Impact Analysis Methodology Report

As Part of the Environmental Review Process for

South Bridge Connector Study

Brown County, WI

WisDOT Project I.D. 4556-02-00

U.S. Department of Transportation
Federal Highway Administration

Wisconsin Department of Transportation

Brown County

February 2020
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Revision History
This Impact Analysis Methodology (IAM) Report for the South Bridge Connector Study in Brown County, Wisconsin, is intended to be a dynamic document that will be available to stakeholders and updated as appropriate throughout the duration of the project. Below is a record of substantive changes made to this document.

The Lead Agencies—FHWA, WisDOT, and Brown County—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 important actions described in the IAM change. 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. Revisions or changes that affect IAM commitments made by other agencies must be agreeable to the affected agency(ies). Revisions and changes to the IAM that do not affect commitments made by other agencies will be forwarded to Cooperating and Participating Agencies for their acknowledgement and comment.

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Section 1

1.0 Introduction

1.1 Purpose of Impact Analysis Methodology

Section 139 of Title 23 of the United States Code (USC) requires Lead Agencies for proposed federally funded transportation projects to determine the appropriate methodology and level of detail for analyzing impacts of these proposed transportation projects in collaboration with other state and local agencies. The Federal Highway Administration (FHWA), the Wisconsin Department of Transportation (WisDOT), and Brown County are Joint Lead Agencies for the South Bridge Connector Study. 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 Impact Analysis Methodology (IAM) Report presents the proposed methodologies to be used for the South Bridge Connector Study.

Consensus on the methodology1 is not required, but the Joint Lead Agencies must consider the views of the Cooperating and Participating Agencies with relevant interests before making a decision on a particular methodology. Well-documented, widely accepted methodologies, such as those for noise impact assessment and evaluation of impacts under Section 106 of the National Historic Preservation Act, would require minimal collaboration. If a Cooperating or Participating Agency has concerns about the proposed methodology for a particular environmental factor, the agency should describe its preferred methodology and why it is recommended.

The purpose of the IAM Report is to communicate and document the Joint Lead Agencies’ structured approach to analyzing impacts of the proposed transportation alternative corridors. Collaboration on IAM 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 study 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 2008, FHWA published a Notice of Intent to advise agencies and the public that an Environmental Impact Statement (EIS) would be prepared for proposed transportation improvements in the southern portion of the Green Bay Metropolitan Area. A draft Agency Coordination Plan and draft IAM Report were previously prepared for this corridor study. In addition, a draft purpose and need statement was developed, and alternatives were developed and evaluated.

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1 The methodology used by the Lead Agency must be consistent with any methodology established by statute or regulation under the authority of another federal agency.
Meetings with Participating and Cooperating Agencies were held to obtain concurrence on the purpose and need and the alternatives for detailed study in the Draft EIS, which examined the potential effectiveness of no-build and build alternatives. Three build alternatives along two corridors were identified as the most effective options for achieving the project’s purpose and need and retained for detailed study.

Two meetings with the Project’s Stakeholder Committee and three Public Involvement Meetings were held. Meetings with Participating and Cooperating Agencies were also held to obtain concurrence on the Purpose and Need and the Range of Alternatives Considered.

The National Environmental Policy Act (NEPA) process was put on hold in 2012 before a Draft EIS was completed.

In fall 2019, the NEPA process was re-initiated for development of a Tier 1 EIS. The purpose of the Tier 1 EIS is to determine the most appropriate improvements for addressing existing and future transportation demand in the southern portion of the Green Bay Metropolitan Area. The tiered approach is intended to lead to an approved type of improvement and a preferred corridor location, which would then allow Brown County and WisDOT to further develop portions of the project as needs dictate and as funding becomes available. As funding becomes available, subsequent Tier 2 environmental documents will be prepared with a greater degree of engineering detail and a more detailed impact analysis for specific improvements in the corridor.

Analysis and decisions from earlier EIS development regarding the purpose and need, range of alternatives, and environmental impacts will be updated and evaluated for inclusion in the Tier 1 EIS. Public, agency, and tribal input will be key components of this evaluation and update process. The Tier 1 EIS will be prepared in accordance with 23 USC 139, 23 Code of Federal Regulations (CFR) 771, and 40 CFR parts 1500–1508. The Tier 1 EIS will be supported by studies at a sufficient level of environmental impact analysis to compare the impacts of the potential future improvements along the alternative corridors and no-build alternatives. Completion of the Tier 1 EIS and the Record of Decision is expected in fall 2020.

