Impact Analysis Methodology Report

As part of the Madison Beltline Planning and Environment Linkages (PEL) Corridor Study process for

US 12
Madison Beltline
US 14 to County N
Dane County, Wisconsin

WisDOT Project I.D. 5304-02-02 and 5304-02-04

Prepared for:

Wisconsin Department of Transportation
Southwest Region
2101 Wright Street
Madison, WI 53704

U.S. Department of Transportation–Federal Highway Administration

Wisconsin Department of Transportation

August 2021

Table of Contents

Page

Table of Contents (continued)

Table of Contents (continued)

List of Figures

Revision History

This Impact Analysis Methodology (IAM) Report for the Madison Beltline Planning and Environment Linkages (PEL) Corridor Study, herein referred to as PEL Study, is intended to be a dynamic document that will be available to stakeholders and updated as appropriate throughout the duration of the project. The following is a record of substantive changes made to this document.

The Lead Agencies, Federal Highway Administration (FHWA) and the Wisconsin Department of Transportation (WisDOT), will make the IAM available to other agencies and the public in the ways identified in Section 1.1. The IAM will be revised when there have been substantive changes in the PEL Study activities or actions. Revisions and changes to the IAM will be communicated to agencies in a timely manner and shared with the public in ways identified in Section 1.1.

Impact Analysis Methodology Version	Date of change	Revision Description
1.0	August 2021	Initial IAM Report

Section 1

1.0 Introduction

1.1 Purpose of Impact Analysis Methodology

The planning and environmental review processes associated with the National Environmental Policy Act (NEPA) requires interagency coordination and public involvement prior to final decisions being made or actions taken by WisDOT or the FHWA, the joint lead agencies. Other federal, state, and local agencies that are involved in the study process are designated as Cooperating or Participating Agencies. The Cooperating and Participating Agencies and their roles are identified in the *Coordination Plan for Agency and Public Involvement* for this project. This IAM Report presents the proposed methodologies to be used for the PEL Study.

The purpose of the IAM Report is to communicate and document the Joint Lead Agencies' structured approach to analyzing impacts of the proposed transportation project and its alternatives. Collaboration on the impact analysis methodology is intended to promote an efficient and streamlined process and early resolution of concerns or issues.

The methodology discussion for each resource known or believed to be located in the project area is broken into three subsections. The first subsection identifies the laws, regulations, and guidelines applicable to the particular resource. The second subsection discusses the general methodologies commonly used on proposed WisDOT transportation projects to define, identify, and determine potential impacts to the resource. The third subsection discusses any project-specific methodologies to further refine work completed under the general methodologies.

1.2 Project Background

In 2005, WisDOT began a Safety and Operational Needs Assessment that examined the same 20 miles of the Beltline covered by this PEL Study. The Safety and Operational Needs Study was split into three phases and documented in three project reports. The Phase I and II reports were released in 2008. The Phase I report analyzed crashes and traffic volumes and summarized existing and future safety and operational issues along the length of the corridor. It also catalogued the physical features of the roadway and identified structural and geometric standard deficiencies. The Phase II report summarized and prioritized short-term improvements that would address some of the safety and operational issues identified in Phase I. The intent of the Phase II improvements was to extend the useful life of the Beltline by 10 to 15 years without adding capacity. Construction of these improvements began in 2008 and continued through 2014. The Phase III report, released in 2012, examined the viability of additional grade-separated crossings of the Beltline at various locations throughout the corridor. The PEL Study will make use of and build upon the findings documented in the 2008 and 2012 reports.

The PEL Study began in 2013 with an updated assessment of current conditions on the Beltline. The current and future deficiencies, issues and needs were identified and documented in a problem statement. The goals and objectives for the Beltline were also developed. A variety of strategies that might address the objectives were developed. These strategies focused on the Beltline and its connections to the adjacent road network, but the study team also examined the benefits of changes, improvements, or additions to the

surrounding transportation networks. Other travel modes in the general area were also analyzed. Extensive coordination with FHWA and other Federal and State Agencies, city of Madison and surrounding local governments, and numerous other stakeholders have been ongoing throughout the study process. Screening criteria was developed to evaluate the ability of each strategy to address the problem statement and objectives. Only those reasonable strategies and concepts identified in the PEL Study will likely be carried forward for detailed study in future NEPA documents.

The PEL Study was put on hold in 2016 while WisDOT reevaluated planning priorities statewide. Coordination will continue and the PEL Study is anticipated to finish in Fall 2022.

The environmental analysis will be documented in the PEL Summary Report. It will be used to aid in the identification of future NEPA document types and for scoping future NEPA projects. No impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Public involvement is a critical component of the PEL Study, and it has and will continue to occur throughout the development of the PEL Study. Supporting documents will be made available for review by federal and state resource agencies and the public. Specific efforts to encourage involvement by, and solicit comments from, minority and low-income populations in the study area will be made, with public involvement meetings (PIMs) held throughout the environmental document process. Public notice of the PIMs will be provided.

1.3 Corridor Description

The PEL Study corridor begins at the US 12/14 (University Avenue) interchange in the city of Middleton and extends approximately 20 miles south and east to the US 12/18 and County N interchange in the town of Cottage Grove (see Figure 1). Four US highway routes (US 12, US 14, US 18, and US 151) are fully or partially routed on the Beltline corridor. All four routes are concurrent between the Verona Road (US 18/151) and Park Street (US 14) interchanges. Within the corridor study limits, US 12 passes through the cities of Middleton, Madison, Fitchburg, and Monona and the town of Cottage Grove. Figure 1 shows a map of the Beltline and vicinity. The WisDOT Connections 2030 Long-Range Multimodal Transportation Plan, adopted in October 2009, identifies US 12 as a Connector Route west of Verona Road and east of I-39/90 and a Backbone Route from Verona Road to I-39/90.

