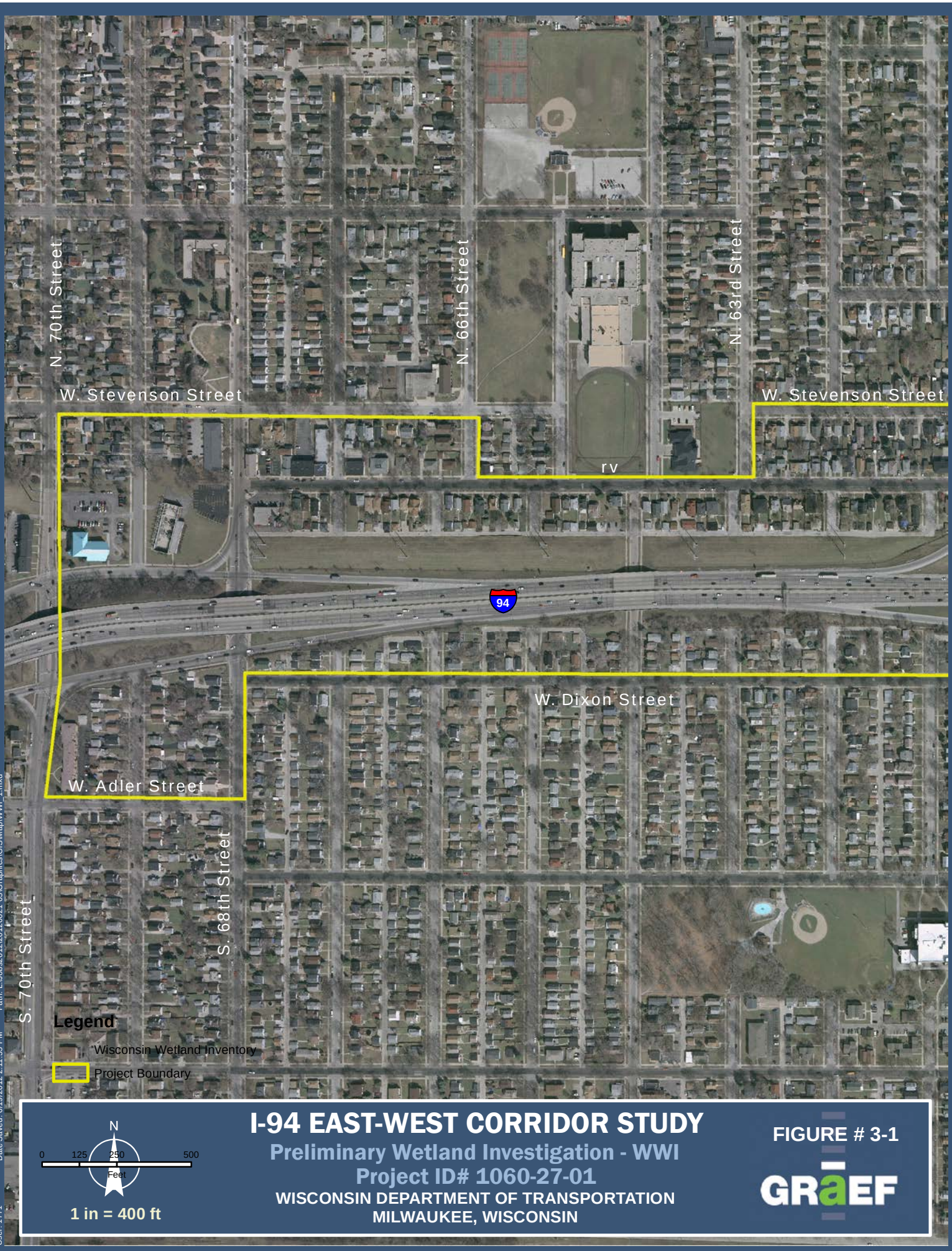
Proj. Number: 2012 0021.05 Source: SEWRPC 2010 Aerial Photography



I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - WWI

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION
MILWAUKEE, WISCONSIN

FIGURE # 3-1

GRAEF

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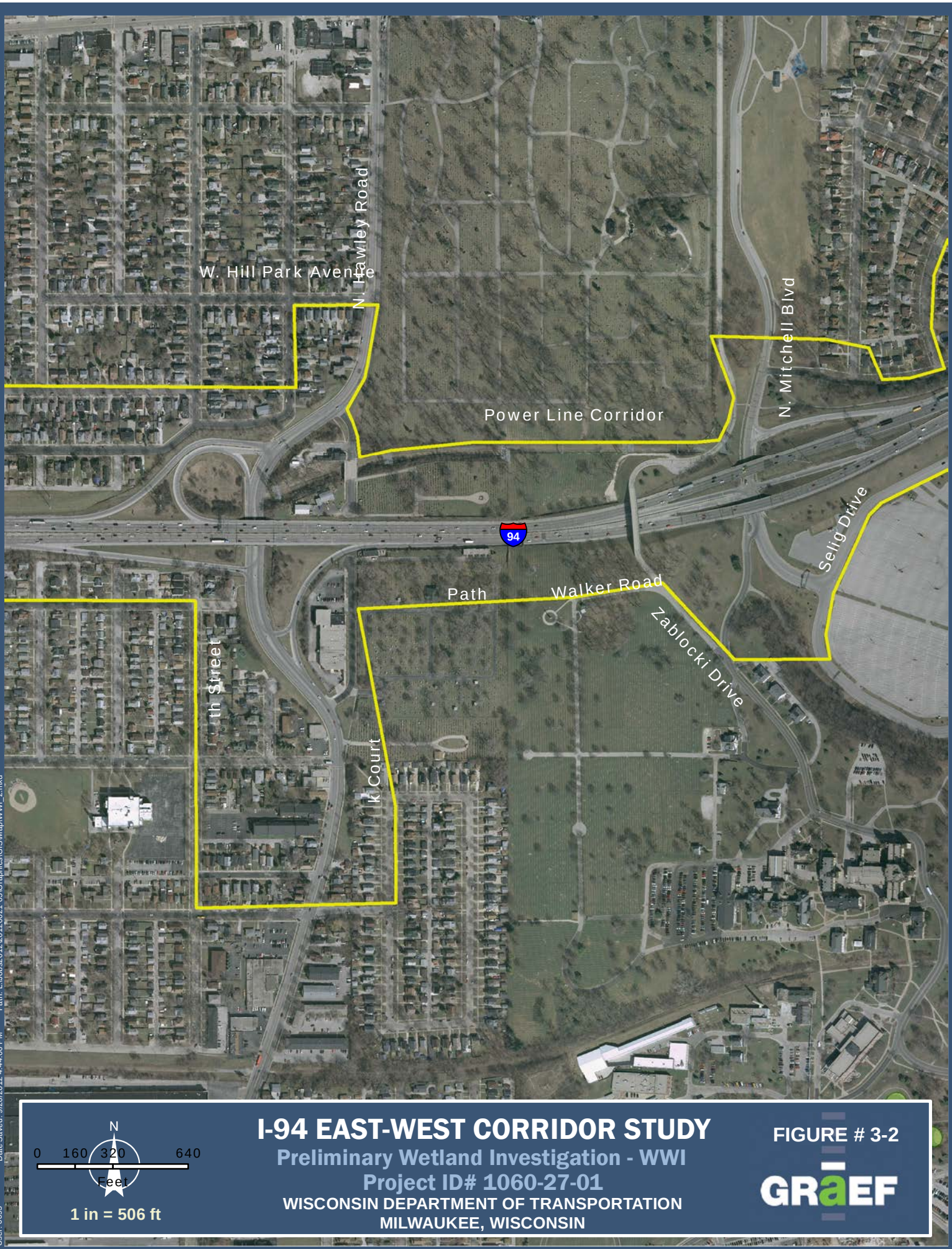
Proj. Number: 2012 0021.05 Source: SEWRPC 2010 Aerial Photography