Completion of the Tier 1 EIS will not lead directly to final design and construction. As mentioned above, a more detailed Tier 2 environmental document will be prepared to further evaluate each section of the project prior to potential final design and construction. The alternatives analyzed in the Tier 1 EIS will be broad corridors defining the general location for future improvements, while the alternatives analyzed in each Tier 2 environmental document will comprise a range of specific build alignments or concepts. In most cases, the analysis conducted for the Tier 1 EIS will rely on currently available and published data rather than project-specific field investigations. In this IAM Report, the “General Methodology” section for each resource typically describe the approach that would be taken during Tier 2 analysis, whereas the "Project Specific Methodology" section for each resource more clearly defines the level of analysis intended to be conducted during the preparation of the Tier 1 EIS.

1.3 Project Location

The study area extends from the intersection of County EB and F in the Town of Lawrence to the intersection of County GV and X in the Town of Ledgeview and extends through the City of De Pere. The study area includes the Fox River. See project location and study limits maps.
The study termini are consistent with FHWA’s environmental regulations in 23 CFR 771.111(f). The proposed study is of sufficient length to address environmental matters on a broad scope; has independent utility even if no additional transportation improvements in the area are made; and does not restrict future consideration of alternatives for other reasonably foreseeable transportation improvements.
Figure 1 – Project Location Map

Project ID 4556-02-00
South Bridge Connector
Brown County, WI
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 10-15, Agricultural Lands
- Chapter 32.035, Wisconsin Statutes and FDM Chapter 20, Section 45-35, 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 Resources 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

Agricultural lands will be inventoried using aerial photography and other secondary sources, as available within the study area. The Tier 1 EIS will assess:

- Direct and indirect farmland impacts, including severances
- The number of farms impacted

No detailed Agricultural Impact Notice nor an NRCS CPA – 106 form will be prepared. Changes in access to farm fields will not be assessed. Estimates of potential agricultural impacts that could result from subsequent project development and construction will be coordinated with DATCP during Tier 1 EIS development to determine which corridor alternative has the greatest potential to avoid and minimize agricultural impacts. During the Tier 2 assessments, impacts to farmlands, if any, will be quantified and documented on Farmland Conversion Impact Rating Form NRCS CPA-106 and Agricultural Impact Notice for Highway Projects (form ARM-LWR-359) and coordinated with the NRCS and DATCP.
Section 3

3.0 Upland Habitat / Wildlife Impact Methodology

3.1 Laws, Regulations, and Guidelines

Upland habitat/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 Regulation, Mitigation of 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, Land and Water Resources Impacts

3.2 General Methodology

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

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.

3.3 Project Specific Methodology

Upland habitat information from the 2012 studies will be updated using aerial photography and data from the DNR Natural Heritage Inventory Database. A windshield survey may be conducted to verify and further characterize areas. The Tier 1 EIS will assess possible project effects to the various upland habitat types. The Tier 1 document will discuss vegetation/cover types and wildlife habitat within the alternative corridors. The analysis will consider and quantify impacts on any unique habitat areas.

During Tier 2, field studies will fully document upland habitat conditions according to WisDOT FDM Chapter 24 and quantify impacts based on the design details available at that time.
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
- Wisconsin Administrative Code Chapter NR 27, Endangered and Threatened Species, 2005
- Wisconsin Statutes Chapter 29.604, Endangered and Threatened Species Protected
- WisDOT/DNR Cooperative Agreement Amendment, Memorandum of Understanding 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 CFR, Part 325); regulations include consideration of threatened and endangered species.
- Bald and Golden Eagle Protection Act (16 USC 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 effect. The presence or absence determination is made in consultation with DNR 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 USFWS and DNR.

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

4.3 Project Specific Methodology

For the Tier 1 EIS, threatened and endangered species evaluation will rely on published data. No field investigations will be completed.

A request will be made for DNR to review the DNR Bureau of Endangered Resources and Natural Heritage Inventory database to identify if known species are located in the study area, and the Environmental Conservation Online System Information for Planning and
Consultation (ECOS IPaC) Website list will be reviewed to identify any federally listed threatened or endangered species that may occur in the study area.