In addition to serving as a major regional transportation link, the Beltline serves as a local transportation corridor for the communities it passes through. Because of the nature of the geography and development surrounding the Beltline, it is the only continuous east-west route on the south side of Madison. Other east-west routes north of the Beltline are severed by the University of Wisconsin (UW) Arboretum, Lake Wingra, and Lake Monona. Other east-west routes south of the Beltline pass through residential neighborhoods and wetlands and are not continuous. As a result, the Beltline is critical to the mobility of local traffic.

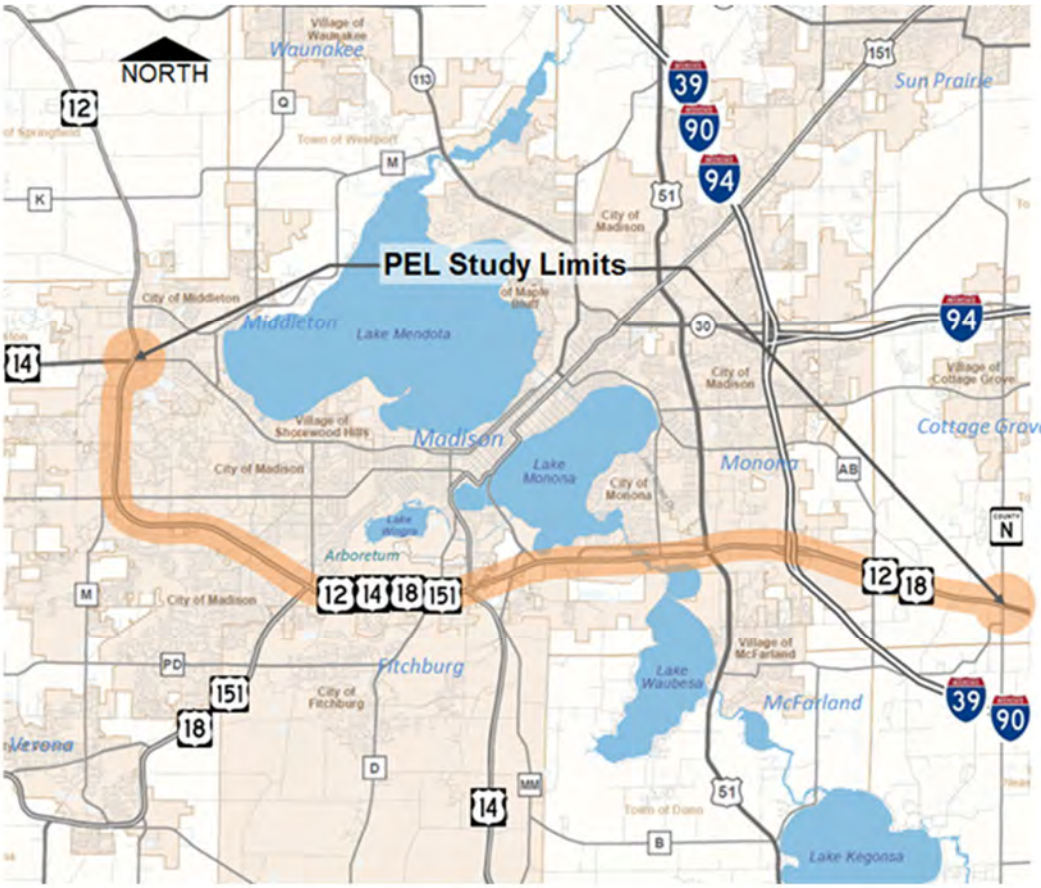

Figure 1 Project Location Map

Section 2

2.0 Agricultural Impact Methodology

2.1 Laws, Regulations, and Guidelines

Agricultural impacts are evaluated in accordance with these key laws, regulations, or guidelines.

- Farmland Protection Policy Act of 1981 (7 USC 4201-4209)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- WisDOT Facilities Development Manual (FDM) Chapter 24, Section 10, Agricultural Lands
- Chapter 32.035, Wisconsin Statutes, Agricultural Impact Statement

2.2 General Methodology

To the extent practicable, the proposed transportation action and its alternatives are developed to minimize impacts on farmland and maximize compatibility with state and local farmland programs and policies. If new right of way is to be acquired, a Farmland Conversion Impact Rating form would be prepared and coordinated with the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). Agricultural impacts are quantified and reported to the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP). Based on the extent of the impacts, DATCP will determine whether an Agricultural Impact Statement is required.

2.3 Project Specific Methodology

Limited agricultural lands exist along the corridor. The PEL Study will inventory agricultural lands using aerial photography and land use maps. No agricultural impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation. A Farmland Conversion Impact Rating form and an Agricultural Impact Notice will not be prepared.

Section 3

3.0 Upland Habitat / Wildlife Impact Methodology

3.1 Laws, Regulations, and Guidelines

Upland habitat and wildlife impacts are evaluated in accordance with these key laws, regulations, or guidelines.

