

PROJECT I.D. 1060-33-01
INTERSTATE I-94, I-894, AND U.S. HIGHWAY 45
(ZOO INTERCHANGE)
124TH STREET TO 70TH STREET
LINCOLN AVENUE TO BURLEIGH STREET
MILWAUKEE COUNTY, WISCONSIN

FINAL ENVIRONMENTAL IMPACT STATEMENT
and Section 4(f) Evaluation

Submitted Pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303
by the

U.S. Department of Transportation, Federal Highway Administration
and the

State of Wisconsin Department of Transportation

Cooperating Agency

U.S. Army Corps of Engineers (pursuant to 23 USC 139)
Wisconsin Department of Natural Resources (pursuant to 23 USC 139)

APPROVALS

10/3/2011 [Redacted]
Date For Federal Highway Administration

9/29/2011 [Redacted]
Date For Wisconsin Department of Transportation

CONTACTS FOR ADDITIONAL INFORMATION ABOUT THIS DOCUMENT

Wesley Shemwell
Federal Highway Administration
525 Junction Road, Suite 8000
Madison, WI 53717
Phone: (608) 829-7521

Rebecca Burkel
WisDOT Bureau of Technical Services
P.O. Box 7965
Madison, WI 53707-7965
Phone: (608) 246-5399

ABSTRACT

The Zoo Interchange study area includes I-94 from 124th Street to 70th Street and the north-south U.S. Highway 45/I-894 corridor from Lincoln Avenue to Burleigh Street in Milwaukee County. This freeway corridor has deteriorating pavement, safety issues, and design deficiencies including left-hand entrances and exits and sharp curves. As time passes and traffic increases, safety, pavement, and operations on this corridor will continue to deteriorate. Development growth in the area is expected, increasing traffic volumes 14 to 34 percent by 2035. The Supplemental Draft Environmental Impact Statement (SDEIS) was approved on February 4, 2011. It augmented information contained in the DEIS that was approved on May 20, 2009. The SDEIS was prepared to address a new freeway modernization alternative known as the "Reduced Impacts Alternative" and modified freeway-related improvement options to several arterials, including WIS 100, Watertown Plank Road, and 84th Street, not evaluated in the previous DEIS. This document evaluates the social, environmental, and economic impacts of the No-Build Alternative and a range of Build Alternatives, as well as the extent to which these alternatives address the project's purpose and need.

Comments on this Final EIS are due by November 14, 2011 or 30 days after the Notice of Availability is published in the Federal Register, whichever is later, and should be sent to:

William Mohr, P.E., Major Projects Manager
Wisconsin Department of Transportation, Southeast Region
141 N.W. Barstow Street, Waukesha, WI 53187
dotdtsdsezoo@dot.state.wi.us

National Environmental Policy Act Statement

The National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4332) requires that all federal agencies prepare a detailed Environmental Impact Statement (EIS) for major federal actions that will significantly affect the quality of the human environment. The Federal Highway Administration (FHWA) is therefore required to prepare an EIS for proposals funded under its authority if such proposals are determined to be major actions significantly affecting the quality of the human environment.

The EIS process is carried out in two stages. The **Draft EIS** is circulated for review by federal, state, and local agencies with jurisdiction by law or special expertise, and made available to the public. The Draft EIS must be made available to the public at least 15 days before the public hearing, and no later than the first public hearing notice. A minimum 45-day comment period is provided from the date the Draft EIS availability notice is published in the *Federal Register*. WisDOT must receive agency comments on or before the date listed on the front cover of the Draft EIS unless a time extension is requested and granted by WisDOT. After the Draft EIS comment period has elapsed, work may begin on the Final EIS. For the Zoo Interchange project, a Supplemental Draft Environmental Impact Statement was prepared in order to present a new alternative developed after the Draft EIS was circulated for review.

The **Final EIS** includes the following:

1. Identification of the preferred course of action (alternative) and the basis for its selection.
2. Basic content of the Draft EIS along with any changes, updated information, or additional information as a result of agency and public review.
3. Summary and disposition of substantive comments on social, economic, environmental and engineering aspects resulting from the public hearing/public comment period and agency comments on the Draft EIS.
4. Resolution of environmental issues and documentation of compliance with applicable environmental laws and related requirements.

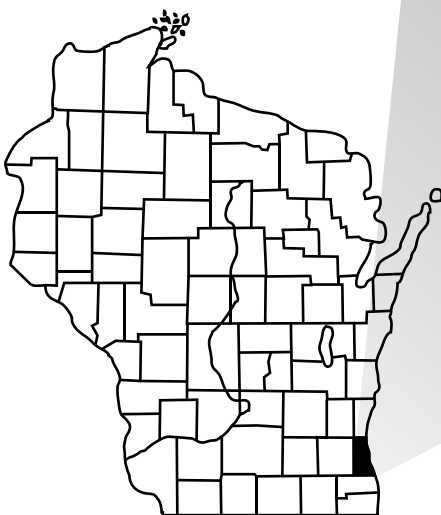
Final administrative action by FHWA (Record of Decision) cannot occur sooner than 90 days after filing the *Draft EIS*, or 30 days after filing the *Final EIS* with the U.S. Environmental Protection Agency (U.S. EPA). The Draft, Supplemental Draft, and Final EIS are full-disclosure documents that provide descriptions of the proposed action, the affected environment, alternatives considered and an analysis of the expected beneficial or adverse environmental effects.

A federal agency may publish a notice in the *Federal Register*, pursuant to 23 USC §139(l), indicating that one or more federal agencies have taken final action on permits, licenses, or approvals for a transportation project. If such notice is published, claims seeking judicial review of those federal agency actions will be barred unless such claims are filed within 180 days after the date of publication of the notice, or within such shorter time period as is specified in the federal laws pursuant to which judicial review of the federal agency action is allowed. If no notice is published, then the periods of time that otherwise are provided by the federal laws governing such claims will apply.

Project Location

Project I.D. 1060-33-01
Zoo Interchange Study
Milwaukee County, Wisconsin

**PROJECT
LOCATION**



Summary

Information about the Final EIS

This Final EIS includes information presented in the Supplemental Draft EIS which was approved by the Federal Highway Administration (FHWA) on February 4, 2011, for distribution to agencies and the public. The Final EIS also responds to comments on the Supplemental Draft EIS, summarizes input received as a result of the public hearing and availability of the Supplemental Draft EIS for review, and identifies the preferred alternative and basis for selection. The following is a list of format changes, revisions, and additions between the Supplemental Draft and Final EIS, based on comments and public hearing input on the Supplemental Draft EIS. New material in the Final EIS is either highlighted with shading or noted with a vertical line in the right margin.

- **Summary** – Discussion of preferred alternative and additional information in the impact summary table.
- **Section 1 – Purpose of and Need for Proposed Action.** Minor updates.
- **Section 2 – Alternatives/Preferred Alternative.** Previously titled “Alternatives” in the Draft EIS. Discussion of preferred alternative has been added.
- **Section 3 – Existing Conditions, Environmental Impacts and Measures to Minimize Adverse Effects.** Several sections have been updated, including air quality and noise. A particulate matter analysis has been added. The noise impacts section has been updated to reflect a new WisDOT noise policy. A new section “Wetlands – Only Practicable Alternative Finding” has been added to Section 3.15.
- **Section 4 – Final Section 4(f) Evaluation.** Previously titled “Draft Section 4(f) Evaluation”. The coordination section has been updated to reflect coordination with Milwaukee County Parks System and State Historic Preservation Office.
- **Section 5 – Public Involvement and Agency Coordination During Draft EIS Preparation and Following Draft EIS Availability.**
- **Section 6 – Comments and Coordination Following Supplemental Draft EIS Availability and Public Hearing.** New Final EIS Section.
- **Appendix A, B, and C** – Minor changes.
- **Appendix D and E** – No changes.
- **Appendix F – Agency Correspondence on Supplemental Draft EIS.** New appendix that contains local, state, and federal agency comments on the Supplemental Draft EIS.
- **Appendix G – PM_{2.5} Qualitative Hot Spot Analysis.** New appendix that contains a qualitative analysis of particulate matter impacts.

Description of the Proposed Action

The proposed action is to reconstruct the Zoo Interchange and the adjacent Interstate 94 (I-94), Interstate 894 (I-894), and United States Highway 45 (US 45) approaches. The scope of the proposed action includes rebuilding the mainline roadway and bridges; modifying interchange access to improve safety and traffic flow; reconstructing local streets affected by the freeway reconstruction; and enhancing the aesthetic appearance of the reconstructed freeway. The proposed action 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.
- Replace deteriorating pavement and bridges.
- Accommodate future traffic volumes at an acceptable level of service.

The project would neither require nor foreclose future transportation improvements adjacent to the study area. The proposed action would provide a safe and efficient transportation system in the Zoo Interchange while minimizing impacts to the natural and built environment, to the extent feasible and practicable.

The study-area termini are 124th Street on the west, 70th Street on the east, Burleigh Street on the north, and Lincoln Avenue on the south. The service interchanges at Highway 100 at I-94, Greenfield Avenue, 84th Street, Bluemound Road, Wisconsin Avenue, Watertown Plank Road, Swan Boulevard, Highway 100 at US 45, and North Avenue are included in the study because of their proximity to the system interchange, and to each other on the north leg, and their effect on traffic flow (**Exhibit 1-1**).

The Wisconsin Department of Transportation (WisDOT) and the Federal Highway Administration (FHWA) are the lead state and federal agencies, respectively, for this project.

The key dates in development of this Environmental Impact Statement (EIS) are:

Notice of Intent to prepare an EIS appeared in the Federal Register on May 19, 2008

The Draft EIS was circulated for review in May 2009 and public hearings were held on June 23 and 24, 2009.

The Supplemental Draft EIS was circulated for review in February 2011 and public hearings were held on March 22 and 23, 2011.

Purpose of and Need for the Project

The purpose of the project is to address the study-area freeway system's deteriorated condition, obsolete design of the roadway and bridges, current and future capacity, and high crash rate. A combination of factors demonstrates the need for the transportation improvements in the Zoo Interchange corridor:

- Regional land use and transportation planning growth forecasts – 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 the study-area freeway system.

- 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, and Minneapolis with I-90 in Billings, Montana. I-894 is a bypass around Milwaukee for through traffic and provides an important freeway connection for several Milwaukee County communities. US 45 is a north-south highway link connecting the Upper Peninsula of Michigan, Oshkosh, Fond du Lac, West Bend, Milwaukee, Chicago’s O’Hare International Airport and points south.
- Existing and future traffic volumes – The Zoo Interchange carries nearly 300,000 vehicles on an average weekday – more than any other freeway interchange in Wisconsin. Current (2004) traffic volumes on study-area freeway legs surrounding the Zoo Interchange range from 152,000 vehicles per day (vpd) to 174,000 vpd. By 2035, traffic volumes are expected to rise to approximately 164,000 vpd to 192,000 vpd. This represents a 14 to 34 percent traffic increase over the current conditions.
- Safety – From 2001 to 2005, there were 4,522 crashes (not including deer/other animal crashes) on the freeway and interchange entrance/exit ramps, or roughly two crashes per day. Crash rates in the study area are up to five times higher than other similar freeways in the state.
- Existing freeway conditions and deficiencies – The study-area freeway system was completed in 1963. Over the years, the concrete pavement has become worn and cracked. WisDOT resurfaced I-94 and US 45 in the mid-1970s and I-894 in the early 1980s, which returned a smooth riding surface to the roadway but did not address the pavement cracks or the voids in the gravel base under the pavement. Since then, WisDOT resurfaced I-94 again in the late 1990s and I-894 and US 45 a second and third time, most recently in the early 2000s. The structural condition of the study-area freeway system bridges is an important factor in the need for the proposed action. The condition of the bridges has deteriorated over the years due to age, heavier than expected traffic, road salt, freeze-thaw cycles, and water entering cracks in the bridges. In 2009 five met only minimum standards, defined as “meets minimum tolerable limits to be left in place as is,” and several more are anticipated to deteriorate to minimum standards in the near future. Three of these five bridges were completely replaced in 2010 due to accelerated deterioration and a decreasing ability to carry oversize loads. In addition to the physical condition, there are other substandard design elements, such as inadequate ramp spacing, low bridges, and sharp curves. 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. This is a safety issue and having both left- and right-hand exits violates driver expectations.