For the Tier 1 EIS, evaluating potential threatened and endangered species impacts will involve assessing potentially affected listed and proposed species and their known habitat requirements and determining if any critical habitat areas would be potentially affected by each alternative corridor. Considerations will include potential direct and indirect impacts that the corridor alternatives could have on the listed threatened and endangered species. Direct impacts may include the construction and operation of transportation systems. Indirect impacts may include effects due to noise, stormwater runoff, etc. For Tier 1 of the study, it is assumed that there would be no detailed Section 7 consultation.

Tier 2 assessments will update the analysis from Tier 1 based on the more detailed design developed during Tier 2 analysis, and if protected species or habitat areas are identified in the study area, WisDOT will consult with DNR and/or USFWS to determine if detailed field investigations are required to determine the presence or absence of threatened and endangered species. Section 7 consultation would occur, if required.
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)
- DOT Executive 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 Stormwater Quality and FDM Chapter 13, Drainage
- Wisconsin Administrative Code Chapter NR 116, Wisconsin’s Floodplain Management Program
- WisDOT/DNR Cooperative Agreement Amendment, Memorandum of Understanding on Erosion Control and Storm Water Management, 1994
- Wisconsin Administrative Code 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 storm water 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 storm water management measures; i.e., conceptual Best Management Practices (BMPs) or specific erosion control and storm water management commitments, are proposed in the 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 storm water management commitments.
5.3 **Project Specific Methodology**

The Tier 1 document will assess potential effects upon groundwater and surface water quality using published research and available data. Water resources and floodplains will be inventoried using aerial photography, DNR’s Surface Water Data Viewer, DNR’s Lakes Page, Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Maps and other secondary sources if available within the study area. Based on available data, the FEMA mapped floodplains and floodways will be identified. Potential longitudinal and transverse encroachments in floodplain areas will be quantified. To the extent that data is available, the analysis will consider aquifer systems and groundwater supply wells. Surface water resources will be identified, and potential impacts of each corridor alternative will be calculated.

The Tier 2 assessments will evaluate in detail the project impacts on the floodplains, floodways and base flood elevations. Impacts will be compared with DNR regulations and local floodplain ordinances to determine the need for floodplain permits. Impacts to groundwater and surface waters will be evaluated in accordance with FDM Chapter 24.
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)
- Executive Order 11990, Protection of Wetlands (42 FR 26961)
- Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Part 332)
- DOT Executive 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/DNR Memorandum of Understanding, Compensatory Mitigation for Unavoidable Wetland Losses Resulting from State Transportation Activities, 2012
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North central and Northeast Region (Version 2.0), January 2012
- Final National Wetland Plant List, U.S. Army Corps of Engineers, 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 the DNR, 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 study area, approximate wetland boundaries are established using existing information such as the Wisconsin Wetland Inventory maps produced by DNR, county soil survey, and farmed wetland maps produced by the USDA NRCS statewide, regional or local 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 USACE regulations, Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Part 332). Mitigation banking is the preferred compensation option, though WisDOT and DNR 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

In the Tier 1 EIS, wetland analysis will rely on published data, and no delineations will be completed. Approximate wetland boundaries will be established using the Wisconsin Wetland Inventory data maintained by DNR, county soil survey, farmed wetland maps produced by the USDA-NRCS and site investigations from the earlier studies. A windshield survey/field verification will be conducted to generally confirm wetland boundaries identified through published data. Notable discrepancies identified during the reconnaissance will be corrected by sketching the boundary of each identified wetland on aerial base maps, and wetland locations and boundaries will be refined within the GIS system. The approximate size of each identified wetland and the percentage located within each alternative corridor will be calculated. Based on the reconnaissance, wetland maps and available data, the Consultant will provide cursory information regarding dominant vegetation and the quality of each identified wetland. Information will be reported by area, type, and quality of wetlands within each corridor, and representative alignments will be used to calculate impacts.

Delineation or determination of wetland boundaries would be performed and permitting and mitigation requirements would be established as part of the Tier 2 assessments.
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), Environmental Protection Agency (EPA)
- Transportation Conformity Guidance for Qualitative hot-spot Analyses in PM$_{2.5}$ and PM$_{10}$ Nonattainment and Maintenance Areas, March 2006, EPA 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

7.2 General Methodology

EPA 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, carbon monoxide, mobile source air toxics and particulate matter in accordance with established air quality assessment techniques.