N
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Feet

1 in = 506 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - WWI

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION

MILWAUKEE, WISCONSIN

FIGURE # 3-2

GRAEF

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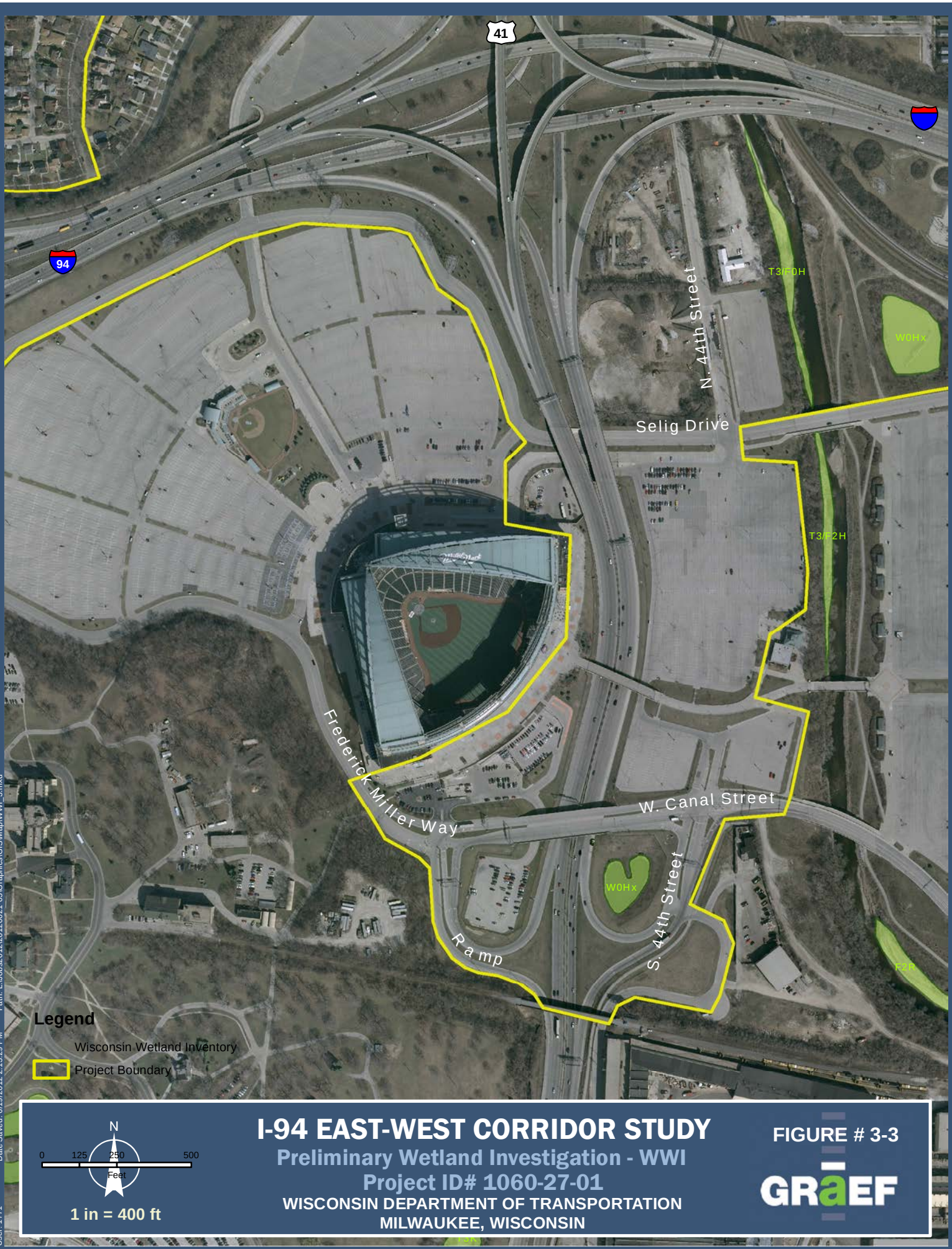
Proj. Number: 2012 0021.05

Source: SEWRPC 2010 Aerial Photography



I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - WWI

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION

MILWAUKEE, WISCONSIN

FIGURE # 3-3

GRAEF

Path: L:\Jobs2012\20120021 05\Graphics\GIS\MapWWI_3.mxd

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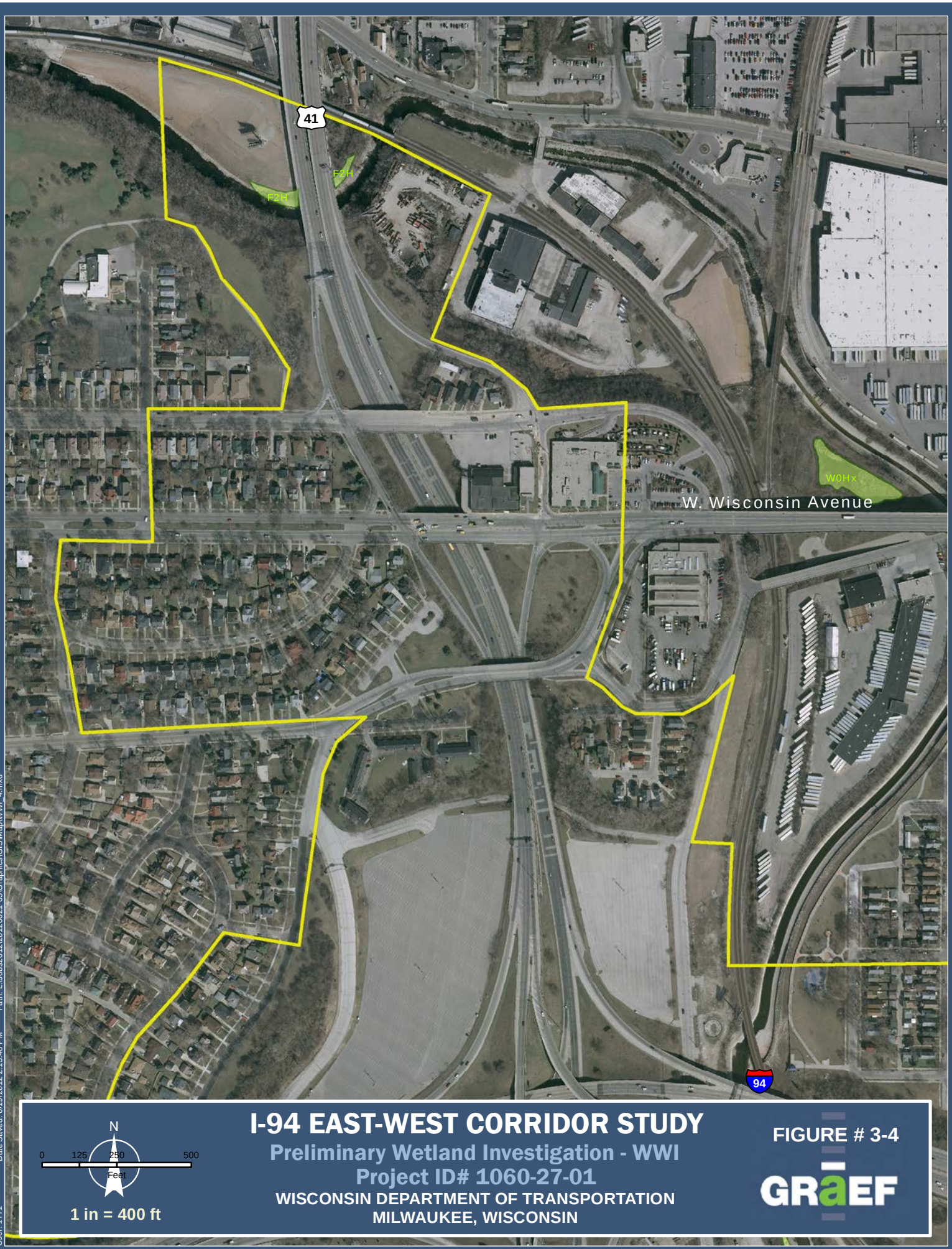
User: 1771