Section 1, Purpose of and Need for the Proposed Action, discusses these factors. The need for the proposed improvements sets the stage for developing and evaluating possible improvement alternatives.

Alternatives / Preferred Alternative

WisDOT and FHWA developed and evaluated a wide range of alternatives. The alternatives were presented to the public and were assessed to determine their environmental impacts and the extent to which they fulfill the purpose of the project. The initial range of alternatives considered includes the following:

- No-Build Alternative – No safety or capacity improvements would be made. Only maintenance and minor improvements would be performed. This alternative serves as a baseline for comparison to the Build Alternatives.
- Transportation Demand Management – This alternative strives to reduce the number of auto trips through increased transit ridership and other strategies. The public transit system element of *A Regional Transportation System Plan for Southeastern Wisconsin: 2035* recommends several ways to increase bus service in Milwaukee County.
- Transportation System Management – This alternative includes measures to maximize the efficiency and use of the highway system to help alleviate or postpone the need to expand capacity. The Transportation System Management element of the SEWRPC regional transportation plan recommends measures such as freeway traffic management (ramp meters, bus, and high-occupancy vehicle lanes on ramps) and intelligent transportation systems (advanced traveler information for transit and highway travel conditions).
- Build Alternatives:
 - Replace-in-Kind Alternative – The study-area freeway system would be replaced in its current configuration with three lanes in each direction, left-hand entrance and exit ramps, closely spaced interchanges, and no change in the horizontal or vertical alignment of the freeway or interchanges.
 - Spot improvements – Replacing the existing roadway and bridges in or close to their existing configuration while addressing safety issues that can be fixed with little or no new right-of-way acquisition.
 - Modernization improvements (6-lane) – Replacing the existing roadway and bridges and completely reconfiguring the study-area freeway system to address the safety issues described in Section 1, Purpose of and Need for the Proposed Action.
 - Modernization improvements with added capacity (8-lane) – Utilizing the modernization improvements alternative and adding one new lane in each direction to address congestion that is described in Section 1, Purpose of and Need for the Proposed Action.
 - Reduced Impacts Alternative – In response to comments and testimony received on the original Draft EIS and alternatives, WisDOT and FHWA developed a new freeway alternative that reduces right-of-way required (and reduces the associated impacts). This alternative would be lower-cost than the Modernization alternatives presented in the Draft EIS. The Reduced Impacts Alternative will increase the capacity over the existing condition. Eight lanes will be provided in the north-south direction. Due to high turning movements, only four east-west lanes are needed through the core while additional capacity in the form of auxiliary lanes will be provided east and west of the core to accommodate the future traffic volumes.

Adjacent Arterials Component— An additional traffic study, paired with the validation of Draft EIS analysis that I-94 access to and from the Bluemound Road/Wisconsin Avenue interchange on US 45 cannot be provided, has determined that some amount of freeway traffic will opt to use arterials in the study area to access local development. This diverted traffic results in the need for improvements to these arterials. Because these improvements are a direct result of the project alternatives, these improvements are now included in the reconstruction concept contemplated with either the Modernization or Reduced Impacts Alternatives.

Based on cost, impacts, its ability to meet the purpose and need for the project, and public input, WisDOT has selected the Reduced Impacts Alternative and the Adjacent Arterials Component as its preferred alternative.

Environmental Impacts

In most cases, the impacts of the Modernization Alternatives and Reduced Impacts Alternative (including the impacts related to the Adjacent Arterials Component) are greater than the No-Build Alternative and the other alternatives considered.

Exhibit S-1 summarizes the impacts of the No-Build Alternative, 6-lane Modernization Alternatives, and the 8-lane Modernization Alternatives. (See Section 3 for a detailed evaluation.) The impacts of the Modernization Alternatives are similar because much of the reconstruction could be completed within the existing right-of-way. Narrow strips of new right-of-way, totaling about 55 to 72 acres within the study area, would need to be acquired. WisDOT and FHWA would need to acquire 6 to 39 residences to implement the 6-lane Modernization Alternative or the 8-lane Modernization Alternative. The Reduced Impacts Alternative would acquire 8 residences (one multi-family apartment building) and 3 businesses. The Adjacent Arterials Component would acquire one commercial building containing two businesses. See Section 2, Alternatives Considered, for a detailed description of the alternatives.

Economic Impact

One of the economic impacts of the Modernization Alternatives would be an expenditure of \$2.3 billion in year-of-construction dollars for the 8-lane Modernization Alternatives and \$1.76 billion to \$2.1 billion for the 6-lane Modernization Alternatives. The Reduced Impacts Alternative would result in an expenditure of \$1.71 billion. The Adjacent Arterials Component, which is an element of both the Modernization and Reduced Impacts Alternative, would cost \$65 to \$73 million. This amount represents the cost of designing the roadways, right-of-way acquisition, utility relocation, and construction cost in year-of-construction dollars. Replacing the study-area freeway system in its current configuration would cost an estimated \$922 million in year-of-construction dollars. This cost estimate includes the entire cost of reconstructing the 9-mile-long study-area freeway system (Lincoln Avenue to Burleigh Street, 70th Street to 124th Street).

Public Involvement

WisDOT and FHWA implemented an extensive public involvement program for this study. More than 300 meetings have been held with neighborhood, community, environmental,

business, minority, and other stakeholder groups. Open house public information meetings were held in May and October 2008. Public information meetings were held at two locations: Tommy Thompson Youth Center (at State Fair Park) and Wauwatosa West High School. Following distribution of the Draft EIS, public hearings were conducted in June 2009 at the Tommy Thompson Youth Center. Additional coordination with stakeholder groups occurred in the period between the 2009 public hearings and distribution of the Supplemental Draft EIS. Following distribution of the Supplemental Draft EIS, public hearings were conducted in March 2011 at the Tommy Thompson Youth Center.

While there is support for the project, areas of controversy include expanding the freeway system's capacity, potential residential relocations, and mitigating traffic noise in neighborhoods adjacent to the study-area freeway system. Development of the Reduced Impacts Alternative was undertaken to address these concerns.

Other Federal or State Actions Required

WisDOT and FHWA will apply to the U.S. Army Corps of Engineers for a permit to place fill in waters of the United States under Section 404 of the Clean Water Act. WisDOT will also request water quality certification from the Wisconsin Department of Natural Resources (DNR) under Section 401 of the Clean Water Act. WisDOT will coordinate threatened and endangered species impacts with DNR under state statute 29.604 and administrative code NR 27. WisDOT has coordinated with and obtained approval from the State Historic Preservation Officer under Section 106 of the National Historic Preservation Act.

Proposed Mitigation

WisDOT and FHWA will avoid and minimize impacts to the extent practicable. Unavoidable impacts will be mitigated to the extent practicable and allowable under state and federal law. Where there is no practicable alternative to filling wetlands, state and federal regulations require compensatory wetland mitigation in accordance with the *WisDOT/Wisconsin Department of Natural Resources Cooperative Agreement on Compensatory Wetland Mitigation*. WisDOT will continue to work with DNR to determine appropriate mitigation measures, if any, for state threatened or endangered species impacts. Residential and business relocations would follow federal law, which requires just compensation for residences and businesses displaced by a transportation project. WisDOT and FHWA will work with local officials and affected residents to determine the location of noise barriers in areas where the barriers are reasonable, feasible, and likely to be incorporated.

	No Build/Replace-in-kind for entire project area		Modernization (6-Lane)	Modernization (8-lane)	Reduced Impacts Alternative	Adjacent Arterials Component	Preferred Alternative Total Impacts (Reduced Impacts Alternative plus Adjacent Arterials Component)
	No-build	Replace-in-kind					
Total Cost (Design, Construction, Real Estate, Utilities, Contingency Cost (year of Construction \$ in millions)	\$0	\$922	\$2,100	\$2,300	\$1,710		\$1,710
New Right-of-Way (acres) ^{1,2}	0	0	57-72	61-75	65	11	76
Residential Displacements	0	0	6-30	6-39	8	0	8
Commercial Displacements	0	0	6-8	6-8	3	2	5
Public Bldg Displacements	0	0	3	3	2	0	2
100 year floodplain crossings (no new crossings)	2	2	2	2	2	3	5
Floodplain (acres)	0	0	0.1	0.2	0.5	0.0	0.5
Stream crossings (no new crossings)	3	3	3	3	3	1	4
Wetland (acres)	0	0	1.6	1.7	1.5	0.05	1.6
Parkland (acres) ¹	0	0	15.7	16.2	8.8	<0.1	8.8
Threatened and endangered species (Yes/No) ³	No	No	Yes	Yes	Yes	Yes	Yes
Primary Environmental Corridor (acres) ¹	0	0	0.5	0.8	0.6	<0.1	0.6
Primary Environmental Corridor Crossings (no new crossings) ¹	2	2	2	2	2	1	3
Isolated Natural Resource Area (acres)	0	0	0	0	0	0.2	0.2
Historic Sites Affected	0	0	0-1	0-1	0-1	0	0-1
Archaeological Sites Affected	0	0	0	0	0	0	0
Environmental Justice Issues (Yes/No)	No	No	No	No	No	No	No
Air Quality Permit	No	No	No	No	No	No	No
Noise Receptors Impacted (Design Year 2035) ⁴	0	0	332-369	352-388	397	29	426
Potential Contaminated Sites	0	0	72	72	71	21	92

1. Total new right-of-way, parkland and primary environmental corridor acres impacted and corridor crossings do not include land for proposed stormwater retention/detention ponds.
2. In addition to right-of-way acquisition (not included as part of the new right of way total in this table), easements may be required for utility relocation as a result of this project.
3. The threatened and endangered species is the Butler's garter snake, located along the north leg.
4. To assist in noise modeling efforts, all noise receptors were assigned to a leg, thus no noise receptors were assigned to the core.
5. The south leg was only modeled with the eastbound I-94 access to Greenfield Avenue included.
6. The impacts listed for the Adjacent Arterials Component are separate from those portrayed for the Modernization and Reduced Impacts Alternatives; the Adjacent Arterials' impacts should be added to the Modernization and/or Reduced Impacts Alternatives for full-project totals.
7. Adjacent Arterial Component cost is included in the Modernization Alternative and Reduced Impact Alternative cost estimate.

Contents

Summary	iii
Abbreviations and Acronyms	xvii
1. Purpose of and Need for the Proposed Action	1-1
1.1 Description of the Proposed Action	1-1
1.2 Purpose of Proposed Action	1-4
1.3 Need for Proposed Action	1-5
1.4 Local Government and Public Input, and Agency Coordination	1-44
1.5 Environmental and Socioeconomic Aspects	1-44
2. Alternatives / Preferred Alternative	2-1
2.1 Development of Initial Range of Alternatives	2-1
2.2 Initial Alternatives Screening	2-3
2.3 Other Alternatives Considered	2-40
2.4 Second Alternatives Screening / Alternatives Retained for Detailed Study ...	2-45
2.5 Post-Public Hearing (2009) Alternatives Development and Refinement	2-46
2.6 Alternatives Retained for Detailed Study in Supplemental Draft EIS	2-67
2.7 Selection of Preferred Alternative	2-67
3. Existing Conditions, Environmental Impacts, and Measures to Mitigate	
Adverse Impacts	3-1
3.1 Land Use and Land Use Planning	3-1
3.2 Indirect and Cumulative Effects	3-8
3.3 Transportation Service	3-27
3.4 Utilities	3-48
3.5 Residential Development	3-51
3.6 Commercial and Industrial Development	3-60
3.7 Agricultural Resources	3-68
3.8 Institutional and Public Services	3-69
3.9 Socioeconomic Characteristics	3-84
3.10 Visual Character/ Aesthetics	3-108
3.11 Surface Water and Fishery	3-111
3.12 Environmental Corridors and Natural Areas	3-122
3.13 Floodplains and Hydraulics	3-126
3.14 Groundwater and Water Supply	3-128
3.15 Wetlands	3-129
3.16 Upland Habitat and Woodland	3-139
3.17 Wildlife	3-140
3.18 Threatened and Endangered Species	3-141
3.19 Noise	3-143
3.20 Air Quality	3-157
3.21 Hazardous Materials	3-164
3.22 Soil Resources	3-166
3.23 Cemeteries	3-167
3.24 Archaeological	3-167
3.25 Historic Sites	3-169
3.26 Recreational Resources / Public Use Lands	3-174