- Fish and Wildlife Coordination Act as amended (16 USC 661-667)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- WisDOT FDM Chapter 24, Section 10, Land and Water Resource Impacts
- FHWA Guidelines for Consideration of Highway Project Impacts on Fish and Wildlife Resources, 1989

3.2 General Methodology

Upland habitat includes non-wetland areas that have vegetative cover suitable for supporting wildlife. Such areas include woodlands and shrub thickets, fallow fields, fence lines, and remnant prairies dominated by grasses and forbs. WisDOT coordinates with the Wisconsin Department of Natural Resources (WDNR), other agencies, and regional planning commissions as appropriate to obtain information on the quality and classification of wildlife habitat in the project's area of potential effect.

Impact evaluation includes an assessment of existing conditions (community type, connectivity to other resources, wildlife associations), amount and type of habitat affected by the proposed project, fragmentation or severance of ecosystems, and possible effects on wildlife permanently inhabiting or passing through the upland habitat areas. At this time, FHWA does not have a policy for mitigating upland habitat impacts. It is FHWA's position that normal practices such as providing appropriate management of highway right of way, using location, design, and construction techniques to minimize habitat impacts, and reestablishment of suitable vegetated areas through appropriate landscaping will adequately mitigate the loss of upland wildlife habitat.

3.3 Project Specific Methodology

The PEL Study will inventory upland habitat using aerial photography, land use maps, and data provided by WDNR from the Natural Heritage Inventory (NHI) database. No upland habitat or wildlife impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 4

4.0 Threatened and Endangered Species Impact Methodology

4.1 Laws, Regulations, and Guidelines

Threatened and endangered species impacts are evaluated in accordance with these key laws; regulations or guidelines:

- Endangered Species Act of 1973 (7 USC 136; 16 USC 1531-1544)
- Migratory Bird Treaty Act (16 USC 661)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- FHWA guidance memorandum, Management of the Endangered Species Act Environmental Analysis and Consultation Process, 2002
- Wisconsin Administrative Code (WAC) Chapter NR 27, Endangered and Threatened Species, 2005
- WisDOT/WDNR Cooperative Agreement Amendment, Memorandum of Understanding (MOU) on Endangered and Threatened Species Consultation, 1998
- WisDOT FDM Chapter 24, Land and Water Resources
- U.S. Army Corps of Engineers (USACE) Regulations for Processing Department of the Army Permits (33 Code of Federal Regulations [CFR], Part 325); regulations include consideration of threatened and endangered species.
- Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)

4.2 General Methodology

The impact evaluation for threatened and endangered species includes a determination of the presence or absence of any federally listed or state listed threatened or endangered species or their critical habitat in the transportation project's area of effort. The presence or absence determination is made in consultation with WDNR and the U.S. Fish and Wildlife Service (USFWS) and may include field inventories by qualified resource biologists.

If federally threatened or endangered species or their critical habitat are present and cannot be avoided by location and design refinements to the proposed transportation project, consultation would occur under Section 7 of the Endangered Species Act. FHWA is the lead agency for Section 7 consultation, in cooperation with WisDOT. Consultation would involve applicable agencies including the USFWS and WDNR.

For state listed species, WisDOT would develop a conservation plan or lay the groundwork for an incidental take permit in consultation with WDNR for unavoidable impacts. WisDOT will also incorporate construction contract special provisions to eliminate or reduce impacts.

4.3 Project Specific Methodology

The PEL Study will identify federally listed and state listed threatened or endangered species, special concern species, and critical habitat in the project's area of effort. The WDNR will provide a review of the NHI database and an Official Species List will be obtained from the USFWS. The PEL Study will estimate the potential direct impacts and complete preliminary effect determinations for discussion purposes with agencies and to aid in the scoping process for future NEPA documents. No impacts to threatened and endangered species will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation. Field work or investigations will not be conducted.

Section 5

5.0 Water Resource and Floodplain Impact Methodology

5.1 Laws, Regulations, and Guidelines

Water resource and floodplain impacts are evaluated in accordance with these key laws, regulations, and guidelines:

- Clean Water Act (33 USC 1251) including Section 303(d), impaired waters
- Section 10 of the Rivers and Harbors Act (33 USC 401 et seq.)
- Executive Order 11988, Floodplain Management (42 FR 26951)
- Compensatory Mitigation Rule requirements (33 CFR 332)
- U.S. DOT Order 5650.2, Floodplain Management and Protection; Policies and Procedures (23 CFR 650)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- WisDOT FDM Chapter 24, Land and Water Resources Impacts, FDM Chapter 10, Erosion Control and FDM Chapter 13, Drainage
- WAC Chapter NR 116, Wisconsin's Floodplain Management Program
- WisDOT/WDNR Cooperative Agreement Amendment, MOU on Erosion Control and Stormwater Management, 1994
- WAC Chapter TRANS 401, Construction Site Erosion Control and Storm Water Management Procedures for Department Actions
- Transportation Construction General Permit (WI-S066796-1), regulated under Wisconsin Statutes Chapters 283 and 30.2022(2), and Wisconsin Administrative Code Chapters NR 151 and 216.

5.2 General Methodology

Transportation alternatives involving water resources and floodplain impacts are developed to minimize adverse impacts to water quality, floodplains, and aquatic habitat to the maximum extent practicable. Measures to minimize adverse effects include using sound erosion control and stormwater management practices, providing compensatory storage for floodplain storage districts, and sizing new and replacement structures to reduce floodplain encroachment and increases in the height of the regional (100-year) floodplain elevation. Properly minimizing adverse effects requires assessment of existing conditions such as water quality, fishery resources, floodplain functions and values, watershed stability, potential undesirable outcomes to these conditions, and proposed measures to minimize the adverse effects.