Proj. Number: 2012 0021.05

Source: SEWRPC 2010 Aerial Photography



N

0 125 250 500

Feet

1 in = 400 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - WWI

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION

MILWAUKEE, WISCONSIN

FIGURE # 3-4

GRAEF

Date Saved: 6/19/2012 2:13:48 PM Path: L:\Jobs2012\20120021 05\Graphics\GIS\MapWWI_4.mxd

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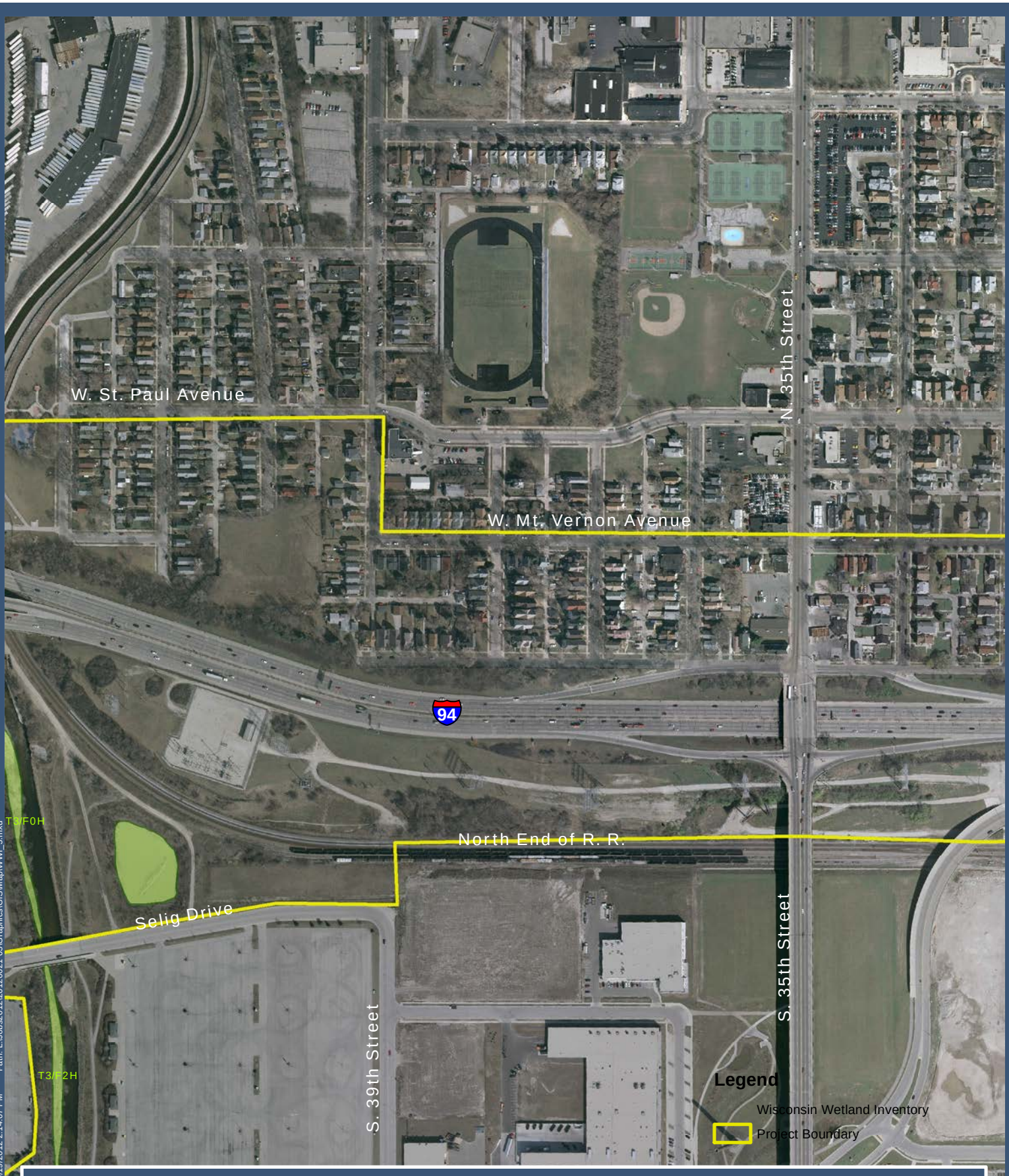