3.27	Construction	3-188
3.28	Relationship of Local and Short-Term Uses versus Long-Term Productivity	3-196
3.29	Irreversible and Irrecoverable Commitments of Resources.....	3-197
4.	Final Section 4(f) Evaluation	4-1
4.1	Introduction.....	4-1
4.2	Proposed Action	4-6
4.3	Section 4(f) Properties.....	4-7
4.4	Final Section 4(f) Finding.....	4-48
5.	Public Involvement and Agency Coordination During Draft EIS Preparation and Following Draft EIS Availability.....	5-1
5.1	Public Involvement.....	5-1
5.2	Agency Coordination	5-32
5.3	Comments and Coordination Following Draft EIS Availability and Public Hearing.....	5-45
6.	Public Involvement and Agency Coordination Following Supplemental Draft EIS Availability and Public Hearing	6-1
6.1	Public Involvement.....	6-1
6.2	Summary of Oral and Written Comments.....	6-4
6.3	Agency and Local Official Comments	6-5
6.4	Frequently Asked Questions and Comments	6-7
6.5	Project Meetings After Supplemental Draft EIS Approval.....	6-10

Appendixes

A	Summary of Mitigation Measures
B	Traffic Noise Impact Summary
C	Mobile Source Air Toxics
D	Agency Coordination Prior to Draft EIS
E	Agency Correspondence During, and Coordination Following, the Draft EIS Availability Period
F	Agency Correspondence on Supplemental Draft EIS and Preferred Alternative
G	PM _{2.5} Qualitative Hot-Spot Analysis

References

- Final EIS Distribution List
- List of Preparers
- Index

Tables

1-1.	Milwaukee County Growth Projections.....	1-6
1-2.	High Crash Rate Locations.....	1-12
1-3.	Horizontal Alignment – Minimum Recommended Design Speeds and Existing Design Speeds.....	1-24
1-4.	Stopping Sight Distance – Minimum Recommended Design Speeds and Existing Design Speeds.....	1-26
1-5.	Bridges with Inadequate Vertical Clearance	1-29
1-6.	Locations Where Minimum Ramp Spacing is Not Provided	1-31
1-7.	Locations with Substandard Ramp Taper Rates	1-32

1-8.	Ramps with Inadequate Acceleration or Deceleration Lanes	1-32
2-1.	Key Impacts of Modernization Alternatives – West Leg	2-16
2-2.	Key Impacts of Modernization Alternatives – East Leg	2-24
2-3.	Key Impacts of Modernization Alternatives – South Leg	2-28
2-4.	Key Impacts of Modernization Alternatives – North Leg	2-39
2-5.	Secondary Screening of Alternatives by Leg (2009)	2-46
3-1.	Land Use and Development Plans in the Zoo Interchange Study Area Corridor	3-4
3-2.	Area of Potential Effects by Resource	3-17
3-3.	List of Past, Present, and Reasonably Foreseeable Future Actions	3-17
3-4.	Residential Relocations by Leg and Alternative	3-54
3-5.	Commercial Relocations by Alternative	3-64
3-6.	Area City/County Population 1990-2010	3-84
3-7.	Study Area Population	3-85
3-8.	Study Area Minority Population 1990-2010	3-85
3-9.	Population by Race, 2010	3-86
3-10.	Projected Population 2000-2025	3-86
3-11.	Median Household Income (2000)	3-88
3-12.	Historic and Projected Employment for Milwaukee and Waukesha Counties	3-91
3-13.	Job Distribution	3-91
3-14A.	Tax Base Impacts	3-95
3-14B.	Reduced Impacts Alternative Tax Base Impacts	3-97
3-14C.	Adjacent Arterial Tax Base Impacts	3-98
3-15.	Wetland Summary	3-130
3-16A.	Modernization Alternatives Wetland Impacts	3-134
3-16B.	Reduced Impacts Alternative Wetland Impacts	3-135
3-17.	Measured Existing Noise Levels	3-145
3-18.	Comparison of Measured and Modeled Noise Levels	3-146
3-19.	Noise Level Criteria for Considering Barriers	3-147
3-20.	Change in Design Hour Noise Levels	3-148
3-21.	Noise Impact Summary	3-151
3-22.	Acoustical Mitigation – Noise Barrier Locations Analyzed	3-153
3-23.	National and Wisconsin Ambient Air Quality Standards	3-157
3-24.	Maximum Projected Carbon Monoxide Concentrations	3-161
3-25A.	Parkland Impacts by Modernization Alternatives (Acres)	3-179
3-25B.	Parkland Impacts by Reduced Impacts Alternative (Acres)	3-181
3-26.	Construction Cost (in \$ millions)	3-188
3-27.	Construction Noise/Distance Relationships	3-190
4-1.	Modernization and Reduced Impacts Alternatives' Impacts on Section 4(f) Properties	4-7
5-1.	Issues Identified through Public Design Workshops	5-7
5-2.	Alternatives Presented at May 2008 PIM	5-7
5-3.	Alternatives Presented at October 2008 PIM	5-9
5-4.	Ad Placements	5-10
5-5.	Community-Based Organization and Neighborhood Block Meetings	5-11
5-6.	Business and Labor Meetings	5-12
5-7.	Meetings with Educational Institutions	5-14
5-8.	Meetings with Elected Officials	5-15
5-9.	Meetings with Local Officials	5-17
5-10.	Strategic Advisory Committee	5-21

5-11. Technical Advisory Committee5-24
 5-12. Community Advisory Committee5-27
 5-13. Agency Coordination Summary5-39
 5-14. Public Comment Summary.....5-47
 5-15. Summary of Federal, State, and Local Government Comments.....5-48
 6-1. Public Comment Summary.....6-4
 6-2. Summary of Federal, State, and Local Government Comments.....6-5

Exhibits

1-1. Project Limits1-2
 1-2. Estimated Existing Southeastern Wisconsin Freeway System Traffic
 Congestion on an Average Weekday.....1-8
 1-3. Crash Rates: 2001–20051-13
 1-4. Basic Pavement Components1-14
 1-5. Number of Pavement Overlays1-16
 1-6. Pavement Life1-17
 1-7. Bridge Terminology.....1-18
 1-8. Bridge Deterioration Prior to 2009–2010 Replacement.....1-20
 1-9. Bridge Rehabilitation Prior to 2009–2010 Replacement1-22
 1-10. Bridge Deficiencies1-23
 1-11. Existing Design Speed of Curves.....1-25
 1-12. Existing Design Speed Based on Stopping Sight Distance1-27
 1-13. Levels of Service Examples1-34
 1-14. Existing and Future Traffic Volumes (VPD)1-37
 1-15. Existing Traffic Operations – Morning Peak Hour (7 to 8 A.M.)1-38
 1-16. Existing Traffic Operations – Evening Peak Hour (4:30 to 5:30 P.M.).....1-39
 1-17. Major Traffic Generators1-40
 1-18. 2035 No-Build Traffic Operations – Morning Peak Hour (7 to 8 A.M.).....1-42
 1-19. 2035 No-Build Traffic Operations – Evening Peak Hour (4:30 to 5:30 P.M.)1-43
 2-1. Alternative SI-12-8
 2-2. Entering Eastbound I-94 from Highway 100 under SI-1.....2-9
 2-3. Alternative SI-2.....2-10
 2-4. Alternative SI-3.....2-11
 2-5. Service Road Texas U-Turn Illustration2-12
 2-6. Core Zoo Interchange.....2-15
 2-7. West Leg Modernization Alternative 1 (W1)2-17
 2-8. West Leg Modernization Alternative 3 (W3)2-18
 2-9. East Leg Modernization Alternative 1 (E1).....2-20
 2-10. East Leg Modernization Alternative 2 (E2).....2-21
 2-11. East Leg Modernization Alternative 3 (E3).....2-22
 2-12. East Leg Modernization Alternative (E1/E3 Hybrid)2-23
 2-13. South Leg Modernization Alternative 1 (S1).....2-25
 2-14. South Leg Modernization Alternative 2 (S2).....2-26
 2-15. South Leg Modernization Alternative 3 (S3).....2-27
 2-16. North Leg Modernization Alternative 1 (N1)2-29
 2-17. North Leg Modernization Alternative 2 (N2)2-32
 2-18. North Leg Modernization Alternative 3 (N3)2-36
 2-19. Typical Sections2-42

2-20.	MRMC O/D	2-48
2-21.	Modified E3	2-49
2-22.	Reduced Impacts Alternative Core	2-51
2-23.	Reduced Impact Alternative – West Leg.....	2-53
2-24.	Reduced Impact Alternative East Leg	2-54
2-25.	Reduced Impact Alternative – South Leg	2-56
2-26.	Reduced Impact Alternative – North Leg.....	2-57
2-27.	Reduced Impact – Traffic Stick Diagrams.....	2-62
2-28.	Reduced Impact Alternative – Highway 100	2-65
2-29.	Reduced Impact Watertown Plank Road.....	2-66
2-30.	Reduced Impact Alternative – WIS 181.....	2-68
3-1.	Existing Land Use	3-5
3-2.	Milwaukee County Transit System Routes	3-28
3-3.	Six-Lane Modernization Alternative (E1/W1/N1/S2) Traffic Operations During AM Peak Hours.....	3-33
3-4.	Six-Lane Modernization Alternative (E1/W1/N1/S2) Traffic Operations During PM Peak Hours	3-34
3-5.	Six-Lane Modernization Alternative (E3/W3/N3/S2) Traffic Operations During AM Peak Hours.....	3-35
3-6.	Six-Lane Modernization Alternative (E3/W3/N3/S2) Traffic Operations During PM Peak Hours	3-36
3-7.	Eight-Lane Modernization Alternative (E1/W1/N1/S2) Traffic Operations During AM Peak Hours.....	3-37
3-8.	Eight-Lane Modernization Alternative (E1/W1/N1/S2) Traffic Operations During PM Peak Hours	3-38
3-9.	Eight-Lane Modernization Alternative (E3/W3/N3/S2) Traffic Operations During AM Peak Hours.....	3-39
3-10.	Eight-Lane Modernization Alternative (E3/W3/N3/S2) Traffic Operations During PM Peak Hours	3-40
3-11.	Reduced Impacts Alternative Traffic Operations During AM Peak Hour	3-41
3-12.	Reduced Impacts Alternative Traffic Operations During PM Peak Hours	3-42
3-13.	E1 Texas U-Turns at 84th Street	3-46
3-14.	Major Electrical Transmission Crossings	3-48
3-15.	South Leg (Alternative S2) – Residential Relocations.....	3-56
3-16.	East Leg (E1/E3 Hybrid Alternative) – Residential Relocations.....	3-57
3-17.	East Leg (Modified E3 Alternative) – Residential Relocations	3-58
3-18.	East Leg (Reduced Impacts Alternative) – Residential Relocations	3-59
3-19.	Modernization Alternatives – Business Relocations.....	3-63
3-20.	Reduced Impacts Alternative – Business Relocations	3-65
3-21.	Adjacent Arterials Component – Business Relocations	3-66
3-22.	Schools and Churches within a Quarter Mile of the Study Area Freeway System.....	3-70
3-23.	Milwaukee County Buildings and Facilities Adjacent to US 45.....	3-73
3-24.	Milwaukee Regional Medical Center.....	3-74
3-25.	State Fair Park	3-75
3-26.	Minority Population in Study Area and Surrounding Community (2000).....	3-87
3-27.	Poverty Level in Corridor Versus Milwaukee and Waukesha County (2000).....	3-89
3-28.	Existing Stormwater Drainage System.....	3-112
3-29.	Relationship Between Impervious Area and Stream Flow	3-117
3-30.	Stormwater Best Management Practices	3-120