The extent to which erosion control and stormwater management measures, such as conceptual Best Management Practices (BMPs) or specific erosion control and stormwater management commitments, are proposed in the Environmental Impact Statement (EIS) depends on the type of transportation improvements being proposed, the construction time frame, and the extent of water and floodplain resources in the project's area of effect. A planning level project generally includes conceptual BMPs, other projects may require more specific erosion control and stormwater management commitments.

5.3 Project Specific Methodology

The PEL Study will inventory water resources and floodplains using WDNR's Surface Water Data Viewer and Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps. The PEL Study will estimate the potential direct impacts and provide mapping for discussion purposes with agencies. No water or floodplain impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 6

6.0 Wetland Impact Methodology

6.1 Laws, Regulations, and Guidelines

Wetland impacts are evaluated in accordance with these key laws, regulations, or guidelines:

- Sections 401 and 404 of the Clean Water Act (33 USC 1251)
- Clean Water Act, 40 CFR Part 230, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material
- Executive Order 11990, Protection of Wetlands (42 FR 26961)
- Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Part 332)
- U.S. DOT Order 5660.1A, Preservation of the Nation's Wetlands
- Fish and Wildlife Coordination Act as amended (16 USC 661-667)
- FHWA policy and procedures for evaluation and mitigation of adverse environmental impacts to wetlands and natural habitat (23 CFR 777)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- WisDOT FDM Chapter 24, Section 5, Aquatic Systems
- WisDOT Wetland Mitigation Banking Technical Guideline as amended, March 2002
- WisDOT/WDNR MOU, Compensatory Mitigation for Unavoidable Wetland Losses Resulting from State Transportation Activities, 2012
- USACE Wetland Delineation Manual (1987 Manual)
- Regional Supplement to USACE Wetland Delineation Manual: North Central and Northeast Region (Version 2.0), January 2012
- Final National Wetland Plant List, USACE, Federal Register, Volume 77, Number 90, May 9, 2012; updated March 2014
- Field indicators of Hydric Soils in the United States published by NRCS (Version 7.0), 2010
- Guidance for Submitting Wetland Delineation Reports to the St. Paul District Army Corps of Engineers and WDNR, 2014

6.2 General Methodology

Depending on the type of transportation improvements being proposed, the construction time frame, and the extent of wetland resources in the project's area of potential effect, approximate wetland boundaries are established using existing information such as the Wisconsin Wetland Inventory maps produced by WDNR, county soil survey, and farmed wetland maps produced by the USDA NRCS statewide, regional or local geographic information system (GIS) data, and field surveys. If more precise wetland boundaries are required, more detailed wetland boundary determinations or delineations would be conducted in accordance with the interagency Corps of Engineers Wetland Delineation Manual (1987 Manual), subsequent guidance such as the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North central and Northeast Region (Version 2.0), January 2012, Field indicators of Hydric Soils in the United States published by NRCS (Version 7.0), 2010, and the Final National Wetland Plant List published by USACE in March 2014.

Transportation improvement alternatives are developed to reduce wetland impacts to the extent practicable through a sequence of avoiding wetlands where possible, minimizing impacts to wetlands that cannot be avoided and mitigating unavoidable wetland loss through

various compensation measures as specified in WisDOT's Wetland Mitigation Banking Technical Guideline, and in the USACE regulations, Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Part 332). Mitigation banking is the preferred compensation option, though WisDOT and WDNR agree that other practicable and ecologically valuable project specific opportunities may be pursued on a case-by-case basis. All unavoidable wetland loss would be fully compensated in terms of amount affected, type, and functional values.

6.3 Project Specific Methodology

The PEL Study will establish the approximate locations of wetlands and identify wetland types using the Wisconsin Wetland Inventory (WWI) data maintained by WDNR and local GIS data. The Study will also estimate the potential direct impacts for discussion purposes with agencies. No wetland impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 7

7.0 Air Quality Impact Methodology

7.1 Laws, Regulations, and Guidelines

Air Quality impacts are evaluated in accordance with these key laws, regulations or guidelines.

- Section 176(c) of the Clean Air Act Amendments of 1990 (42 USC 7401)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- Determining Conformity of Federal Actions to State or Federal Implementation Plans
- (40 CFR, Part 93), EPA
- Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, March 2006, United States Environmental Protection Agency (USEPA) and FHWA
- FHWA air quality conformance guidance (23 CFR 450)
- FHWA Interim Guidance on Air Toxics Analysis in NEPA Documents, 2006 (updated in September 2009)
- Wisconsin State Implementation Plan for Air Quality
- WisDOT FDM Chapter 22, Air Quality

7.2 General Methodology

USEPA has set national air quality standards for six principal air pollutants (also referred to as criteria pollutants): Carbon Monoxide (CO), lead, Nitrogen Dioxide (NO_2), ozone, particulate matter, and sulfur dioxide. Transportation contributes to CO, NO_2, ozone and particulate matter. Applicable transportation improvements are evaluated for ozone, mobile source air toxics and particulate matter in accordance with established air quality assessment techniques.