N

0 125 250 500

Feet

1 in = 400 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - WWI

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION

MILWAUKEE, WISCONSIN

FIGURE # 3-5

GRAEF

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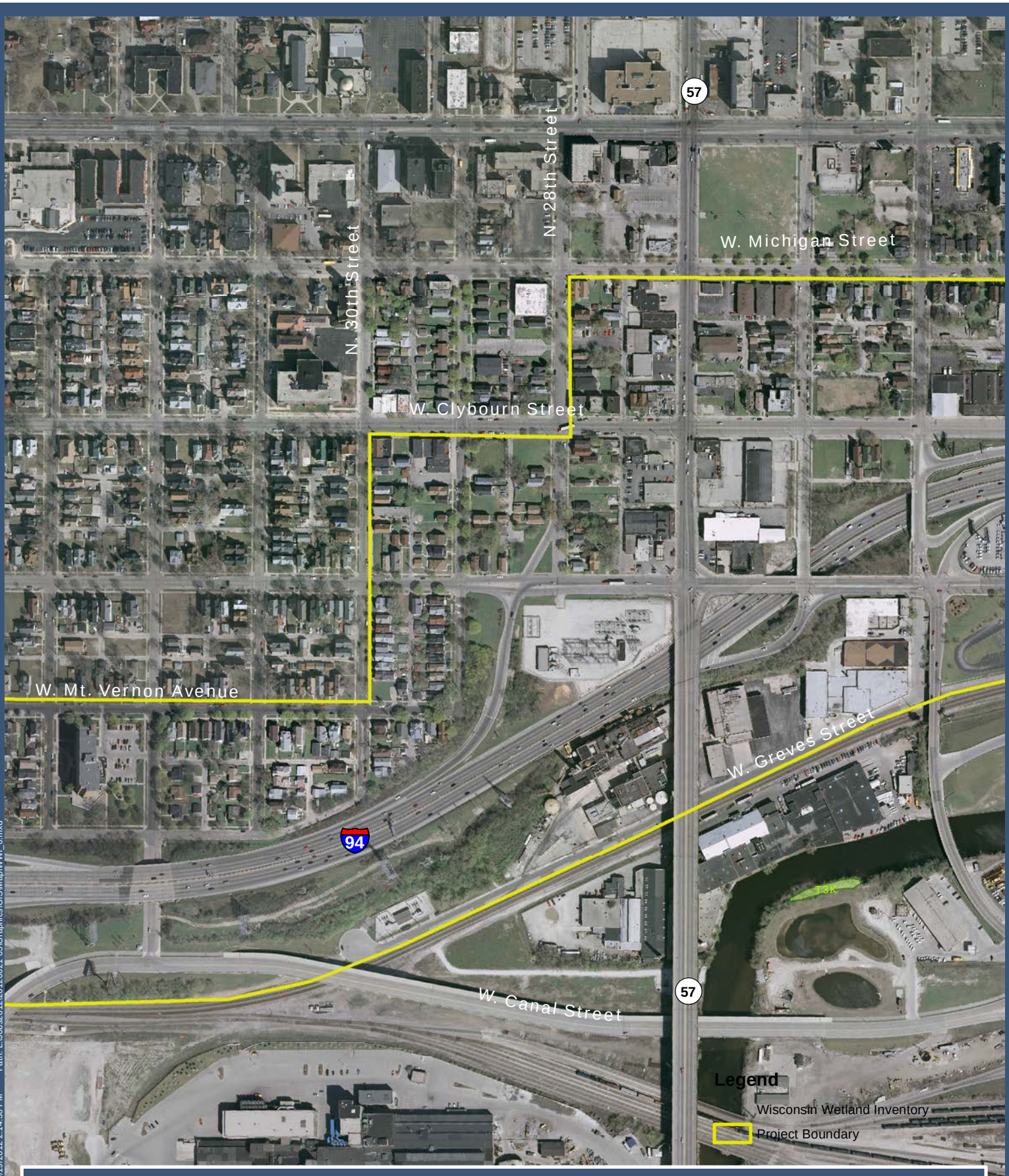
Proj. Number: 2012 0021.05 Source: SEWRPC 2010 Aerial Photography



N

0 125 250 500

Feet

1 in = 400 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - WWI

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION

MILWAUKEE, WISCONSIN

FIGURE # 3-6

GRAEF

Path: L:\Jobs2012\20120021 05\Graphics\GIS\MapWWI_6.mxd

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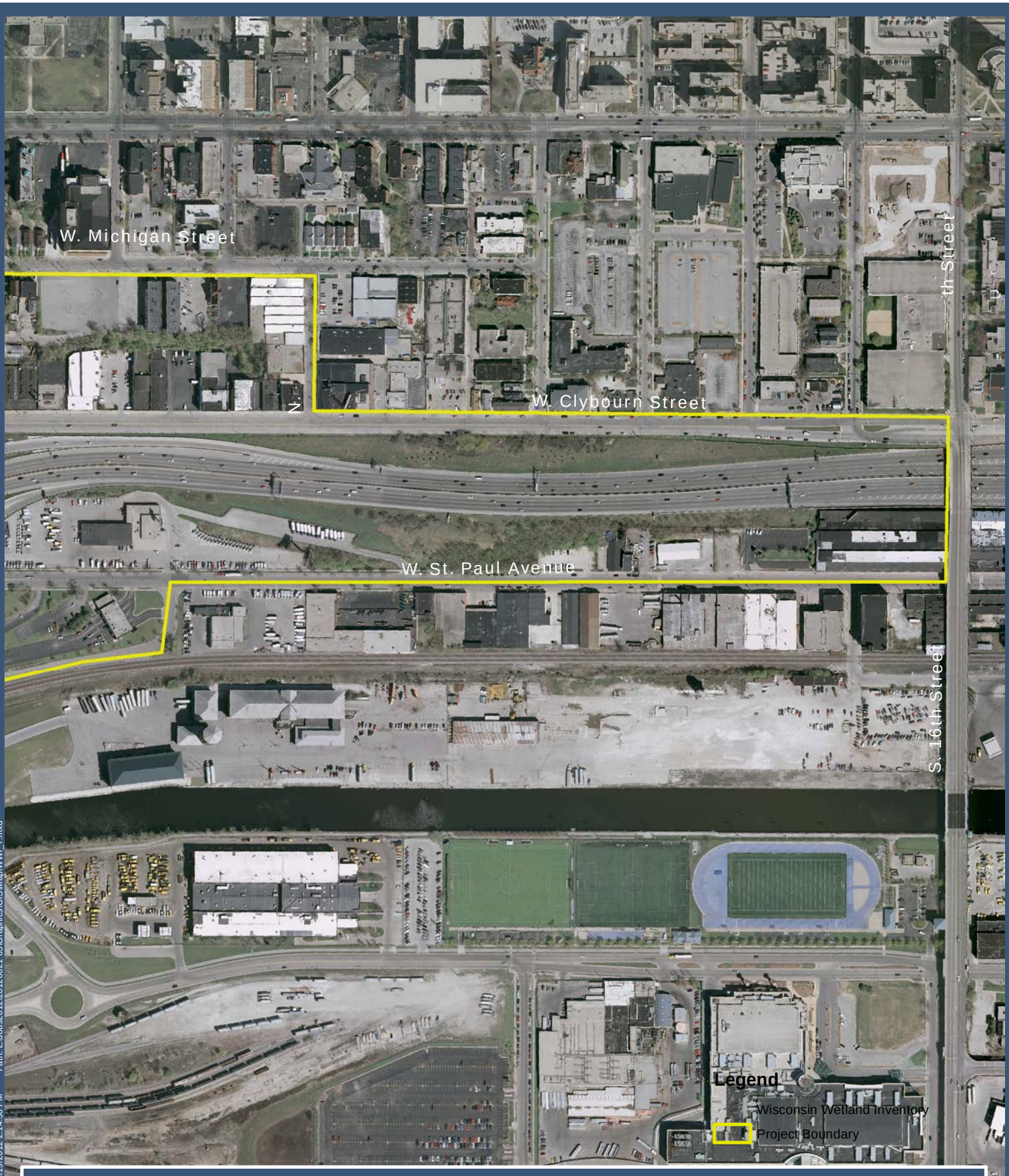
User: 1771

Proj. Number: 2012 0021.05

Source: SEWRPC 2010 Aerial Photography



N
0 125 250 500
Feet
1 in = 400 ft

I-94 EAST-WEST CORRIDOR STUDY

Preliminary Wetland Investigation - WWI

Project ID# 1060-27-01

WISCONSIN DEPARTMENT OF TRANSPORTATION
MILWAUKEE, WISCONSIN

FIGURE # 3-7

GRAEF

Path: L:\Jobs2012\20120021 05\Graphics\GIS\Map\WWI_7.mxd
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User: 1771

Proj. Number: 2012 0021.05 Source: SEWRPC 2010 Aerial Photography

APPENDIX B

Plant Community Lists

GENERAL NOTES FOR PLANT LISTS
Indicator Category Information

The representative vascular plant species for the wetlands are listed in the following tables, along with their indicator categories. The indicator category information was obtained from the National Wetland Plant List Midwest Region or North Central / North East Region. The indicator category designates the expected frequency of occurrence of a given plant species in wetlands of the Midwest Region on the North Central / North East Region of the United States (the specific region is indicated on each list). The following is an explanation of the indicator category designation:

Indicator Category of Occurrence	Expected Frequency
OBL	≥ 99%
FACW	98% - 67%
FAC	33% - 66%
FACU	32% - 2%
UPL	≤ 1%

Wisconsin Floristic Quality Assessment (WFQA)

The *Wisconsin Floristic Quality Assessment* method (Wisconsin Dept. of Natural Resources, 2001 - WFQA) was used to quantitatively determine the floristic quality of the plant communities described within and adjacent to the wetlands in the study area. This method follows Swink & Wilhelm (1994) and is used as a rapid indicator of the ecological quality of plant communities. The WFQA uses numerical ratings between 0 and 10 ("C" values) assigned to each native plant species in Wisconsin based upon the probability it was found in a relatively intact and undisturbed plant community found in Wisconsin. The higher the number, the more likely that species was found in a high quality natural area. The average of the sum of all C Values for each recorded species is the "mean C value" which indicates overall relative disturbance the native plant community has undergone since pre-settlement conditions of the 1800's. The mean C value multiplied by the square root of the number of species recorded provides a Floristic Quality Index (FQI), which also provides an indicator of species richness. According to the authors of the original methodology (Swink and Wilhelm, 1994), an FQI value below than 20 generally indicates a disturbed plant community with a low probability of being ecologically significant. An FQI value above 20 generally indicates a plant community that is relatively undisturbed and possesses high floristic qualities, but may not be ecologically significant. The authors believe that an FQI above 35 is rare and indicates that a plant community has ecological significance.

References:

Swink, F. and G. Wilhelm (1994). *Plants of the Chicago Region*, 4th ed., Indiana Academy of Science, Indianapolis, 921 pp.
Bernthal, Tom (June 2003). *Development of a Floristic Quality Assessment for Wisconsin,* WDNR – Bureau of Fisheries Management and Habitat Protection, 22 pp.

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: W-1 **Observer(s):** Ron Londre, Geof Parish

Community Classification: **Region:** MW

WWI: WOHx

WisDOT: RPE, SS, AB

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
	X	*Agrimonia gryposepala*	common agrimony	FACU	2
	X	*Ambrosia artemisiifolia*	annual bur-sage	FACU	0
	X	*Asclepias incarnata*	swamp milkweed	OBL	5
	X	*Bidens frondosa*	Devil's-Pitchfork	FACW	
	X	*Carex blanda*	common wood sedge	FAC	3
	X	*Carex hystericina*	bottlebrush sedge	OBL	3
	X	*Carex lacustris*	common lake sedge	OBL	6
X	X	*Carex vulpinoidea*	brown fox sedge	FACW	2
		Coronilla varia	crown-vetch	NI	
		Daucus carota	Queen Anne's-lace	NI	
X	X	*Eleocharis obtusa*	blunt spike-rush	OBL	3
	X	*Euthamia graminifolia*	grass-leaved goldenrod	FACW	4
	X	*Fragaria virginiana*	thick-leaved wild strawberry	FACU	1
	X	*Geum aleppicum*	yellow avens	FACW	3
		Juncus compressus	round-fruited rush	OBL	
X	X	*Juncus dudleyi*	Dudley's rush	FACW	4
	X	*Leersia oryzoides*	rice cut grass	OBL	3
		Lotus corniculatus	bird's-foot deer-vetch	FACU	
		Lythrum salicaria	purple loosestrife	OBL	
		Morus alba	Russian mulberry	FAC	
	X	*Parthenocissus quinquefolia*	Virginia creeper	FACU	5
		Phalaris arundinacea	reed canary grass	FACW	
		Plantago lanceolata	English plantain	FACU	
		Poa pratensis	Kentucky bluegrass	FAC	
	X	*Populus deltoides*	plains cottonwood	FAC	2
	X	*Salix discolor*	pussy willow	FACW	2
X	X	*Salix interior*	Sandbar Willow	FACW	2
	X	*Schoenoplectus tabernaemontani*	great bulrush	OBL	4
	X	*Scirpus cyperinus*	wool-grass	OBL	4
	X	*Scutellaria lateriflora*	blue skullcap	OBL	5
	X	*Solidago gigantea*	giant goldenrod	FACW	3
	X	*Symphyotrichum novae-angliae*	New England aster	FACW	3
	X	*Urtica dioica*	stinging nettle	FACW	1
	X	*Vitis riparia*	river-bank grape	FACW	2

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-1** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification:

WWI: **WOHx**

WisDOT: **RPE, SS, AB**

Region: MW

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
				∑ =	72
				N =	25
				$\overline{C} \cong$	2.88
				FQI =	14.40

$$FQI \cong \overline{C}\sqrt{N}$$

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: W-2 **Observer(s):** Ron Londre, Geof Parish

Community Classification: **Region:** MW

WWI: T3/F0H

WisDOT: RPF, AB

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
	X	*Acer negundo*	box elder	FAC	0
	X	*Acer saccharinum*	silver maple	FACW	2
	X	*Ageratina altissima*	White Snakeroot	FACU	1
		Alliaria petiolata	garlic mustard	FAC	
	X	*Ambrosia artemisiifolia*	annual bur-sage	FACU	0
X	X	*Ambrosia trifida*	giant ragweed	FAC	0
		Arctium minus	common burdock	FACU	
		Cirsium arvense	Canada thistle	FACU	
	X	*Erigeron philadelphicus*	common fleabane	FACW	2
X	X	*Fraxinus pennsylvanica*	green ash	FACW	2
	X	*Geum aleppicum*	yellow avens	FACW	3
		Hesperis matronalis	dame's rocket	FACU	
		Juncus compressus	round-fruited rush	OBL	
	X	*Juncus dudleyi*	Dudley's rush	FACW	4
		Leonurus cardiaca	lion's-tail	NI	
X		*Lysimachia nummularia*	creeping-Charlie	FACW	
		Lythrum salicaria	purple loosestrife	OBL	
		Melilotus officinalis	yellow sweet-clover	FACU	
		Morus alba	Russian mulberry	FAC	
	X	*Parthenocissus quinquefolia*	Virginia creeper	FACU	5
	X	*Persicaria pensylvanica*	Pinkweed	FACW	1
X		*Phalaris arundinacea*	reed canary grass	FACW	
		Poa compressa	Canada bluegrass	FACU	
		Rhamnus cathartica	common buckthorn	FAC	
		Salix babylonica	weeping willow	FACW	
X	X	*Solidago gigantea*	giant goldenrod	FACW	3
X	X	*Symphyotrichum lateriflorus*	calico aster	FACW	3
	X	*Thalictrum thalictroides*	rue-anemone	FACU	7
	X	*Ulmus americana*	American elm	FACW	3
		Ulmus pumila	Siberian elm	UPL	
	X	*Urtica dioica*	stinging nettle	FACW	1
	X	*Viola sororia*	door-yard violet	FAC	3
	X	*Vitis riparia*	river-bank grape	FACW	2
				∑ =	42

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-2** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **T3/F0H**

WisDOT: **RPF, AB**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
			$FQI \cong \overline{C}\sqrt{N}$	N =	18
				$\overline{C} \cong$	2.33
				FQI =	9.90

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: W-3 **Observer(s):** Ron Londre, Geof Parish