3-31.	Primary Environmental Corridors, Isolated Natural Resource Areas, Surface Water and Streams.....	3-123
3-32.	Wetlands	3-132
3-33.	Recreational Resources/Public Use Lands.....	3-175
3-34.	Proposed Relocation Options for Overhead Power Lines Near Milwaukee County Zoo (2 Lines North, 1 Line South).....	3-182
3-35.	Proposed Relocation Options for Overhead Power Lines Near Milwaukee County Zoo (1 Line North, 2 Lines South).....	3-183
3-36.	Proposed Relocation Options for Overhead Power Lines Near Milwaukee County Zoo (3 Lines South).....	3-184
3-37.	Reduced Impacts Alternative for Overhead Power Lines Near Milwaukee County Zoo, 3 Lines South.....	3-187
4-1.	Section 4(f) Resources.....	4-2
4-2A.	Eight-Lane N1 and N3 Alternatives' Impacts on Underwood Creek Parkway at US 45	4-12
4-2B.	Reduced Impacts Alternative's Impacts on Underwood Creek Parkway at US 45	4-13
4-2C.	Reduced Impacts Alternative's Impacts on Underwood Creek Parkway at Watertown Plank Road.....	4-14
4-3.	Wil-O-Way Underwood Special Recreation Center	4-15
4-4A.	Zoo Property Impacts (Eight-Lane Modernization Alternatives).....	4-19
4-4B.	Zoo Property Impacts (Reduced Impacts Alternative and Adjacent Arterials Component)	4-21
4-5A.	Eight-Lane W3 Alternative Impacts on Chippewa Park	4-24
4-5B.	Reduced Impacts Alternative Impacts on Chippewa Park	4-25
4-6A.	Modernization Alternatives' Impacts on Honey Creek Parkway.....	4-27
4-6B.	Reduced Impacts Alternative's Impacts on Honey Creek Parkway	4-28
4-7.	N1 Alternative Impacts on Milwaukee County Parks Building	4-30
4-8.	N3 Alternative Impacts on Milwaukee County Parks Building	4-32
4-9.	Reduced Impacts Alternative Impacts on Milwaukee County Parks Building	4-33
4-10.	Eight-Lane N1 Alternative Impacts on Eschweiler Buildings	4-35
4-11.	Eight-Lane N3 Alternative Impacts on Eschweiler Buildings	4-36
4-12.	Reduced Impacts Alternative Impacts on Eschweiler Buildings	4-38
4-13A.	W3 Alternatives Impacts on Union Pacific Truss Bridge.....	4-39
4-13B.	Reduced Impacts Alternative Impacts on Union Pacific Truss Bridge.....	4-40
4-14A.	Modernization Alternatives' Impacts on Greenfield Avenue Presbyterian Church.....	4-42
4-14B.	Reduced Impacts Alternative Impacts on Greenfield Avenue Presbyterian Church.....	4-44
4-15.	Adjacent Arterials Component Impacts on Rockway and Brookside Places Residential Historic District.....	4-45
4-16.	Adjacent Arterials Component Impacts on St. Jude Roman Catholic Church Complex.....	4-47
4-17.	Adjacent Arterials Component Impacts on Muirdale Sanatorium.....	4-49

Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACM	Asbestos-Containing Material
ADID	Advanced Identification
APE	area of potential effects
BMP	best management practice
CAC	Community Advisory Committee
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality
Corps	United States Army Corps of Engineers
CP	Canadian Pacific
CSD	context sensitive design
dB	decibel
dBA	decibel A-weighted
DBE	disadvantaged business enterprise
DEIS	Draft Environmental Impact Statement
DNR	Department of Natural Resources
DPW	Department of Public Works
EIS	Environmental Impact Statement
FDM	Facilities Development Manual
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FWS	United States Fish and Wildlife Service
HAST	Hank Aaron State Trail
HOT	high-occupancy toll
HOV	high-occupancy vehicle
I-894	Interstate 894
I-94	Interstate 94
kv	kilovolt

LPA	locally preferred alternative
LWCF	Land and Water Conservation Fund
MIS	major investment study
MCTS	Milwaukee County Transit System
MMSD	Milwaukee Metropolitan Sewerage District
mph	miles per hour
MSAT	mobile source air toxics
NAAQS	National Ambient Air Quality Standards
NBI	National Bridge Inventory
NEPA	National Environmental Policy Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
pc/mi/pl	passenger cars per mile per lane
PIM	public information meeting
PM	particulate matter
ppm	parts per million
SAC	Strategic Advisory Committee
SAFETEA-LU	Safe, Accountable, and Flexible Efficient Transportation Equity Act— A Legacy for Users
SDEIS	Supplemental Draft Environmental Impact Statement
SEWRPC	Southeastern Wisconsin Regional Planning Commission
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
TAC	Technical Advisory Committee
TDM	transportation demand management
TIA	Traffic Impact Analysis
TIP	Transportation Improvement Program
TNM	Traffic Noise Model®
TrANS	Transportation Alliance for New Solutions
TSM	Transportation System Management
TSP	total suspended particles
U.S. EPA	United States Environmental Protection Agency
US	United States highway

UWM	University of Wisconsin-Milwaukee
vmt	vehicle miles of travel
vpd	vehicles per day
WSTIA	West Suburban Traffic Impact Analysis
WIS	Wisconsin State Highway
WisDOT	Wisconsin Department of Transportation

References

References

The references listed below that are not available on line may be reviewed at the WisDOT SE Region office at 141 N.W. Barstow Street, Waukesha, WI or by contacting Bill Mohr, WisDOT, at dotdtsdsezoo@dot.state.wi.us

AASHTO. 1992. *Guide for the Design of High Occupancy Vehicle Lanes*.

AASHTO. 2004a. *A Policy on Geometric Design of Highways and Streets*.

AASHTO. 2004b. *Guide for High-Occupancy Vehicle Facilities*.

Bent, Gray, Smith, and Glysson, U.S. Geological Survey in cooperation with FHWA. 2001. *A Synopsis of Technical Issues for Monitoring Sediment in Highway and Urban Runoff*.

The Business Journal. 2008. November 7.

Caltrans and Nevada DOT. 1990. *Roadside Erosion Control and Revegetation Needs Associated with the use of Deicing Salt within the Lake Tahoe Basin*. September.

City of Milwaukee. 1988. *A Housing Strategy for the City of Milwaukee*.

City of Wauwatosa. 1977. *City of Wauwatosa Comprehensive Plan Report*.

City of West Allis. 1991. *City of West Allis Comprehensive Land Use Plan 1990–2010*.

Corps of Engineers. 1987. *Wetland Delineation Manual*.

Corps of Engineers. 1999. *Highway Methodology Workbook Supplement*.

CoStar Group. 2007a. *The CoStar Retail Report, Milwaukee Office Market, Year End 2007*.

CoStar Group. 2007b. *The CoStar Office Report, Milwaukee Office Market, Year End 2007*.

CoStar Group. 2010a. *The CoStar Retail Report, Third Quarter 2010*.

CoStar Group. 2010b. *The CoStar Office Report, Third Quarter 2010*.

CTC and Associates. 2007. *Transportation and Global Warming: Defining the Connection and the Solution*. WisDOT Bureau of Equity and Environmental Services. July.

Curtis, John T. 1959. *The Vegetation of Wisconsin: An Ordination of Plant Communities*. The University of Wisconsin Press.

DNR. 2001. *The State of the Milwaukee River Basin*. August.

DNR. 2004. *Rapid Assessment Methodology Forms*.

DNR. 2008. *Wisconsin's Strategy for Reducing Global Warming*.
http://dnr.wi.gov/environmentprotect/gtfgw/documents/Final_Report.pdf. July.

DNR. 2009. Email correspondence. Christopher Bovee, DNR to John Jaeckel, HNTB Corporation. April 15, 2009.

Ewing, Reid, Keith Bartholowew, Steve Winkelman, Jerry Walters, and Don Chen. *Growing Cooler: the Evidence on Urban Development and Climate Change*. Urban Land Institute. 2007.

Federal Railroad Administration. 2009. <http://safetydata.fra.dot.gov/officeofsafety/>. Accessed on March 18, 2009. Office of Safety Analysis.

FHWA. 2003. *Freeway Management and Operations Handbook*. Updated June 2006.

FHWA. 2006. *Interim Guidance on Air Toxic Analysis in NEPA Documents*. February.

FHWA. 2009. *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents*. September 2009.

Kwon, Jaimyoung, and Pravin Varaiya. 2005. *Effectiveness of High Occupancy Vehicle Lanes in the San Francisco Bay Area*.

Lau, Michael C., Cynthia S. Y. Lee, Judith L. Rochat, Eric R. Boeker, and Gregg C. Fleming. 2004. *FHWA Traffic Noise Model® Users Guide (Version 2.5 Addendum)*. FHWA. April.

Lord, Dominique, Abdelaziz Manar, and Anna Vizioli. 2003. *Modeling Crash-Flow-Density and Crash-Flow-V/C Ratio Relationships for Rural and Urban Freeway Segments*. Transportation Research Board 83rd Annual Meeting.

Milwaukee County Department of Delinquency and Court Services. 2009. Personal communication with Donna Brown/WisDOT. March 24.

Marketbeat. 2011 Milwaukee Industrial Report. 4Q10. Market Statistics, accessed April 2011. http://www.cushwake.com/cwmb4q10/PDF/ind_milwaukee_4q10.pdf.

Martin, Lawrence. 1965. *The Physical Geography of Wisconsin*. University of Wisconsin Press.

Milwaukee County Research Park Corporation. 2008. www.mcrpc.org. Accessed June 17, 2008.

Milwaukee County Transit System (MCTS). 2009. Personal communication with Sandy Kellner/MCTS. April 23.

MMSD. 2002. *Watercourse Management System Plan*.

MMSD. 2004. *Menomonee River Watershed. State of the Watershed. Winter 2004*.

MMSD. 2006a. *Environmental Assessment, Milwaukee County Grounds Floodwater Management Facility and the Rehabilitation and Modification of Underwood Creek*.

MMSD. 2006b. *Honey Creek Bacteria Investigation Survey*. August.

MMSD. 2007. *2020 Facilities Plan – Facilities Plan Report, Conveyance Report, Treatment Report, and State of the Art Report*.

MMSD. 2008. *Underwood Creek Water Quality Baseline Report 2003–2005*. October.

- Paull, Richard A. 1977. *Geology of Wisconsin and Upper Michigan*. Kendall Hunt Publishing Company.
- Private School Review. 2008. www.privateschoolreview.com. Accessed November 26, 2008.
- Public Service Commission of Wisconsin and DNR. 2004. *WPSC Weston Unit 4 Power Plant Final EIS*.
- SEWRPC. 1976. *A Comprehensive Plan for the Menomonee River Watershed*.
- SEWRPC. 1991. *A Park and Open Space Plan for Milwaukee County – Community Assistance Planning Report 132*.
- SEWRPC. 1994. *A Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin: 2010 – SEWRPC Planning Report Number 43*.
- SEWRPC. 1997. *A Regional Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin – SEWRPC Planning Report Number 42*.
- SEWRPC. 1998. *A Park and Open Space Plan for the City of Wauwatosa, Milwaukee County, Wisconsin – SEWRPC Community Assistance Planning Report Number 207*.
- SEWRPC. 2001. *Amendment to the Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin: 2020 – SEWRPC Amendment to Planning Report Number 43*.
- SEWRPC. 2003. *A Regional Freeway System Reconstruction Plan for Southeastern Wisconsin – SEWRPC Planning Report No. 47*.
- SEWRPC. 2004a. *The Economy of Southeastern Wisconsin, Technical Report No. 10. 4th Edition*.
- SEWRPC. 2004b. *The Population of Southeastern Wisconsin, Technical Report No. 11. 4th Edition*.
- SEWRPC. 2005a. *2035 Regional Land Use Plan for Southeastern Wisconsin – SEWRPC Planning Report No. 48*.
- SEWRPC. 2005b. *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*.
- SEWRPC. 2006a. *2035 Regional Land Use Plan for Southeastern Wisconsin*
- SEWRPC. 2006b. *A Regional Transportation System Plan for Southeastern Wisconsin: 2035 – SEWRPC Planning Report No. 49*.
- SEWRPC. 2009. <http://www.sewrpc.org/milwcotdp/report.shtm>. Accessed April 22, 2009.
- SEWRPC. 2010. <http://www.sewrpc.org/SEWRPC/Transportation/RTSPUpdate.htm>.
- SEWRPC. 2011. *A Transportation Improvement Program for Southeastern Wisconsin: 2011–2014*.
- Texas Transportation Institute. 2005. *The 2005 Urban Mobility Report*.

Transportation Research Board. 1991. *TRB Special Report 235, Highway Deicing: Comparing Salt and Calcium Magnesium Acetate*.