7.3 Project Specific Methodology

Dane County is in attainment for criteria pollutants, including one-hour and eight-hour ozone standards and particulate matter ($PM_{2.5}$) standards. Project-level air quality analysis will not be completed, but a qualitative discussion of the potential effects of alternatives on mobile source air toxics (MSAT) will be provided. No air quality impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 8

8.0 Traffic Noise Impact Methodology

8.1 Laws, Regulations, and Guidelines

Highway noise impacts are evaluated in accordance with these key laws, regulations or guidelines:

- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- FHWA Federal Aid Policy Guide, Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR 772) (revised in July 2010)
- WisDOT FDM Chapter 23, Noise, WisDOT's FHWA approved written noise policy

8.2 General Methodology

Transportation projects are evaluated for traffic noise impacts and abatement measures to help protect the public health and welfare, to provide noise abatement criteria, and to provide information to local officials for land use planning near highways. The noise analysis also provides information on noise generated from typical construction equipment during the construction period.

Existing and design year traffic noise levels are modeled at residential, commercial, and other sensitive receptors along the project corridor using FHWA's Traffic Noise Model (TNM) computer program. The TNM includes traffic characteristics that yield the greatest hourly traffic noise on a regular basis for existing conditions and the future design year. Noise impacts will be evaluated further to determine the reasonableness and feasibility of potential mitigation measures such as noise walls. If noise mitigation is determined reasonable, additional public involvement related to noise mitigation would be initiated in the project's design phase.

8.3 Project Specific Methodology

In accordance with WisDOT's FDM Chapter 23 (Noise), the PEL Study will determine whether the project qualifies as a Type I Project and requires noise analysis. No traffic noise impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 9

9.0 Construction Impact Methodology

9.1 Laws, Regulations, and Guidelines

Construction impacts are evaluated in accordance with these key laws, regulations, or guidelines.

- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- FHWA Work Zone Safety and Mobility Rule (69 FR 54562), 2004

9.2 General Methodology

Discussion of construction related impacts may include access to facilities and services, emergency response, air quality (emissions and fugitive dust), noise, water quality (erosion and sedimentation), construction solid waste/hazardous waste, and vibration as applicable. Additional construction related information will include conceptual discussions about construction material sources (borrow sites), and major utility adjustments/associated impacts.

A transportation management plan (TMP) for work zones provides management strategies for work zone impacts and safety in all project development phases. Strategies include temporary traffic control measures and devices, public information and outreach; and operational strategies such as travel demand management, signal retiming and traffic incident management. Preliminary information is developed in the project's planning phase with input from the public, local officials and other interests, and developed further in the engineering design phase.

9.3 Project Specific Methodology

No project specific methodology will be included in this PEL study because it will not lead directly to construction. Discussion would likely occur in any future NEPA documentation.

Section 10

10.0 Visual and Aesthetic Impact Methodology

10.1 Laws, Regulations, and Guidelines

Aesthetic (visual) impacts are evaluated in accordance with these key laws, regulations, or guidelines.

- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- FHWA publication Visual Impact Assessment for Highway Projects (DOT FHWA-HI-88-054)
- WisDOT FDM Chapter 27, Section 10, Visual Impact Assessment

10.2 General Methodology

The purpose of the visual impact assessment is to preserve and enhance the visual character of the project corridor. This is accomplished by identifying the visual character of the project corridor, characterizing the visual quality of the area, and identifying and quantifying viewer groups to the extent practicable. The impact assessment also describes the visual change that will occur due to the proposed transportation improvements. Mitigation measures, where adverse visual effects are identified, could include landscaping and aesthetic treatments such as retaining walls, bridge abutments, and sidewalks in the project area.

It is WisDOT's policy to use a "Community Sensitive Solutions" (CSS) approach to enhance excellence in transportation project development and resulting solutions. CSS is the art of creating public works projects that function safely and efficiently and are pleasing to both the users and the neighboring communities.

CSS is a collaborative interdisciplinary approach that includes early involvement of all stakeholders to ensure that transportation projects not only provide safety and mobility but are also in harmony with communities and the natural, social, economic, and cultural environments. This integration of projects into the community and environment requires careful planning and a variety of design, construction and safety standards must be met, along with environmental considerations. Design exceptions to standards may be used, where appropriate and necessary. These must be documented and approved and must contain a thorough analysis of the consequences and tradeoffs involved.

10.3 Project Specific Methodology

The PEL Study will describe existing viewsheds and potential effects to the viewsheds from the alternatives under consideration. No visual and aesthetic impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 11

11.0 Section 4(f), 6(f), and Other Unique Lands Impact Methodology

11.1 Laws, Regulations, and Guidelines

Impacts to public use lands (existing and planned public parks, recreation areas, wildlife and waterfowl refuges, other public-use lands and historical sites) are evaluated in accordance with these key laws, regulations, or guidelines.

- Section 4(f) of the United States Department of Transportation (U.S. DOT) Act (23 United States Code [USC] 138; 49 USC 303)
- 23 CFR 774, FHWA's regulations for implementing Section 4(f) requirements for parks, recreation areas, wildlife and waterfowl refuges and historic sites
- FHWA Section 4(f) Policy Paper (Federal Register, July 20, 2012)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- Section 6(f) of the Land & Water Conservation Fund Act (LWCF) as amended (16 USC 4601)
- Federal Aid in Sport Fish Restoration Act (Dingell-Johnson Act) as amended (16 USC 777)
- Pittman-Robertson Wildlife Restoration Act (16 USC 669)
- WisDOT FDM Chapter 21, Environmental Documents, Reports and Permits, Chapter 26, Cultural Resources Preservation
- Other public use land funding programs such as those administered by the National Park Service (NPS), NRCS, and WDNR

Section 4(f) of the U.S. DOT Act applies only to the actions of agencies within the U.S. DOT including FHWA. While other agencies may have an interest in Section 4(f), FHWA is responsible for applicability determinations, evaluations, findings, and overall compliance.