Community Classification: **Region:** MW

WWI: W0Hx

WisDOT: RPE, AB

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
		Cirsium arvense	Canada thistle	FACU	
	X	*Eupatorium altissimum*	upland boneset	NI	4
	X	*Helenium autumnale*	common sneezeweed	FACW	4
	X	*Juncus dudleyi*	Dudley's rush	FACW	4
		Leucanthemum vulgare	ox-eye daisy	NI	
		Lotus corniculatus	bird's-foot deer-vetch	FACU	
		Lythrum salicaria	purple loosestrife	OBL	
		Melilotus officinalis	yellow sweet-clover	FACU	
	X	*Oenothera biennis*	bastard evening-primrose	FACU	1
		Phalaris arundinacea	reed canary grass	FACW	
	X	*Pycnanthemum virginianum*	common mountain mint	FACW	6
		Rumex crispus	curly dock	FAC	
	X	*Salix interior*	Sandbar Willow	FACW	2
	X	*Salix nigra*	black willow	OBL	4
	X	*Schoenoplectus tabernaemontani*	great bulrush	OBL	4
	X	*Solidago gigantea*	giant goldenrod	FACW	3
	X	*Symphyotrichum novae-angliae*	New England aster	FACW	3
	X	*Thalictrum dasycarpum*	purple meadow-rue	FACW	4
X		*Typha angustifolia*	narrow-leaved cat-tail	OBL	
	X	*Urtica dioica*	stinging nettle	FACW	1

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ = 40

N = 12

$\overline{C} \cong$ 3.33

FQI = 11.55

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-4** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
		Cirsium arvense	Canada thistle	FACU	
		Elymus repens	quackgrass	FACU	
		Lotus corniculatus	bird's-foot deer-vetch	FACU	
X		*Phalaris arundinacea*	reed canary grass	FACW	
X		*Poa pratensis*	Kentucky bluegrass	FAC	
X		*Rumex crispus*	curly dock	FAC	
	X	*Symphyotrichum novae-angliae*	New England aster	FACW	3

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ =	3
N =	1
$\overline{C} \cong$	3.00
FQI =	3.00

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-5** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
		Agrostis gigantea	redtop	FACW	
		Bromus inermis	smooth brome	FACU	
		Cirsium arvense	Canada thistle	FACU	
		Daucus carota	Queen Anne's-lace	NI	
X	X	*Leersia oryzoides*	rice cut grass	OBL	3
		Phalaris arundinacea	reed canary grass	FACW	
X		*Poa pratensis*	Kentucky bluegrass	FAC	
		Rumex crispus	curly dock	FAC	
	X	*Symphyotrichum novae-angliae*	New England aster	FACW	3
				$\sum$ =	6
				N =	2
				$\overline{C} \cong$	3.00
				FQI =	4.24

$$FQI \cong \overline{C}\sqrt{N}$$

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-6** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
		Alliaria petiolata	garlic mustard	FAC	
	X	*Asclepias syriaca*	common milkweed	FACU	1
		Cirsium arvense	Canada thistle	FACU	
		Hesperis matronalis	dame's rocket	FACU	
		Leonurus cardiaca	lion's-tail	NI	
		Lysimachia nummularia	creeping-Charlie	FACW	
		Nepeta cataria	catnip	FACU	
X		*Phalaris arundinacea*	reed canary grass	FACW	
	X	*Rhus glabra*	smooth sumac	NI	2
		Rumex crispus	curly dock	FAC	
	X	*Vitis riparia*	river-bank grape	FACW	2
				$\sum$ =	5
				N =	3
				$\overline{C} \cong$	1.67
				FQI =	2.89

$$FQI \cong \overline{C}\sqrt{N}$$

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-7** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
		Agrostis gigantea	redtop	FACW	
		Alliaria petiolata	garlic mustard	FAC	
		Arctium minus	common burdock	FACU	
	X	*Asclepias verticillata*	whorled milkweed	FACU	2
		Brassica nigra	black mustard	NI	
		Bromus inermis	smooth brome	FACU	
		Cirsium arvense	Canada thistle	FACU	
		Cirsium vulgare	bull thistle	FACU	
		Leucanthemum vulgare	ox-eye daisy	NI	
		Nepeta cataria	catnip	FACU	
X		*Phalaris arundinacea*	reed canary grass	FACW	
		Poa compressa	Canada bluegrass	FACU	
	X	*Symphyotrichum novae-angliae*	New England aster	FACW	3
		Thlaspi arvense	field pennycress	FACU	
X		*Typha x glauca*	hybrid cat-tail	OBL	

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ =	5
N =	2
$\overline{C} \cong$	2.50
FQI =	3.54

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-8** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
X		*Typha angustifolia*	narrow-leaved cat-tail	OBL	

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ =	0
N =	0
$\overline{C} \cong$	0
FQI =	0

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: W-9 **Observer(s):** Ron Londre, Geof Parish

Community Classification: **Region:** MW

WWI: Not Indicated

WisDOT: M, SS

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
		Agrostis gigantea	redtop	FACW	
	X	*Andropogon gerardii*	big blue-stem	FAC	4
	X	*Carex vulpinoidea*	brown fox sedge	FACW	2
		Cirsium vulgare	bull thistle	FACU	
		Daucus carota	Queen Anne's-lace	NI	
	X	*Eleocharis obtusa*	blunt spike-rush	OBL	3
X	X	*Equisetum arvense*	common horsetail	FAC	1
	X	*Erigeron philadelphicus*	common fleabane	FACW	2
	X	*Eupatorium perfoliatum*	boneset	OBL	6
	X	*Helenium autumnale*	common sneezeweed	FACW	4
X	X	*Juncus dudleyi*	Dudley's rush	FACW	4
		Leucanthemum vulgare	ox-eye daisy	NI	
		Lythrum salicaria	purple loosestrife	OBL	
	X	*Monarda fistulosa*	bee balm	FACU	3
	X	*Parthenocissus quinquefolia*	Virginia creeper	FACU	5
		Pastinaca sativa	wild parsnip	NI	
		Penstemon digitalis	false foxglove	FAC	
		Phalaris arundinacea	reed canary grass	FACW	
		Plantago lanceolata	English plantain	FACU	
	X	*Rudbeckia hirta*	black-eyed Susan	FACU	4
		Rumex crispus	curly dock	FAC	
X	X	*Salix interior*	Sandbar Willow	FACW	2
	X	*Salix nigra*	black willow	OBL	4
	X	*Scutellaria lateriflora*	blue skullcap	OBL	5
	X	*Silphium laciniatum*	compass-plant	NI	8
	X	*Silphium perfoliatum*	cup-plant	FACW	4
	X	*Solidago canadensis*	Canadian goldenrod	FACU	1
	X	*Solidago gigantea*	giant goldenrod	FACW	3
	X	*Symphyotrichum ciliolatus*	Lindley's aster	NI	4
	X	*Symphyotrichum novae-angliae*	New England aster	FACW	3
	X	*Toxicodendron radicans*	common eastern poison-ivy	FAC	4
X		*Typha angustifolia*	narrow-leaved cat-tail	OBL	
	X	*Urtica dioica*	stinging nettle	FACW	1
	X	*Vitis riparia*	river-bank grape	FACW	2

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-9** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M, SS**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
				∑ =	79
				N =	23
				$\overline{C} \cong$	3.43
				FQI =	16.47

$$FQI \cong \overline{C}\sqrt{N}$$

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-10** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
X		*Poa pratensis*	Kentucky bluegrass	FAC	
		Bromus inermis	smooth brome	FACU	
		Cirsium arvense	Canada thistle	FACU	
		Nepeta cataria	catnip	FACU	
		Phalaris arundinacea	reed canary grass	FACW	