University of Minnesota. 2002. *Effectiveness of Variable Message Signs*.

University of Wisconsin–Milwaukee. 2004. *Transportation Equity and Access to Jobs in Metropolitan Milwaukee*. Center for Economic Development.

U.S. Census Bureau. 2008. <http://www.census.gov/hhes/www/poverty/threshld/thresh07.html>. Accessed December 26, 2008.

U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics. 2005. *Survey of State Funding for Public Transportation for Calendar Year 2004*.

U.S. EPA and the Corps. 1977. Clean Water Act, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 230).

U.S. EPA. 1995a. *Controlling Nonpoint Source Runoff Pollution from Roads, Highways and Bridges*. Office of Water.

U.S. EPA. 1995b. *User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections*, Office of Air Quality Planning and Standards. Research Triangle Park, NC.

U.S. EPA. 2001. <http://www.epa.gov/air/airtrends/aqtrnd01/pmatter.html>.

U.S. EPA. 2003. *User's Guide to MOBILE6.1 and MOBILE6.2, Mobile Source Emission Factor Model*. Assessment and Standards Division, Office of Transportation and Air Quality. Ann Arbor, Michigan.

U.S. EPA. 2004. Safe Drinking Water Act. http://www.epa.gov/safewater/sourcewater/pubs/arg_ssamap_reg5.pdf. Accessed on March 2007. Region 5.

U.S. EPA. 2005. <http://www.epa.gov/air/criteria.html>. Updated March 2, 2007.

U.S. EPA. 2008a. *2008 Inventory of Greenhouse Gas Emissions and Sinks*. <http://epa.gov/climatechange/emissions/index.html#ggo>.

U.S. EPA. 2008b. <http://www.epa.gov/otaq/diesel/construction/index.htm>.

U.S. EPA. 2009. <http://www.epa.gov/pmdesignations/faq.htm#0>.

Wauwatosa Economic Development Commission. 2008. www.wedc.net. Accessed June 17, 2008.

Wisconsin Asthma Coalition. 2007. *Wisconsin Asthma Plan*.

Wisconsin's Information Network for Successful Schools. 2009 and 2010. <http://data.dpi.state.wi.us/data/demographics.asp>.

WisDOT. 2002. *Wisconsin Department of Transportation Wetland Mitigation Banking Technical Guideline*. In cooperation with the Wisconsin DNR, Corps, U.S. EPA, FWS, and FHWA. 1993, 1997, 2002 (as amended).

WisDOT. 2005a. 2004 Wisconsin Highway Traffic Volume Data. June.

- WisDOT. 2005b. Wisconsin Administrative Code.
- WisDOT. 2007a. *Facilities Development Manual*.
- WisDOT. 2007b. *Guidance for Conducting Indirect Effects Analysis*. November.
- WisDOT. 2009a. *Connections 2030*. November.
- WisDOT. 2009b. *Zoo Interchange Corridor Study Indirect and Cumulative Effects Report*.
- WisDOT. 2009c. *Standard Specifications for Road and Bridge Construction*.
- WisDOT and DNR. 1993. *Cooperative Agreement on Compensatory Wetland Mitigation*. Updated in 2002.
- WisDOT. 2011. *Zoo Interchange Corridor Study Indirect and Cumulative Effects*. Technical Report Update. May.
- World Resources Institute. 2007. *Wisconsin Greenhouse Gas Emissions Inventory and Projections*. Wisconsin Task Force on Global Warming. June.
- Xceligent and the Commercial Association of Realtors Wisconsin (CARW) 2011. "Office and industrial vacancy rates down in region". Milwaukee and Southeastern Wisconsin Business News, April 13, 2011.
- Zhou, Min, and Virginia Sisiopiku. 1997. *Relationship Between Volume to Capacity Ratios and Accident Rates*. Transportation Research Board.

Final EIS Distribution List

Final EIS Distribution List

Federal Agencies

U.S. Department of Transportation
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Department of the Interior – Bureau of Indian Affairs
U.S. Department of the Interior – Fish and Wildlife Service
U.S. Department of the Interior – Office of Environmental Policy and Compliance
U.S. Department of Housing and Urban Development
U.S. Department of Commerce
National Center for Environmental Health and Injury Control

State Agencies

Wisconsin Department of Transportation (various Bureaus)
Wisconsin Department of Administration
Wisconsin Department of Natural Resources
State Historical Society
Wisconsin Legislative Fiscal Bureau
State Reference and Loan Library

Federal and State Elected Officials

Governor Scott Walker
Lieutenant Governor Rebecca Kleefisch
Honorable Herbert Kohl (U.S. Senator)
Honorable Ron Johnson (U.S. Senator)
Honorable Gwen Moore (U.S. Congresswoman)
Honorable F. James Sensenbrenner (U.S. Congressman)
Honorable Leah Vukmir (State Senator)
Honorable David Cullen (State Assemblyman)
Honorable Tony Staskunas (State Assemblyman)
Honorable Dale Kooyenga (State Assemblyman)

Local Units of Government / Interest Groups

City of Milwaukee (Mayor Tom Barrett)
City of Wauwatosa (Mayor Jill Didier)
City of West Allis (Mayor Dan Devine)
City of Brookfield (Mayor Steve Ponto)
Milwaukee County (County Executive Chris Abele)

Waukesha County (County Executive Daniel Vrakas)
Southeastern Wisconsin Regional Planning Commission
City of Milwaukee Central Library
City of Milwaukee Capitol Library
West Allis Library
Wauwatosa Public Library

List of Preparers

List of Preparers

Organization/Name	Primary Responsibility	Qualifications
FHWA		
David Scott, P.E.	EIS review for environmental and design aspects	B.S., Civil Engineering; Experience since 1989 in highway project development and environmental review
David Kopacz, P.E.	EIS review for environmental and design aspects	B.S., Civil Engineering; Experience since 1989 in highway project development and environmental review
Wesley Shemwell, P.E.	EIS review for environmental and design aspects	B.S., Civil Engineering; Experience since 1973 in highway project development and environmental review
Tracey McKenney	EIS review for environmental and design aspects	B.S., Civil Engineering; 22 years of experience in highway project development and environmental review
WisDOT		
<i>Bureau of Technical Services</i>		
Jay Waldschmidt, P.E.	EIS review for environmental aspects and legal sufficiency	B.S., Civil Engineering; B.S., Mining Engineering; Experience since 1989 in highway project development and environmental review
Bob Newbery	Cultural resource review	B.A., M.A., U.S. History; 29 years experience as WisDOT historian
<i>Southeast Region</i>		
Donna Brown	WisDOT project director; public involvement; review of engineering studies; and EIS preparation	B.A., Political Science; Master Public Affairs in Urban Policy; 16 years of experience in transportation planning and environmental justice and outreach activities
Tracy Gilliam, P.E.	WisDOT project supervisor; public involvement; review of engineering studies; and EIS preparation	B.S., Civil Engineering; Experience since 1994 in both design and construction related engineering for the WisDOT
Manojoy Nag, P.E.	WisDOT mega project manager; review of alternatives; EIS review	B.S., Civil Engineering; 17 years of experience in freeway traffic operation planning and design
James Liptack, P.E.	WisDOT project manager; review of alternatives; EIS review	B.S., Civil Engineering; Experience since 1991 in both design and construction related engineering for the WisDOT
Jason Lynch, P.E.	WisDOT project manager; review of alternatives; EIS review	B.S., Civil Engineering; Experience since 1999 in design / construction related engineering

Organization/Name	Primary Responsibility	Qualifications
Carrie Cooper	Environmental impact analysis; EIS preparation; data gathering; public involvement; agency coordination	B.S., Environmental Studies and Geography; 16 years of experience in transportation data analysis; 5 years of experience in transportation corridor studies and EIS preparation
Scott Lee	WisDOT SE region environmental coordinator	B.S., Forestry; M.S., Plant/Soil Science; 6 years as WisDOT Environmental Coordinator; 24 years of experience in natural resources/environmental management and regulations compliance
Dobra Payant, P.E.	Hazardous materials; EIS review	B.S., and M.S., Civil Engineering; 25 years of engineering experience, including 14 years in contaminated site investigation / remediation
Michael Treazise, P.E.	Alternatives development and review; EIS Review	B.S., Civil Engineering; 9 years of experience in roadway / freeway design and construction, environmental remediation and documentation
Greg Gard, Jr.	Alternatives development and review; EIS review	B.S., Civil Engineering; 2 years of experience in roadway/freeway design
Lance Parve, P.G.	Alternatives development and review; EIS review	B.S., Geology; M.S., Certificate in Urban Planning-GIS; M.S. Engineering; 23 years of transportation, environmental, geotechnical engineering and construction experience
Matthew J. Peer, E.I.T.	Alternatives development and review; EIS review	B.S., Civil Engineering, 3 years experience in structure, roadway and hydraulics design
Rabi Bista	Alternatives development and review; EIS review	B.S., Civil Engineering, 8 years of transportation design experience; 7 years of construction experience
Sandy Ratz, P.E.	Utility and Railroad design coordination; EIS review	B.S., Civil Engineering, 26 years of engineering experience
Brett Barnard, P.E.	Traffic/operational data review; EIS review	B.S., Civil Engineering; Experience since 1990 in design, construction, planning, freeway operations, signal design and traffic studies
M. Ertan Ornek, P.E.	Traffic/operational data review; EIS review	M.S., Civil Engineering, B.S., Civil and Environmental Engineering; 10 years experience in transportation engineering
Mike Cape, P.G.	Hazardous materials	M.S., Geology; 16 years of experience in contaminated site investigation/remediation
Karla Leithoff	Wetland review and coordination	M.S., Biological Science/Ecology–Wetland Science emphasis; Experience since 1993 in all aspects of wetland ecology, restoration design/management, transportation
Reem Shana	Stormwater issues	B.S., Civil Engineering; M.S., Water Resources Engineering; Experience since 1992 with different parts of civil engineering work (soils, transportation design, environmental studies, and hydraulics)
Emlynn Grisar	Public involvement	B.A., Communications; 12 years of experience implementing community involvement programs and communication strategies

Organization/Name	Primary Responsibility	Qualifications
Kimberly Stephenson	Environmental justice analysis	B.A., Political Science; M.P.A., Masters of Public Administration; Ph.D., Student in Urban Studies Programs; 5 years of experience in environmental justice and planning
Wafa Elqaq, P.E. WisDOT	DEIS review from a design perspective	B.S., M.S., Civil Engineering; Experience since 1988 in highway project development including environmental policies and regulations
Tony Barth, P.E.	DEIS review from a design perspective	B.S., Civil Engineering; Experience since 1993 in highway project development including environmental policies and regulations
William Mohr, P.E. WisDOT	Major projects manager	B.S., Civil and Environmental Engineering 1987; Experience in planning, project development, and construction of urban and rural highways
Forward 45, LLC		
Brad Heimlich, P.E. CH2M HILL	Project manager; engineering studies; alternatives development; EIS preparation; public involvement	B.S., Civil Engineering; 23 years experience in project management, alternatives development, and EIS preparation
Mike Paddock, P.E. CH2M HILL	Project manager; engineering studies; alternatives development; EIS preparation; public involvement	B.S., Civil Engineering and Surveying; 20 years of experience in transportation projects
Tim Anheuser, P.E. Kapur and Associates	Assistant project manager; engineering studies; alternatives development; EIS preparation; public involvement	B.S., Civil Engineering; 26 years of experience in project management, transportation design, public involvement, and environmental studies
Aaron Bubb, P.E. Kapur and Associates	EIS preparation, alternatives development	B.S., Civil Engineering; 10 years experience in transportation engineering design
Dan Dupies CH2M HILL	EIS analysis and document preparation	M.U.P., Urban and Regional Planning; 21 years of experience in transportation environmental studies and EIS preparation
Ben Goldsworthy, AICP CH2M HILL	Environmental impact analysis; EIS preparation	B.A., Political Science; M.S., Urban and Regional Planning; 8 years of experience in transportation environmental studies, and EIS preparation
John Jaeckel HNTB	Air quality and noise impact evaluation	B.S., Applied Science and Engineering; more than 36 years of experience in transportation air quality and noise mitigation for environmental studies and EIS preparation
Caron Kloser HNTB	Indirect and cumulative effects analysis	B.S., Agronomy and M.S., Horticulture; 23 years experience with transportation studies and NEPA document preparation
Andrew Kowske, P.E. HNTB	Deputy project manager; traffic analysis; public involvement; alternatives analysis	B.S., Civil Engineering; B.B.A., Real Estate and Urban Land Economics; 7 years of experience in design and construction of large transportation projects