11.2 General Methodology

The public use land impact evaluation includes an inventory of such resources in the transportation project's area of effect, a description of the resources including existing and planned use, funding sources, and jurisdictional agencies. The transportation improvements are located and designed to avoid or minimize impacts to public use land to the extent practicable. Where such resources cannot be avoided, impacts would be analyzed by the amount of land required from the resource and any construction impacts such as increased traffic noise, changes in the visual setting, or other impacts that would adversely affect the public use land. WisDOT would coordinate with the jurisdictional agencies to obtain information on resource use, funding and management, and to obtain input on potential effects and possible mitigation measures. The Section 6(f) land mitigation process will follow the conversion proposal documentation and LWCF Project Amendment procedures of the NPS, with assistance of the State-level LWCF officer.

11.3 Project Specific Methodology

The PEL Study will identify potential Section 4(f) properties that could be affected by strategies being investigated and will identify the range of potential effects that could occur to Section 4(f) properties where the effect could influence the selection of Preferred Alternative Strategies. The PEL Study will identify the likely type of Section 4(f) evaluation needed in

future or subsequent NEPA studies. A preliminary evaluation of feasible and prudent avoidance alternatives will be completed for two corridor properties, anticipated to be the UW Arboretum and the Capital Springs State Recreation Area. Preliminary coordination with officials with jurisdiction will also be documented. No Section 4(f) impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Through consultation with resource agencies, the study will also identify Section 6(f) resources, other resources that have received special funding, or properties with easements or restrictions in the project area. If needed, the study will identify the likely type of Section 6(f) evaluation needed in future or subsequent NEPA studies for potential Section 6(f) resources. No Section 6(f) impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 12

12.0 Historical Resources Impact Methodology

12.1 Laws, Regulations, and Guidelines

Historic resource impacts for transportation projects are evaluated in accordance with the following key regulations and guidance.

- Sections 106 and 110 of the National Historic Preservation Act as amended (16 USC 470)
- Section 106 regulations (36 CFR Part 800)
- FHWA's Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- 23 CFR 774, FHWA's regulations for implementing Section 4(f) requirements for parks, recreation areas, wildlife and waterfowl refuges and historic sites
- WisDOT's FDM, Chapter 26, Cultural Resource Preservation
- USACE Regulations for Processing Department of the Army Permits (33 CFR, Park 325); Appendix C of the regulations includes procedures for protection of historic properties

12.2 General Methodology

Impact evaluation includes identification of historic resources in the project's area of potential effect which generally consists of existing and proposed right-of-way, temporary and permanent easements, equipment staging areas, and other land that would be disturbed by the project.

Historic investigations are done by qualified historians in accordance with established procedures developed jointly by WisDOT and the Wisconsin Historical Society (WHS) and include evaluation of the resources to determine eligibility to the National Register of Historic Places, assessment of effects to determine whether an adverse effect will occur, consultation with the State Historic Preservation Office (SHPO), Native American Tribes, and other parties indicating an interest in the historic resources, and implementation of agreements reached to account for unavoidable adverse impacts.

FHWA is the lead federal agency for the Section 106 consultation process, in cooperation with WisDOT.

12.3 Project Specific Methodology

The PEL Study will identify a preliminary Area of Potential Effect (APE) and research historic resources from a previously prepared screening analysis to identify resources that may warrant preparation of a Determination of Eligibility (DOE) for the National Register of Historic Places (NRHP) during future or subsequent NEPA studies.

The PEL Study will evaluate potential effects to Section 106 resources (other than the UW Arboretum) where the potential effects could affect the selection of Preferred Alternative Strategies. This evaluation will be on a broad, preliminary scale for resources potentially eligible for NRHP listing. No impacts to historic properties will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 13

13.0 Archeological Resources Impact Methodology

13.1 Laws, Regulations, and Guidelines

Archaeological impacts for transportation projects are evaluated in accordance with the following key regulations and guidance:

- Section 106 of the National Historic Preservation Act as amended (16 USC 470)
- NPS regulations for curation of federally owned and administered archaeological collections (36 CFR 79)
- FHWA's Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- WisDOT's FDM, Chapter 26, Cultural Resource Preservation
- USACE Regulations for Processing Department of the Army Permits (33 CFR, Part 325); Appendix C of the regulations includes procedures for protection of historic properties.
- Wisconsin Burial Site preservation law, Wisconsin Statute 157.70.

13.2 General Methodology

Impact evaluation includes identification of archaeological resources in the project's area of potential effect which generally consists of existing and proposed right of way, temporary and permanent easements, equipment staging areas, and other land that would be disturbed by the project.

Archaeological investigations are done by qualified archaeologists in accordance with established procedures developed jointly by WisDOT and the WHS and include evaluation of the resources to determine eligibility to the NRHP, assessment of effects to determine whether an adverse effect will occur, consultation with the SHPO, Native American Tribes, and other parties indicating an interest in the archaeological resources, and implementation of agreements reached to account for unavoidable adverse impacts.