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ =	0
N =	0
$\overline{C} \cong$	0
FQI =	0

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: W-11 **Observer(s):** Ron Londre, Geof Parish

Community Classification: **Region:** MW

WWI: Not Indicated

WisDOT: M

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
	X	*Agrimonia gryposepala*	common agrimony	FACU	2
		Agrostis gigantea	redtop	FACW	
		Alliaria petiolata	garlic mustard	FAC	
	X	*Carex vulpinoidea*	brown fox sedge	FACW	2
		Cirsium arvense	Canada thistle	FACU	
		Cirsium vulgare	bull thistle	FACU	
		Daucus carota	Queen Anne's-lace	NI	
	X	*Fraxinus pennsylvanica*	green ash	FACW	2
	X	*Glyceria striata*	fowl manna grass	OBL	4
	X	*Impatiens capensis*	orange jewelweed	FACW	2
X	X	*Juncus canadensis*	Canadian rush	OBL	7
X	X	*Juncus dudleyi*	Dudley's rush	FACW	4
	X	*Leersia oryzoides*	rice cut grass	OBL	3
		Lysimachia nummularia	creeping-Charlie	FACW	
		Nepeta cataria	catnip	FACU	
	X	*Parthenocissus quinquefolia*	Virginia creeper	FACU	5
		Phalaris arundinacea	reed canary grass	FACW	
		Plantago lanceolata	English plantain	FACU	
X		*Poa pratensis*	Kentucky bluegrass	FAC	
		Rhamnus cathartica	common buckthorn	FAC	
	X	*Scirpus atrovirens*	dark-green bulrush	OBL	3
		Solanum dulcamara	bittersweet nightshade	FAC	
	x	*Juncus alpinoarticulatus*	northern green rush	OBL	6
	X	*Viola sororia*	door-yard violet	FAC	3
	X	*Vitis riparia*	river-bank grape	FACW	2

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ = 45

N = 13

$\overline{C} \cong$ 3.46

FQI = 12.48

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-12** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
X		*Agrostis gigantea*	redtop	FACW	
		Cirsium arvense	Canada thistle	FACU	
X	X	*Eleocharis obtusa*	blunt spike-rush	OBL	3
		Lysimachia nummularia	creeping-Charlie	FACW	
		Nepeta cataria	catnip	FACU	
X		*Poa pratensis*	Kentucky bluegrass	FAC	
		Rhamnus cathartica	common buckthorn	FAC	
	X	*Scirpus microcarpus*	panicled bulrush	OBL	6

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ =	9
N =	2
$\overline{C} \cong$	4.50
FQI =	6.36

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-13** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
	X	*Acer negundo*	box elder	FAC	0
	X	*Bidens cernua*	Nodding Burr-Marigold	OBL	4
		Daucus carota	Queen Anne's-lace	NI	
X	X	*Eleocharis obtusa*	blunt spike-rush	OBL	3
	X	*Juncus canadensis*	Canadian rush	OBL	7
		Lysimachia nummularia	creeping-Charlie	FACW	
		Nepeta cataria	catnip	FACU	
	X	*Persicaria pensylvanica*	Pinkweed	FACW	1
		Plantago lanceolata	English plantain	FACU	
X		*Poa pratensis*	Kentucky bluegrass	FAC	
		Rumex crispus	curly dock	FAC	
		Solanum dulcamara	bittersweet nightshade	FAC	

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ = 15

N = 5

$\overline{C} \cong$ 3.00

FQI = 6.71

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-14** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
X		*Agrostis gigantea*	redtop	FACW	
		Cirsium arvense	Canada thistle	FACU	
		Cirsium vulgare	bull thistle	FACU	
		Coronilla varia	crown-vetch	NI	
		Elymus repens	quackgrass	FACU	
X		*Poa pratensis*	Kentucky bluegrass	FAC	

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ =	0
N =	0
$\overline{C} \cong$	0
FQI =	0

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-15** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **Not Indicated**

WisDOT: **M**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
	X	*Asclepias verticillata*	whorled milkweed	FACU	2
		Cirsium arvense	Canada thistle	FACU	
		Coronilla varia	crown-vetch	NI	
		Elymus repens	quackgrass	FACU	
		Nepeta cataria	catnip	FACU	
	X	*Parthenocissus quinquefolia*	Virginia creeper	FACU	5
X		*Phalaris arundinacea*	reed canary grass	FACW	
X		*Poa pratensis*	Kentucky bluegrass	FAC	
	X	*Rhus hirta*	staghorn sumac	NI	2
		Rumex crispus	curly dock	FAC	
		Thlaspi arvense	field pennycress	FACU	

$$FQI \cong \overline{C}\sqrt{N}$$

$\sum$ =	9
N =	3
$\overline{C} \cong$	3.00
FQI =	5.20

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: W-16 **Observer(s):** Ron Londre, Geof Parish

Community Classification: **Region:** MW

WWI: FH2

WisDOT: M, RPF, RPE

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
	X	*Acer negundo*	box elder	FAC	0
	X	*Acer saccharinum*	silver maple	FACW	2
	X	*Ageratina altissima*	White Snakeroot	FACU	1
		Agrostis gigantea	redtop	FACW	
		Alliaria petiolata	garlic mustard	FAC	
	X	*Ambrosia trifida*	giant ragweed	FAC	0
		Brassica nigra	black mustard	NI	
	X	*Carex cristatella*	crested oval sedge	FACW	4
	X	*Carex scoparia*	broom sedge	FACW	4
	X	*Carex vulpinoidea*	brown fox sedge	FACW	2
		Cirsium arvense	Canada thistle	FACU	
		Cirsium vulgare	bull thistle	FACU	
	X	*Conyza canadensis*	Canadian horseweed	FACU	0
		Daucus carota	Queen Anne's-lace	NI	
		Elymus repens	quackgrass	FACU	
	X	*Erigeron philadelphicus*	common fleabane	FACW	2
	X	*Eupatorium altissimum*	upland boneset	NI	4
X	X	*Fraxinus pennsylvanica*	green ash	FACW	2
	X	*Helenium autumnale*	common sneezeweed	FACW	4
		Hordeum jubatum	foxtail barley	FAC	
		Leucanthemum vulgare	ox-eye daisy	NI	
		Lotus corniculatus	bird's-foot deer-vetch	FACU	
		Lysimachia nummularia	creeping-Charlie	FACW	
		Lythrum salicaria	purple loosestrife	OBL	
		Melilotus officinalis	yellow sweet-clover	FACU	
		Morus alba	Russian mulberry	FAC	
	X	*Oenothera biennis*	bastard evening-primrose	FACU	1
X	X	*Panicum virgatum*	switch grass	FAC	4
X		*Persicaria maculosa*	Lady's-Thumb	FACW	
	X	*Persicaria pensylvanica*	Pinkweed	FACW	1
		Phalaris arundinacea	reed canary grass	FACW	
		Plantago lanceolata	English plantain	FACU	
		Poa compressa	Canada bluegrass	FACU	
X		*Poa pratensis*	Kentucky bluegrass	FAC	