Organization/Name	Primary Responsibility	Qualifications
Mary Ellen O'Brien Transportation Environmental Management	Environmental impact analysis; EIS preparation; agency coordination	B.S. and M.S., Environmental Sciences; Ph.D. course work in Land Resources; Experience since 1976 in transportation environmental studies and EIS preparation
Tom Pettit, P.E. CH2M HILL	Alternatives Analysis	B.S. Civil and Environmental Engineering; 21 years experience
David Rodebaugh CH2M HILL	Environmental impact analysis; EIS preparation	M.S., Urban and Regional Planning; 14 years of experience in transportation environmental studies and EIS preparation
Todd Scharra EMCS, Inc.	Environmental impact analysis	B.S., Civil Engineering; 4 years of experience in roadway design
Carolyn Seboe HNTB	Indirect and cumulative effects analysis	B.S., Geography and Master Urban Planning; 7 years of experience working on community planning, environmental documentation, and transportation planning projects
Charles Wade, AICP TranSmart	Environmental impact analysis; EIS preparation	B.A., Environmental Policy and Planning and Urban and Regional Studies; M.S., Urban and Regional Planning; 11 years of experience in transportation corridor studies and environmental documentation
Charlie Webb CH2M HILL	EIS task manager; environmental impact analysis; public involvement	M.S., Urban and Regional Planning; 18 years of experience in transportation environmental studies and EIS preparation
Mark Becherer, P.E. HNTB	Alternatives development	B.S., Civil Engineering; 25 years of experience in roadway/freeway design
Dave Brose, P.E. EMCS, Inc.	Utility and railroad impacts	B.S., Architectural Engineering; 25 years of experience in transportation project development and construction engineering
Marty Hawley, P.E., PTOE HNTB	Traffic engineering and review of traffic/operational data	B.S. and M.S., Civil Engineering; 16 years of experience in traffic engineering and freeway operations
Terry Horst, P.E. HNTB	Alternatives development	B.S., Civil Engineering; 37 years of experience in project development of transportation facilities

Index

Index

- 2035 Regional Land Use Plan, 1-5, 1-6
- 2035 Regional Transportation System Plan, 1-3, 1-6, 1-7, 1-8, 1-9, 1-10, 1-11, 2-2, 2-4, 2-6, 4-48, 5-53
- Access, 1-3, 1-7, 1-28, 1-41, 1-44, 2-1, 2-7, 2-9, 2-13, 2-16, 2-19, 2-28, 2-35, 2-41, 2-44, 2-45, 2-46, 2-47, 2-49, 2-51, 2-53, 2-61, 2-64, 2-68, 2-71, 3-10, 3-11, 3-12, 3-13, 3-21, 3-23, 3-43, 3-44, 3-45, 3-62, 3-68, 3-76, 3-82, 3-83, 3-95, 3-96, 3-100, 3-106, 3-107, 3-128, 4-21, 4-35, 5-5, 5-7, 5-8, 5-15, 5-16, 5-17, 5-18, 5-20, 5-21, 5-23, 5-26, 5-31, 5-32, 5-38, 5-43, 5-46, 5-47, 5-48, 5-49, 5-50, 5-52, 6-3, 6-5, 6-6, 6-7
- Adjacent Arterials Components, 1-11, 2-1, 2-60, 2-65, 2-70, 2-72, 4-6, 4-9, 4-20, 4-21, 4-28, 4-44, 4-45, 4-46, 4-47, 4-48, 4-49, 5-50, 5-57, 5-62, 6-7, 6-10
- Aesthetics, 3-104, 3-108, 3-133, 5-1, 5-33, 5-37, 5-52
- Agency Coordination, 1-44, 2-1, 5-1, 5-18, 5-32, 5-33, 5-34, 5-35, 5-38, 5-39, 5-40, 5-41, 5-42, 5-42, 5-62, 6-7
- Agricultural Resources, 3-68
- Air Quality, 1-6, 1-10, 1-11, 3-17, 3-24, 3-25, 3-92, 3-101, 3-104, 3-157, 3-158, 3-159, 3-160, 3-164, 3-177, 3-191, 3-192, 4-4, 5-1, 5-15, 5-16, 5-33, 5-47, 5-49, 5-54, 5-61
- Airport, 1-11, 3-21, 3-28
- Alternatives Development, 2-1, 2-46, 5-20, 5-25
- Archaeological, 3-1, 3-167, 3-168
- Boy Scouts, 2-19, 2-24, 3-71, 3-80, 5-8, 5-12
- Business, 2-4, 2-13, 2-14, 2-16, 2-19, 2-24, 2-45, 2-46, 2-60, 2-64, 2-69, 2-70, 2-71, 2-72, 3-10, 3-12, 3-13, 3-14, 3-16, 3-17, 3-59, 3-60, 3-61, 3-62, 3-63, 3-64, 3-67, 3-68, 3-95, 3-96, 3-97, 3-101, 3-102, 4-47, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-10, 5-11, 5-12, 5-15, 5-23, 5-26, 5-29, 5-31, 5-45, 5-49, 5-50, 5-62, 6-3, 6-5
- Cemeteries, 3-167
- City of Milwaukee, 1-1, 1-3, 1-4, 1-5, 1-6, 1-10, 1-11, 1-19, 1-33, 1-35, 1-41, 1-44, 2-2, 2-5, 2-9, 2-14, 2-28, 2-35, 2-39, 2-40, 2-45, 2-47, 2-60, 2-69, 2-71, 2-72, 3-1, 3-4, 3-5, 3-8, 3-9, 3-10, 3-11, 3-14, 3-15, 3-16, 3-17, 3-18, 3-19, 3-21, 3-22, 3-23, 3-24, 3-27, 3-28, 3-29, 3-30, 3-48, 3-49, 3-50, 3-60, 3-67, 3-68, 3-69, 3-71, 3-72, 3-73, 3-74, 3-76, 3-77, 3-78, 3-79, 3-80, 3-81, 3-83, 3-84, 3-87, 3-88, 3-89, 3-90, 3-91, 3-92, 3-93, 3-94, 3-96, 3-97, 3-98, 3-99, 3-101, 3-102, 3-103, 3-104, 3-105, 3-106, 3-107, 3-108, 3-110, 3-111, 3-118, 3-119, 3-122, 3-125, 3-128, 3-138, 3-140, 3-142, 3-148, 3-151, 3-152, 3-159, 3-160, 3-167, 3-169, 3-170, 3-171, 3-174, 3-175, 3-177, 3-178, 3-179, 3-180, 3-181, 3-182, 3-183, 3-184, 3-185, 3-186, 3-188, 3-195, 4-1, 4-3, 4-4, 4-5, 4-7, 4-8, 4-10, 4-11, 4-16, 4-17, 4-18, 4-21, 4-22, 4-25, 4-28, 4-29, 4-30, 4-31, 4-32, 4-33, 4-35, 4-40, 4-47, 4-48, 5-2, 5-3, 5-6, 5-10, 5-11, 5-12, 5-14, 5-15, 5-16, 5-17, 5-18, 5-19, 5-20, 5-21, 5-22, 5-23, 5-24, 5-25, 5-26, 5-27, 5-29, 5-30, 5-31, 5-32, 5-33, 5-36, 5-37, 5-38, 5-41, 5-42, 5-44, 5-44, 5-45, 5-48, 5-49, 5-50, 5-51, 5-52, 5-53, 5-54, 5-55, 5-56, 5-60, 5-62, 6-1, 6-2, 6-6, 6-7, 6-8, 6-9, 6-10
- City of Wauwatosa, 1-1, 1-4, 1-44, 2-69, 2-71, 2-72, 3-1, 3-5, 3-9, 3-22, 3-23, 3-49, 3-60, 3-61, 3-68, 3-69, 3-76, 3-77, 3-83, 3-84, 3-87, 3-88, 3-94, 3-96, 3-97, 3-98, 3-101, 3-104, 3-109, 3-111, 3-121, 3-122, 3-128, 3-169, 3-175, 3-178, 4-5, 4-17, 4-29,

- 4-35, 4-47, 5-6, 5-9, 5-11, 5-14, 5-15, 5-16, 5-17, 5-18, 5-21, 5-22, 5-24, 5-25, 5-26, 5-27, 5-28, 5-33, 5-37, 5-41, 5-42, 5-48, 5-49, 5-53, 5-54, 5-60, 5-62, 6-2, 6-5, 6-6, 6-7, 6-8, 6-9, 6-10, 6-11
- City of West Allis, 1-1, 1-44, 2-53, 2-69, 2-72, 3-1, 3-9, 3-12, 3-17, 3-18, 3-22, 3-23, 3-45, 3-49, 3-68, 3-69, 3-83, 3-84, 3-87, 3-90, 3-94, 3-96, 3-97, 3-98, 3-101, 3-104, 3-111, 3-118, 3-119, 3-128, 3-174, 3-175, 3-178, 3-179, 3-181, 3-186, 3-188, 4-4, 5-6, 5-9, 5-13, 5-14, 5-15, 5-16, 5-17, 5-19, 5-21, 5-24, 5-25, 5-26, 5-33, 5-37, 5-41, 5-42, 5-45, 5-49, 5-53, 5-54, 5-60, 5-62, 6-2, 6-6
- Clean Air Act, 1-10, 3-25, 3-157, 3-159
- Clean Water Act, 1-45, 2-72, 3-114, 3-117, 3-129, 3-135
- Commercial, 1-11, 1-41, 2-16, 2-24, 2-28, 2-35, 2-65, 2-69, 3-4, 3-5, 3-7, 3-9, 3-10, 3-15, 3-16, 3-17, 3-21, 3-60, 3-61, 3-62, 3-67, 3-68, 3-93, 3-96, 3-97, 3-108, 3-109, 3-148, 3-151, 3-152, 3-192, 3-196, 4-43, 5-1, 5-5, 5-33, 5-51
- Community Cohesion, 3-93, 3-100
- Construction Impacts, 3-20, 3-47, 3-101, 3-105, 3-190, 3-196
- Crashes, 1-4, 1-5, 1-12, 1-13, 1-14, 1-28, 1-31, 1-32, 1-44, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-13, 2-39, 2-40, 2-41, 2-44, 2-68, 3-44, 3-64, 3-67, 3-99, 3-102, 3-189, 4-6, 5-15, 5-46, 5-60, 6-2
- Department of Natural Resources (DNR), 1-10, 1-44, 2-35, 2-43, 2-71, 3-4, 3-14, 3-15, 3-19, 3-20, 3-21, 3-25, 3-26, 3-30, 3-50, 3-60, 3-67, 3-73, 3-111, 3-114, 3-117, 3-121, 3-122, 3-126, 3-127, 3-129, 3-133, 3-136, 3-141, 3-142, 3-160, 3-161, 3-164, 3-165, 3-174, 3-177, 3-178, 3-180, 3-182, 3-188, 3-192, 3-194, 3-195, 3-196, 4-3, 4-4, 4-40, 5-16, 5-25, 5-33, 5-35, 5-40, 5-49, 5-50, 5-60, 6-6, 6-7, 6-8
- Des Plaines River, 3-111
- Development, 1-3, 1-4, 1-5, 1-6, 1-7, 1-21, 1-31, 1-35, 1-41, 1-44, 1-45, 2-1, 2-3, 2-4, 2-44, 2-60, 2-72, 3-4, 3-5, 3-9, 3-10, 3-11, 3-12, 3-14, 3-15, 3-16, 3-17, 3-18, 3-19, 3-20, 3-21, 3-22, 3-23, 3-24, 3-26, 3-27, 3-51, 3-59, 3-60, 3-61, 3-93, 3-106, 3-113, 3-116, 3-126, 3-127, 3-129, 3-148, 3-150, 3-168, 3-178, 3-188, 3-194, 3-195, 4-4, 5-1, 5-2, 5-4, 5-13, 5-14, 5-16, 5-17, 5-18, 5-19, 5-20, 5-21, 5-22, 5-24, 5-25, 5-28, 5-32, 5-33, 5-38, 5-41, 5-42, 5-42, 5-43, 5-46, 5-49, 5-55, 5-56, 5-60, 5-62, 6-9
- Drinking Water, 3-128
- Economic Impacts, 2-1, 3-157, 3-190, 5-15
- Employment, 1-6, 3-9, 3-21, 3-23, 3-90, 3-91, 3-92, 3-100, 3-190, 5-12
- Energy, 3-26, 3-143, 3-146, 3-147, 3-197, 5-20, 5-43, 5-55
- Environmental Corridors, 1-6, 1-45, 3-10, 3-18, 3-21, 3-104, 3-121, 3-122, 3-124, 3-125, 3-129, 3-138, 5-49
- Environmental Justice, 3-99, 3-100, 3-104, 5-1, 5-33, 5-46, 5-53
- Environmental Protection Agency (U.S. EPA), 1-10, 1-44, 1-45, 2-71, 2-72, 3-24, 3-25, 3-59, 3-115, 3-128, 3-129, 3-135, 3-136, 3-157, 3-158, 3-159, 3-160, 3-163, 3-164, 3-191, 3-192, 5-2, 5-24, 5-33, 5-34, 5-39, 5-48, 5-54, 5-60, 5-61, 6-5, 6-7
- Eschweiler Buildings, 3-140, 3-141, 3-169, 3-171, 4-5, 4-8, 4-34, 4-35, 4-36, 4-37, 4-40, 5-37, 5-44, 6-9
- Federal Highway Administration (FHWA), 1-1, 1-3, 1-4, 1-11, 1-12, 1-21, 1-31, 1-33, 1-41, 1-45, 2-3, 2-4, 2-7, 2-14, 2-16, 2-19, 2-40, 2-41, 2-43, 2-44, 2-45, 2-46, 2-47, 2-49, 2-61, 2-72, 3-8, 3-10, 3-19, 3-20, 3-22, 3-25, 3-47, 3-51, 3-83, 3-92, 3-100, 3-104, 3-108, 3-109, 3-116, 3-119, 3-128, 3-136, 3-144, 3-145, 3-146, 3-147, 3-160, 3-162, 3-165, 3-174, 3-177, 3-180, 3-182, 3-188, 3-193, 4-1, 4-4, 4-6, 4-21, 4-22, 4-25, 4-40, 4-43, 4-48, 5-1, 5-2,