13.3 Project Specific Methodology

The PEL Study will identify a preliminary APE and complete a search of WHS archaeological and burial site records for the Beltline corridor. The study will conduct a broad, preliminary evaluation of potential effects to known archaeological resources and burial sites where the potential adverse effects could affect the selection of Preferred Alternative Strategies. The study will identify areas where further investigations will be needed as part of future or subsequent NEPA studies. This evaluation will be on a broad, preliminary scale for resources potentially eligible for NRHP listing. Reconnaissance surveys are not part of this PEL Study. No impacts to archeological resources or burial sites will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 14

14.0 Business and Residential Relocation Impact Methodology

14.1 Laws, Regulations, and Guidelines

Business and residential impacts are evaluated in accordance with these key laws, regulations or guidelines:

- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended (49 CFR Part 24)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987

14.2 General Methodology

Evaluation of business impacts includes an estimate of the number and types of businesses to be displaced, number of employees or jobs affected, any special characteristics, and availability of replacement business sites. Evaluation of residential impacts includes an estimate of the number of homes to be displaced including family characteristics; availability of comparable decent, safe, and sanitary housing in the area; any measure to be taken when replacement housing is insufficient; and identification of any special relocation needs. Depending on the number and types of businesses or homes displaced, a Conceptual Stage Relocation Plan (CSRP) may be prepared as part of the EIS. Impacts to businesses and homes because of changes in access during and after construction are also evaluated.

14.3 Project Specific Methodology

The PEL Study will identify businesses and residences using aerial photography and windshield surveys. A preliminary determination of possible relocations and how they could affect the selection of Preferred Alternative Strategies will be described in the PEL Summary Report. Preparation of a preliminary CSRP is not part of the PEL Study. No relocations will occur as a result of this PEL Study. Relocations may result after further analysis is conducted in future NEPA documentation.

Section 15

15.0 Socio-Economic Impact Methodology

15.1 Laws, Regulations, and Guidelines

Socioeconomic impacts are evaluated in accordance with these key laws, regulations or guidelines:

- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- WisDOT FDM Chapter 25, Socioeconomic Factors
- WisDOT FDM Chapter 11, Section 46, Bicycle and Pedestrian Accommodations

15.2 General Methodology

Evaluation of social impacts includes applicable changes in neighborhoods or community cohesion; changes in travel patterns and accessibility; impacts on community facilities; impacts on traffic safety/public safety; and impacts on any special groups such as elderly, handicapped, minority, and transit-dependent persons. Evaluation of economic impacts includes cost estimates of the proposed action and its alternatives, effects on highway-dependent businesses and effects on existing and planned business development. Socioeconomic impacts that can be quantified based on available data will be presented as such in the EIS and other impacts will be discussed qualitatively.

15.3 Project Specific Methodology

The PEL Study will consider socioeconomic impacts using most current U.S. Census data and available supplemental data from local and regional land use plans, development plans, and discussions with local officials. The study will examine local bicycle and pedestrian plans and transit routes to inform a discussion of needs for bicycle and pedestrian and transit accommodations. No socio-economic impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 16

16.0 Environmental Justice Impact Methodology

16.1 Laws, Regulations, and Guidelines

Environmental Justice impacts are evaluated in accordance with these key laws, regulations or guidelines:

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 1994
- Title VI of the federal Civil Rights Act, 42 USC Section 2000d
- U.S. DOT Order on Environmental Justice, U.S. DOT Order 5610.2(a), 1997 and as updated (Federal Register Vol. 77, No. 91, May 10, 2012)
- FHWA Order T6640.23, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, June 2012
- FHWA Guidance on Environmental Justice and NEPA-Memo to the Field (December 16, 2011)
- FHWA Environmental Justice Reference Guide (April 1, 2015)

16.2 General Methodology

The proposed action and its alternatives are evaluated to determine whether there would be disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment. Potential impact categories include air, noise, or water pollution; increased traffic congestion; changes in aesthetic value; disruption of community cohesion or economic vitality; changes in the availability of public and private facilities and services; adverse employment effects; and displacement of homes, businesses, or other facilities.

Consideration of EJ in transportation decision-making is based on the following principles listed in the WisDOT FDM Chapter 21-15-1:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects on minority populations and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

16.3 Project Specific Methodology

The PEL Study will prepare an EJ/Title VI Impact Report describing the potential range of beneficial and adverse effects of improvement strategies on EJ and Title VI populations.

Analysis will be based on demographic information from the Wisconsin Demographic Services Center and the most current U.S. Census data. It will also be supplemented with information from special community outreach including a survey, meetings with community leaders, forming an expert panel, and hosting an EJ workshop. No environmental justice impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 17

17.0 Contaminated Sites Impact Methodology

17.1 Laws, Regulations, and Guidelines

The impacts of potential environmental contaminants are evaluated in accordance with these key laws, regulations or guidelines:

- Resource Conservation and Recovery Act of 1976 as amended (42 USC 6901)
- FHWA Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, 1987
- WisDOT FDM, Chapter 21, Section 35, Contaminated Site Assessments and Remediation

17.2 General Methodology

The Phase 1 investigation for potentially contaminated sites uses field observations, interviews and records searches to identify sites that have a high likelihood for contamination. Phase 1 screening is performed for all alternatives carried forward in the environmental document. A Phase 2 investigation, which includes subsurface testing, is performed on sites located within the area of effect for the preferred alternative. Further investigation is performed when necessary after a preferred alternative is selected. WisDOT also evaluates existing highway structures that need to be replaced or rehabilitated as part of a proposed transportation improvement to determine whether any asbestos materials were used in the construction, renovation or rehabilitation of the structures.