FLORISTIC QUALITY ASSESSMENT

I-94 East-West Corridor WisDOTID# 1060-27-01

GRAEF PN 2012-0021.05

June 2012

Wetland ID: **W-16** **Observer(s):** **Ron Londre, Geof Parish**

Community Classification: **Region:** MW

WWI: **FH2**

WisDOT: **M, RPF, RPE**

Dominant	Native	Scientific Name	Common Name	Indicator Status	WI C-Value
		Rhamnus cathartica	common buckthorn	FAC	
		Rumex crispus	curly dock	FAC	
	X	*Salix nigra*	black willow	OBL	4
	X	*Sambucus canadensis*	American elder	NI	3
	X	*Scirpus atrovirens*	dark-green bulrush	OBL	3
		Solanum dulcamara	bittersweet nightshade	FAC	
		Sonchus arvensis	field sow-thistle	FACU	
	X	*Symphyotrichum novae-angliae*	New England aster	FACW	3
	X	*Symphyotrichum sagittifolius*	arrow-leaved aster	NI	3
		Taraxacum officinale	common dandelion	FACU	
		Thlaspi arvense	field pennycress	FACU	
		Trifolium pratense	red clover	FACU	
	X	*Ulmus americana*	American elm	FACW	3
		Ulmus pumila	Siberian elm	UPL	
	X	*Urtica dioica*	stinging nettle	FACW	1
	X	*Vitis riparia*	river-bank grape	FACW	2
	X	*Xanthium strumarium*	common cocklebur	FAC	1
				$\sum$ =	54
				N =	24
				$\overline{C} \cong$	2.25
				FQI =	11.02

$$FQI \cong \overline{C}\sqrt{N}$$

APPENDIX C

Site Photographs on CD

APPENDIX D

Wetland Summary Table

Appendix D
Wetland Information Table
I-94 East-West Corridor
Milwaukee County, WI

Wetland ID	Location Description	Classification[1]	Dominant Plant Species	Floristic Quality Index (FQI)	Mapped Waterway?	Opinion of Jurisdiction (Isolated / Non-Isolated)	WWI Classification	Comments
W-1	NW1/4 NW1/4 S36 T7N R21E	RPE, SS, AB	*Carex vulpinoidea, Eleocharis obtusa, Juncus dudleyi, Salix interior*	14.40	No	Non-Isolated	WOHx	Stormwater detention pond exhibiting wetland criteria, comprosed of a wetland shorline leading to standing water. Appears to be connected to the Menomonee River through oulet structures.
W-2	SW1/4 SW1/4 S25 T7N R21E	RPE, AB	*Ambrosia trifida, Fraxinus pennsylvanica, Lysimachia nummularia, Phalaris arundinacea, Solidago gigantea, Symphyotrichum lateriflorus*	9.90	Yes	Non-Isolated	T3/F0H	Floodplain and mud flats along the Menomonee River, Includes the surface water of the Menomonee River.
W-3	NW1/4 NW1/4 S36 T7N R21E	RPE, AB	*Typha angustifolia*	11.55	No	Non-Isolated	WOHx	Stormwater detention pond exhibiting wetland criteria, comprosed of a wetland shorline leading to standing water. Appears to be connected to the Menomonee River through oulet structures.
W-4	NE1/4 SE1/4 S26 T7N R21E	M, AB	*Phalaris arundinacea, Poa pratensis, Rumex crispus*	3.00	No	Isolated	Not Indicated	Wetland area is a low point where water is trapped between roadway and rail road tracks.
W-5	NE1/4 SE1/4 S26 T7N R21E	M	*Leersia oryzoides, Poa pratensis*	4.24	No	Isolated	Not Indicated	Wetland area is a low point where water is trapped between roadway and rail road tracks. This wetland extends norht outside of the study area.
W-6	NE1/4 SE1/4 S26 T7N R21E	M	*Phalaris arundinacea*	2.89	No	Isolated	Not Indicated	Wetland area is a low point beside US-41 where water is trapped between the highway and an upland area.
W-7	SE1/4 SE1/4 S26 T7N R21E	M	*Asclepias verticillata, Symphyotrichum novae-angliae*	3.54	No	Isolated	Not Indicated	Wetland area is located in a lowpoint in the infield of the interchange where the inlet structure is not located at the lowest point allowing water to pond.
W-8	SE1/4 SE1/4 S26 T7N R21E	M	*Typha angustifolia*	0.00	No	Isolated	Not Indicated	Small wetland less than 20 square feet in size. Located at the bottom of drain that leads to overheead interchange ramp.
W-9	NE1/4 NW1/4 S35 T7N R21E	M, SS	*Equisetum arvense, Juncus dudleyi, Salix interior, Typha angustifolia*	16.47	No	Isolated	Not Indicated	Groundwater fed wetland partially dominated by sandbar willow. Evicence of wetland fill observed. Fill material includes sod and clay soil mixed with cobble.
W-10	NW1/4 NW1/4 S35 T7N R21E	M	*Poa pratensis*	0.00	No	Isolated	Not Indicated	Wetland area is less than 20 square feet in size and surrounds an inlet structure that is elevated slightly above the surrounding grade allowing for water to pond.
W-11	NW1/4 NW1/4 S35 T7N R21E	M	*Juncus canadensis, Juncus dudleyi, Poa pratensis*	12.48	No	Isolated	Not Indicated	Wetland area appears to be ground water fed. It is located within a lowpoint along the transmission line corridor. The wetland area is between the corridor access drive and a concrete retaining wall.

Appendix D
Wetland Information Table
I-94 East-West Corridor
Milwaukee County, WI

Wetland ID	Location Description	Classification[1]	Dominant Plant Species	Floristic Quality Index (FQI)	Mapped Waterway?	Opinion of Jurisdiction (Isolated / Non-Isolated)	WWI Classification	Comments
W-12	NW1/4 NW1/4 S35 T7N R21E	M	*Agrostis gigantea, Eleocharis obtusa, Poa pratensis*	6.36	No	Isolated	Not Indicated	Wetland area appears to be ground water fed. It is located within a lowpoint along the transmission line corridor. The wetland area is between the corridor access drive and a steep slope.
W-13	NW1/4 NW1/4 S35 T7N R21E	M	*Eleocharis obtusa, Poa pratensis*	6.71	No	Isolated	Not Indicated	Wetland area appears to be ground water fed. It is located within a lowpoint along the transmission line corridor. The wetland area is between the corridor access drive and a steep slope.
W-14	SE1/4 SW1/4 S26 T7N R21E	M	*Agrostis gigantea, Poa pratensis*	0.00	No	Isolated	Not Indicated	Wetland area is located between an exit ramp and upland area where water is trapped.
W-15	SE1/4 SW1/4 S26 T7N R21E	M	*Phalaris arundinacea, Poa pratensis*	5.20	No	Isolated	Not Indicated	Wetland area is located bwtween the interstate highway and exit ramp where water moves slowley enough through the swale towards an inlet drain to allow the wetland criteria to have developed.
W-16	SW1/4 NE1/4 S26 T7N R21E	M, RPF, RPE	*Fraxinus pennsylvanica, Panicum virgatum, Persicaria maculosa, Poa pratensis*	11.02	Yes	Non-Isolated	FH2	Area is comprised of the Menomonee River, Sparsley vegetated mudflats, forested emergent aquatic areas, and a new open space area constructed between 2007 and 2010 that is now partially functioning as a wetland.

[1] Wetland type classification based on the *WDOT Wetland Mitigation Banking Technical Guideline* . M = Wet meadow, RPE = Riparian Emergent, RPF = Riparian Wooded, SM = Shallow Marsh, DM= Deep Marsh, WS = Wooded Swamp, SS = Shrub Scrub, AB = Aquatic Bed.