- 5-6, 5-9, 5-24, 5-25, 5-32, 5-33, 5-34, 5-35,
5-39, 5-40, 5-50, 5-51, 5-52, 5-57, 5-58,
5-59, 5-60, 5-61, 5-62, 6-5, 6-6, 6-7
- Fish and Wildlife Service (FWS), 2-71,
3-136, 5-33, 5-39, 6-5
- Floodplain, 3-16, 3-17, 3-18, 3-19, 3-114,
3-125, 3-126, 3-127, 3-132, 5-1, 5-33, 5-37
- Groundwater, 3-115, 3-116, 3-127, 3-128,
3-133, 3-138
- Hank Aaron State Trail, 2-71, 3-5, 3-30,
3-50, 3-53, 3-138, 3-177, 3-180, 3-181,
3-182, 3-186, 4-3, 4-4, 4-25, 4-40, 5-7, 5-8,
5-16, 5-28, 5-36, 5-40, 5-49, 5-50, 6-3, 6-6,
6-9
- Hazardous Materials, 3-68, 3-164, 3-166,
3-195, 5-1, 5-33
- Historic Resources, 3-21, 3-22, 3-174, 4-43,
6-6
- Honey Creek Parkway, 3-5, 3-138, 3-170,
3-173, 3-175, 3-181, 3-182, 3-188, 4-5, 4-8,
4-26, 4-27, 4-28, 4-29, 5-37, 5-51, 6-8
- Income, 3-60, 3-87, 3-88, 3-90, 3-100, 3-101,
3-102, 3-103, 3-104, 3-105, 3-106, 3-107,
3-108, 5-1, 5-53, 5-55, 6-7
- Indirect Effects, 3-8, 3-9, 3-10, 3-11, 3-12,
3-14, 3-15, 3-16, 3-21, 3-45, 3-59, 3-93,
3-196, 5-51, 5-55
- Industrial, 3-4, 3-5, 3-9, 3-15, 3-17, 3-18,
3-53, 3-60, 3-61, 3-62, 3-67, 3-108, 3-109,
3-114, 3-127, 3-143, 5-15
- Land and Water Conservation Fund
(LWCF), 3-175, 3-177, 4-1
- Land Use, 1-5, 1-6, 1-7, 1-9, 1-24, 2-44, 3-1,
3-4, 3-5, 3-7, 3-8, 3-9, 3-10, 3-12, 3-14,
3-15, 3-18, 3-19, 3-21, 3-26, 3-108, 3-109,
3-113, 3-122, 3-146, 3-150, 3-164, 3-191,
4-6, 5-17, 5-18, 5-19, 5-20, 5-24, 5-52
- Level of Service, 1-5, 1-33, 1-34, 1-35, 1-36,
1-41, 1-44, 2-1, 2-4, 2-13, 2-39, 2-40, 2-45,
2-49, 2-60, 2-68, 2-72, 3-13, 3-14, 3-31,
3-32, 3-44, 4-6, 5-46, 6-2
- Mass Transit, 3-27, 3-30, 3-99, 3-105, 3-106,
3-107, 5-47, 5-52, 5-53, 5-61, 6-7, 6-8
- Measures to Minimize Adverse Effects,
3-135
- Milwaukee County Parks, 3-71, 3-80, 3-81,
3-119, 3-169, 3-170, 3-180, 3-182, 3-186,
4-5, 4-8, 4-17, 4-22, 4-28, 4-29, 4-30, 4-31,
4-32, 4-33, 5-19, 5-20, 5-24, 5-37, 6-9
- Milwaukee County Research Park, 1-4,
1-35, 1-41, 2-9, 2-28, 2-35, 2-60, 2-71, 3-4,
3-9, 3-10, 3-11, 3-17, 3-18, 3-27, 3-30,
3-60, 4-47, 4-48, 5-2, 5-6, 5-7, 5-8, 5-15,
5-21, 5-22, 5-23, 5-27, 5-30, 5-31, 5-32,
5-52, 5-62
- Milwaukee County Zoo, 1-1, 1-3, 1-4, 1-5,
1-8, 1-9, 1-10, 1-11, 1-12, 1-15, 1-19, 1-21,
1-24, 1-26, 1-28, 1-29, 1-30, 1-33, 1-35,
1-36, 1-44, 2-3, 2-7, 2-13, 2-14, 2-15, 2-16,
2-19, 2-24, 2-35, 2-40, 2-41, 2-43, 2-45,
2-46, 2-69, 2-71, 2-72, 3-1, 3-4, 3-5, 3-8,
3-9, 3-10, 3-15, 3-16, 3-17, 3-18, 3-19,
3-20, 3-21, 3-22, 3-23, 3-24, 3-25, 3-27,
3-28, 3-43, 3-47, 3-48, 3-49, 3-50, 3-51,
3-52, 3-53, 3-54, 3-62, 3-68, 3-69, 3-71,
3-80, 3-81, 3-90, 3-93, 3-94, 3-96, 3-97,
3-98, 3-101, 3-108, 3-109, 3-110, 3-111,
3-113, 3-121, 3-122, 3-124, 3-128, 3-132,
3-135, 3-136, 3-138, 3-139, 3-141, 3-142,
3-144, 3-148, 3-151, 3-152, 3-160, 3-167,
3-170, 3-172, 3-174, 3-175, 3-177, 3-178,
3-179, 3-181, 3-183, 3-184, 3-185, 3-186,
3-188, 3-193, 4-1, 4-3, 4-4, 4-5, 4-6, 4-7,
4-10, 4-17, 4-18, 4-19, 4-20, 4-21, 4-22,
4-25, 4-40, 5-1, 5-2, 5-4, 5-11, 5-17, 5-18,
5-19, 5-20, 5-30, 5-31, 5-32, 5-34, 5-35,
5-37, 5-38, 5-40, 5-41, 5-43, 5-44, 5-45,
5-62, 6-7
- Milwaukee Metropolitan Sewerage
District, 1-4, 4-5, 4-6, 4-9, 4-35, 4-44,
4-45, 5-17, 5-19, 5-24, 5-25, 5-38, 5-44,
5-49, 5-57, 6-6, 6-8
- Milwaukee Metropolitan Sewerage
District (MMSD), 3-4, 3-17, 3-19, 3-20,
3-49, 3-94, 3-104, 3-113, 3-114, 3-116,

- 3-118, 3-119, 3-121, 3-142, 3-178, 5-19, 5-24, 5-25, 5-38, 5-44
- Milwaukee Regional Medical Center, 1-4, 1-11, 1-35, 2-9, 2-28, 2-35, 2-47, 2-60, 2-69, 3-4, 3-9, 3-10, 3-11, 3-17, 3-18, 3-20, 3-27, 3-30, 3-43, 3-48, 3-73, 3-81, 3-82, 3-94, 3-108, 5-2, 5-6, 5-7, 5-8, 5-11, 5-15, 5-16, 5-19, 5-20, 5-21, 5-22, 5-24, 5-27, 5-48, 5-49, 5-50, 5-52, 5-62
- Mineral Resources, 3-166
- Mitigation Measures, 3-15, 3-16, 3-22, 3-23, 3-100, 3-121, 3-188, 3-193, 4-17, 4-22, 4-29, 4-43, 5-37, 5-48, 6-5
- Mobile Source Air Toxics (MSATs), 3-25, 3-104, 3-159, 3-160, 3-162, 3-163, 5-48, 5-54, 6-5
- Muirdale Sanatorium, 4-5
- Natural Areas, 3-18, 3-21, 3-114, 3-121, 3-122, 3-124, 3-125, 3-138, 4-3
- Noise, 2-71, 2-72, 3-23, 3-51, 3-52, 3-53, 3-69, 3-76, 3-77, 3-78, 3-79, 3-100, 3-101, 3-104, 3-108, 3-109, 3-110, 3-143, 3-144, 3-145, 3-146, 3-147, 3-148, 3-149, 3-150, 3-151, 3-152, 3-153, 3-180, 3-181, 3-186, 3-190, 3-191, 3-196, 4-16, 4-17, 5-1, 5-7, 5-8, 5-9, 5-13, 5-14, 5-15, 5-25, 5-28, 5-33, 5-36, 5-37, 5-38, 5-42, 5-47, 5-49, 5-52, 6-4, 6-6
- Oak Creek, 3-24, 5-45
- Oak Leaf Trail, 3-30, 3-119, 3-175, 3-177, 3-180, 3-182, 3-188, 4-1, 4-3, 4-4, 4-7, 4-10, 4-11, 4-16, 4-17, 6-6, 6-8, 6-9
- Park-and-Ride Lots, 3-27, 3-28, 3-71, 3-73, 3-80, 3-81, 3-135, 3-193, 5-18
- Parks, 1-3, 1-4, 1-11, 1-35, 1-36, 1-45, 2-9, 2-28, 2-35, 2-53, 2-64, 3-4, 3-7, 3-10, 3-16, 3-17, 3-22, 3-23, 3-27, 3-28, 3-60, 3-61, 3-71, 3-73, 3-80, 3-81, 3-82, 3-93, 3-94, 3-119, 3-135, 3-169, 3-170, 3-174, 3-175, 3-177, 3-178, 3-179, 3-180, 3-182, 3-186, 3-193, 4-1, 4-3, 4-4, 4-5, 4-7, 4-8, 4-10, 4-17, 4-22, 4-23, 4-24, 4-25, 4-28, 4-29, 4-30, 4-31, 4-32, 4-33, 5-2, 5-4, 5-5, 5-6, 5-7, 5-8, 5-13, 5-15, 5-18, 5-19, 5-20, 5-21, 5-22, 5-23, 5-24, 5-26, 5-27, 5-30, 5-31, 5-32, 5-33, 5-36, 5-37, 5-39, 5-43, 5-44, 5-51, 5-52, 6-9
- Permits, 1-15, 1-21, 3-15, 3-18, 3-21, 3-22, 3-25, 3-160, 5-49, 6-5, 6-6
- Planning, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 1-10, 1-33, 2-1, 3-1, 3-9, 3-15, 3-26, 3-102, 3-150, 3-194, 4-1, 4-3, 4-4, 4-6, 4-48, 5-3, 5-11, 5-13, 5-17, 5-18, 5-19, 5-20, 5-24, 5-29, 5-36, 5-42, 5-54, 5-56, 5-58, 6-8
- Population, 1-6, 3-8, 3-9, 3-23, 3-83, 3-84, 3-86, 3-87, 3-90, 3-93, 3-100, 3-101, 3-102, 3-104, 3-107, 3-108, 3-140, 3-158, 4-4, 5-1, 5-14, 5-18, 5-21, 5-53, 5-54, 6-1
- Poverty, 3-88, 3-101, 3-103
- Property Acquisition, 2-71, 3-14, 3-59, 3-67, 3-108, 3-148, 4-7, 4-47, 5-16
- Public Hearing, 1-10, 1-44, 2-1, 2-14, 2-39, 2-40, 2-46, 2-47, 2-49, 2-53, 2-60, 2-65, 2-68, 2-70, 5-1, 5-28, 5-36, 5-45, 5-46, 5-47, 5-48, 5-51, 5-52, 5-59, 5-61, 6-1, 6-2, 6-3, 6-4, 6-7, 6-10
- Public Information Meetings, 2-2, 2-4, 2-19, 2-39, 2-40, 2-44, 2-47, 2-53, 5-1, 5-2, 5-3, 5-6, 5-9, 5-10, 5-11, 5-20, 5-21, 5-30, 5-32, 5-33, 5-36, 6-3
- Public Involvement, 2-1, 2-39, 2-72, 3-99, 3-100, 3-101, 3-102, 3-150, 5-1, 5-10, 5-17, 5-30, 5-32, 5-45, 5-46, 6-1
- Public Services, 3-4, 3-15, 3-68, 3-83
- Public Use Land, 2-72, 3-50, 3-71, 3-80, 3-81, 3-101, 3-104, 3-174, 3-176, 3-179, 3-188, 4-6, 5-1, 5-33
- Purpose and Need, 3-149, 4-6, 5-1, 5-2, 5-3, 5-29, 5-33, 5-34, 5-39, 5-40, 5-41, 5-42, 5-42
- Reduced Impacts Alternative, 2-1, 2-2, 2-14, 2-49, 2-51, 2-52, 2-53, 2-54, 2-55, 2-56, 2-57, 2-60, 2-61, 2-65, 2-66, 2-68, 2-69, 2-70, 2-71, 2-72, 2-73, 4-7, 4-11,