17.3 Project Specific Methodology

The PEL Study will perform a hazardous materials (Haz Mat) records search of the Beltline corridor to identify parcels potentially affected by Beltline alternative strategies. Potentially contaminated sites proximate to alternatives being considered and that may warrant additional investigation in future or subsequent NEPA studies will be identified. No impacts to contaminated sites will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 18

18.0 Indirect Effects Impact Methodology

18.1 Laws, Regulations, and Guidelines

Indirect effects are evaluated in accordance with these key laws, regulations, or guidelines.

- National Cooperative Research Program (NCHRP) Report 466, Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects, 2002
- WisDOT Guidance for Conducting an Indirect Effects Analysis, November 2014
- 40 CFR, Chapter 1, Section 230.11(g)(h); Protection of Environment, Environmental Protection Agency, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material
- 33 CFR, Part 230, Section 320.4(a)(1); Navigation and Navigable Waters, General Regulatory Policies, General Policies for Evaluating Permit Applications

18.2 General Methodology

The indirect effects analysis methodology includes the following key components:

- Determine the study area boundaries.
- Inventory the study area and notable features such as land use/development trends, demographics, and natural resources including aquatic ecosystems.
- Identify impact-causing activities of the proposed project alternatives.
- Identify the potentially significant indirect effects.
- Analyze indirect effects, describe their significance for the project alternatives and evaluate assumptions.
- Assess consequences and identify mitigation measures.
- Verify the analysis is supported by input or information from local officials, agencies, and community outreach activities.

18.3 Project Specific Methodology

The study will identify the indirect effects analysis area and prepare background materials and opinion of potential indirect effects for electronic transmittal to stakeholders. Stakeholders will be asked to determine the areas within their community that will be likely to experience indirect effects, including the magnitude of the effect, the probability with which they feel the effect will happen, the timing of the potential effect, and what might be done to avoid or minimize the effect.

The PEL Study effort will be in accordance with WisDOT's Guide for Conducting an Indirect Effects Analysis. The study will document the findings of the stakeholders and an Indirect Effects Analysis report that aligns with the WisDOT's six-step process. The report will summarize the analysis methodology, effects assessment, and potential mitigation measures. The indirect effects that will be analyzed include: regional development patterns (residential, commercial, industrial, and institutional); redevelopment; natural resources (agriculture, wetlands, water quality, uplands, threatened and endangered species, and air quality); community resources; effects to local transportation network, including bike and pedestrian facilities, transit, and arterials under local jurisdiction; and effects to EJ populations. No indirect effects impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

Section 19

19.0 Cumulative Effects Impact Methodology

19.1 Laws, Regulations, and Guidelines

Cumulative effects are evaluated in accordance with these key laws, regulations or guidelines:

- Council on Environmental Quality (CEQ) publication, Considering Cumulative Effects under the National Environmental Policy Act, 1997
- FHWA position paper, Secondary and Cumulative Impact Assessment in the Highway Development Process, 1992
- WisDOT Guidance for Conducting a Cumulative Effects Analysis, November 2007
- 40 CFR, Chapter 1, Section 230.11(g)(h); Protection of Environment, Environmental Protection Agency, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material
- 33 CFR, Part 230, Section 320.4(a)(1); Navigation and Navigable Waters, General Regulatory Policies, General Policies for Evaluating Permit Applications

19.2 General Methodology

The cumulative effects analysis methodology includes the following key components:

- Identify the significant issues associated with the proposed action and define the assessment.
- Establish geographic scope for the analysis.
- Establish future timeframe for analysis.
- Identify other actions affecting the resources, ecosystems (including aquatic ecosystems) and human communities of concern.
- Characterize resources identified in terms of their response to change and capacity to withstand stress.
- Characterize the stresses affecting the resources and their relationship to regulatory thresholds.
- Define a baseline condition for the resources.
- Identify the important cause and effect relationships between human activities and resources.
- Determine the magnitude and significance of cumulative effects.
- Modify or add alternatives to mitigate significant cumulative effects.
- Monitor the cumulative effects of the selected alternative and recommend management practices as appropriate to prevent or mitigate undesirable effects.
- Verify the analysis is supported by input or information from local officials, agencies, and community outreach activities.

19.3 Project Specific Methodology

The study will identify the cumulative effects analysis area and prepare background materials and opinion of potential cumulative effects for electronic transmittal to stakeholders. Stakeholders will be asked to determine the areas within their community that will be likely to experience indirect effects, including the magnitude of the effect, the probability with which they feel the effect will happen, the timing of the potential effect, and what might be done to avoid or minimize the effect. No cumulative impacts will occur as a result of this PEL Study. Impacts may result after further analysis is conducted in future NEPA documentation.

The PEL Study will prepare a Cumulative Effects Report summarizing analysis methodology, effects assessment, and potential mitigation measures. The PEL Study effort will be in accordance with WisDOT's Guide for Conducting a Cumulative Effects Analysis.

The cumulative impacts assessment will include a geographic range no greater than the project area county, Dane County, and a time frame no greater than the adopted local comprehensive plans in effect in Dane County. "Other actions" and "past effects" to be considered in the analysis are limited to the public and private activities known by local governments or agencies to be "reasonably feasible".

The analysis will include research of resource consumption, development trends, and characterization of resources. Stresses affecting resources and their relationship to regulatory thresholds will be characterized. Cause and effect relationships will be analyzed, and the cumulative effect of possible Beltline impacts, combined with past, present, and foreseeable future impacts on resources, will be evaluated.

Resources analyzed for cumulative impacts are anticipated to include alternative transportation modes and funding, air quality, travel and traffic demand, community resources serving EJ and Title VI populations, and the natural environment.