- 4-13, 4-14, 4-16, 4-20, 4-21, 4-22, 4-24,
4-25, 4-27, 4-28, 4-32, 4-33, 4-35, 4-37,
4-39, 4-40, 4-42, 4-43, 4-45, 4-47, 4-48,
5-50, 5-51, 5-52, 5-55, 5-57, 5-62, 6-3, 6-4,
6-6, 6-7, 6-9, 6-10
- Relocations, 2-9, 2-13, 2-14, 2-16, 2-19, 2-24,
2-28, 2-35, 2-39, 2-41, 2-43, 2-45, 2-46,
2-47, 2-49, 2-51, 2-53, 2-60, 2-64, 2-69,
2-70, 2-72, 3-14, 3-21, 3-49, 3-50, 3-51,
3-53, 3-54, 3-59, 3-60, 3-62, 3-64, 3-67,
3-68, 3-79, 3-80, 3-81, 3-83, 3-93, 3-98,
3-99, 3-102, 3-103, 3-108, 3-109, 3-110,
3-119, 3-180, 3-181, 3-182, 3-186, 3-196,
4-7, 4-21, 4-22, 5-7, 5-8, 5-14, 5-15, 5-16,
5-19, 5-20, 5-26, 5-36, 5-43, 5-46, 5-49,
5-50, 5-51, 5-52, 5-55, 6-3, 6-6
- Residential, 1-41, 2-16, 2-19, 2-24, 2-28,
2-35, 2-41, 2-46, 2-47, 2-51, 2-60, 2-65,
2-69, 2-72, 3-4, 3-5, 3-7, 3-9, 3-10, 3-14,
3-15, 3-16, 3-23, 3-51, 3-52, 3-53, 3-54,
3-55, 3-56, 3-59, 3-60, 3-61, 3-69, 3-71,
3-78, 3-93, 3-96, 3-97, 3-99, 3-101, 3-102,
3-103, 3-108, 3-113, 3-144, 3-149, 3-192,
3-196, 4-6, 4-9, 4-43, 4-44, 4-45, 5-1, 5-7,
5-8, 5-26, 5-33, 5-36, 5-50, 5-51, 6-3, 6-9,
6-11
- Safety, 1-1, 1-3, 1-4, 1-7, 1-11, 1-12, 1-21,
1-24, 1-31, 1-41, 1-44, 2-1, 2-3, 2-4, 2-6,
2-7, 2-13, 2-14, 2-41, 2-49, 2-68, 2-72, 3-8,
3-11, 3-21, 3-44, 3-60, 3-64, 3-99, 3-126,
3-157, 3-158, 3-195, 3-196, 3-197, 4-6,
4-16, 4-21, 4-25, 4-40, 5-7, 5-9, 5-14, 5-16,
5-26, 5-50, 5-51, 5-53, 6-4, 6-10
- Schools, 1-45, 2-35, 2-65, 2-71, 2-72, 3-4, 3-5,
3-27, 3-28, 3-69, 3-73, 3-76, 3-77, 3-78, 3-79,
3-83, 3-88, 3-90, 3-93, 3-94, 3-98,
3-103, 3-109, 3-148, 3-151, 3-152, 3-160,
3-163, 3-169, 3-171, 3-178, 3-196, 4-4, 4-5,
4-6, 4-21, 4-35, 4-45, 5-3, 5-6, 5-9, 5-10,
5-14, 5-26, 5-27, 5-45, 5-49, 5-54, 6-4, 6-5,
6-6, 6-9, 6-10, 6-11
- Section 4(f), 3-23, 3-169, 4-1, 4-2, 4-3, 4-4,
4-5, 4-6, 4-7, 4-10, 4-11, 4-16, 4-17, 4-18,
4-22, 4-28, 4-29, 4-35, 4-40, 4-43, 4-45,
4-47
- Section 6(f), 4-1
- Socioeconomic Characteristics, 3-1, 3-83
- Soils, 3-100, 3-113, 3-115, 3-116, 3-119,
3-128, 3-130, 3-132, 3-138, 3-140, 3-164,
3-166, 3-192, 3-194, 3-196
- Southeastern Wisconsin Regional
Planning Commission (SEWRPC), 1-3,
1-5, 1-6, 1-8, 1-9, 1-10, 1-15, 1-33, 1-36,
2-2, 2-4, 2-5, 2-6, 2-43, 3-1, 3-8, 3-19, 3-25,
3-27, 3-87, 3-90, 3-91, 3-92, 3-105, 3-106,
3-114, 3-121, 3-122, 3-129, 3-157, 3-159,
3-193, 4-3, 4-4, 4-48, 5-16, 5-17, 5-19,
5-25, 5-52, 5-53, 5-54, 5-55, 5-56, 5-58,
6-7
- St. Jude the Apostle Roman Catholic
Church Complex, 2-71, 4-6, 4-45, 4-47,
6-5
- State Fair Park, 1-11, 1-36, 2-19, 2-24, 2-69,
3-5, 3-9, 3-11, 3-13, 3-17, 3-23, 3-27, 3-45,
3-71, 3-73, 3-76, 3-80, 3-81, 3-82, 3-83,
3-108, 3-111, 5-2, 5-8, 5-18, 5-19, 5-20,
5-38, 5-52, 6-6
- Storm Water, 3-104, 3-114, 3-115, 3-116,
3-117, 3-118, 3-119, 3-125, 3-132, 3-133,
3-194, 5-42, 5-44
- Stormwater, 2-46, 2-49, 2-53, 2-60, 2-70,
2-72, 3-15, 3-18, 3-20, 3-104, 3-112, 3-113,
3-114, 3-115, 3-116, 3-117, 3-118, 3-119,
3-121, 3-124, 3-125, 3-129, 3-130, 3-132,
3-133, 3-173, 3-180, 3-181, 3-182, 3-186,
3-194, 4-8, 4-11, 4-17, 4-28, 4-29, 5-17,
5-18, 5-19, 5-25, 5-28, 5-36, 5-37, 5-38,
5-44, 5-44, 5-47, 5-48, 5-49, 5-51, 5-57,
6-4, 6-5, 6-6, 6-8, 6-10
- Surface Water, 3-127, 5-48, 5-49
- Tax Base, 3-15, 3-23, 3-94, 3-96, 3-97, 3-196,
5-36
- Threatened and Endangered Species, 3-15,
3-16, 3-17, 3-21, 3-141, 3-142, 5-1, 5-33,
5-35, 5-39, 5-40
- Traffic Forecasts, 1-4, 1-7, 1-33, 1-36, 5-55,
5-58, 6-7

Traffic Volumes, 1-1, 1-5, 1-7, 1-8, 1-12, 1-21, 1-30, 1-33, 1-35, 1-36, 1-37, 1-41, 1-44, 2-4, 2-5, 2-6, 2-7, 2-13, 2-39, 2-40, 2-47, 2-64, 2-68, 3-30, 3-31, 3-32, 3-43, 3-44, 3-99, 3-160, 3-162, 3-189, 3-193, 4-6, 5-55, 5-57, 5-61, 6-9

Truck Traffic, 3-148

U.S. Army Corps of Engineers (Corps), 1-44, 1-45, 2-6, 2-71, 2-72, 3-15, 3-128, 3-129, 3-130, 3-132, 3-135, 3-136, 3-170, 5-2, 5-33, 5-34, 5-39, 5-49, 5-56, 5-60, 6-5, 6-7

Underwood Parkway, 2-35, 4-11, 4-17, 5-44, 5-51, 6-8, 6-9

Union Pacific Railroad, 1-30, 3-5, 3-22, 3-30, 3-31, 3-47, 3-52, 3-61, 3-172, 3-179, 3-180, 3-182, 4-3, 4-4, 4-5, 4-9, 4-38, 4-39, 4-40, 4-43, 4-48, 5-7, 5-25, 5-35, 5-38, 5-45

Upland Habitat, 3-138, 3-139, 3-140, 5-1, 5-33

US Army Corps of Engineers (Corps), 3-15, 3-128, 3-129, 3-130, 3-132, 3-135, 3-136, 3-170, 5-2, 5-33, 5-34, 5-39, 5-49, 6-5

Utilities, 1-5, 2-46, 2-53, 2-69, 3-4, 3-8, 3-47, 3-49, 3-50, 3-51, 3-91, 3-92, 3-128, 3-164, 5-8, 5-19, 5-24, 5-26, 5-36, 5-38, 5-43, 5-44, 5-46, 5-51, 5-52, 5-55

Water Quality, 2-70, 3-15, 3-16, 3-17, 3-18, 3-19, 3-20, 3-26, 3-101, 3-104, 3-113, 3-114, 3-115, 3-117, 3-119, 3-121, 3-128, 3-129, 3-133, 3-173, 3-194, 3-195, 5-42

Water Supply, 3-127

Wetlands, 1-45, 2-72, 3-128, 3-129, 3-132, 3-133, 3-134, 3-135, 3-136, 3-195, 3-196, 5-1, 5-33, 5-34, 5-48, 5-49, 6-5

Wildlife, 3-104, 3-132, 3-140, 4-1, 5-1, 5-7, 5-9, 5-33, 5-39, 5-47, 5-48, 5-51, 6-5

Wil-O-Way Special Recreation Center, 2-35, 3-4, 3-22, 3-23, 3-98, 3-99, 3-105, 3-122, 3-144, 3-175, 3-179, 3-180, 3-181, 3-182, 3-188, 4-1, 4-3, 4-7, 4-10, 4-11, 4-15, 4-16, 4-17, 5-14, 5-37, 5-44, 5-51

Wisconsin Lutheran College, 3-4, 5-14, 5-22

Zoning, 3-15, 3-18, 3-19, 3-21, 3-26, 3-59, 3-67, 3-126, 3-196