The build alternatives are screened to determine whether project-level evaluation of CO emissions is required. The first screening step uses the indirect source permit exemption criteria previously established by DNR in Wisconsin Administrative Code Chapter NR 411, Construction and Operation Permits for Indirect Sources. Although NR 411 was suspended by the Wisconsin Legislature in March 2012 (based on DNR’s determination that automobile CO emissions have decreased dramatically, and therefore Wisconsin no longer exceeds the CO National Ambient Air Quality Standards [NAAQS]) WisDOT in consultation with FHWA has elected to continue using the following exemption criteria as a screening tool for WisDOT projects:

- For highway projects located outside the metropolitan counties,* any new road segment or intersection leg that will carry less than 4 lanes of traffic or any modified road segment or intersection that will have less than 2 additional lanes of traffic within 10 years after construction.

* The metropolitan counties are Brown, Calumet, Chippewa, Dane, Douglas, Eau Claire, Kenosha, La Crosse, Marathon, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, St. Croix, Washington, Waukesha and Winnebago.
Any highway project that will meet the following criteria for location and traffic volumes within 10 years after construction or modification:

- Any new road segment or new intersection leg in a metropolitan county that will have a peak-hour volume of less than 1,200 vehicles per hour.
- Any modified road segment or new intersection leg in a metropolitan county that will have an increase in peak-hour volume of less than 1,200 vehicles per hour.
- Any new road segment or new intersection leg outside a metropolitan county that will have a peak-hour volume of less than 1,800 vehicles per hour.
- Any modified road or highway segment outside a metropolitan county that will have an increase in the peak-hour volume of less than 1,800 motor vehicles per hour.

Where there is a shift in one or more of the intersection approach legs, one of the following:

- The maximum shift in the nearest roadway edge toward any potential receptor within a new or modified intersection boundary will be less than 12 feet.
- Where the shift in the nearest roadway edge toward any potential receptor is 12 feet or more, each new road segment has no more than two approach lanes (not including exclusive turning lanes), and any potential receptor is located at more than 25 feet from the nearest roadway edge, a peak hour volume on each approach leg of less than 1,800 vehicles per hour.

Projects that meet the exemption criteria listed above do not require further evaluation for CO emissions.

For projects that do not meet the exemption criteria listed above, additional screening may be done by referencing past projects that represent a worst-case scenario compared to the currently proposed project and that did not exceed the CO NAAQS based on modeling results. If applicable past projects are found, the comparison would be described in the EIS and no further CO analysis would be required. If no applicable past projects are found, the worst-case build alternative for the currently proposed study will be modeled using MOVES/CAL3QHC. The results of the modeling will be compared to the CO NAAQS and summarized in the EIS.

### 7.3 Project Specific Methodology

No quantitative air quality modeling will occur for the Tier 1 analysis. The Tier 1 EIS will reference the requirement for a regional air quality conformity analysis for the preferred alternative and will cite appropriate regulations and procedures for the development of the analysis. Brown County is in an attainment area for ozone, CO, nitrogen dioxide and particulate matter (PM$_{10}$ and PM$_{2.5}$) under NAAQS. Therefore, the project is not subject to transportation conformity requirements, and conformity analysis is not required.

Assuming attainment status does not change, Tier 2 assessments would analyze mobile source air toxics impacts where applicable.
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
- WisDOT FDM Chapter 23, Noise
- Wisconsin Administrative Code Chapter TRANS 405, Siting Noise Barriers (Serves as supplement to WisDOT’s noise policy in FDM Chapter 23)

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 study corridor using FHWA’s Traffic Noise Model (TNM) 2.5 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

Noise studies for the Tier 1 EIS will be conducted at a lesser level of detail than for traditional environmental documents, as preliminary design data will not be available; therefore, for the Tier 1 analysis, noise modeling will not be conducted. For Tier 1, it is appropriate to identify potential areas where noise abatement could be required. Consistent with FHWA guidelines (FHWA-HEP-10-025), noise-sensitive receptors will be inventoried and quantified by alternative corridor (defined as within roughly 500 feet of the approximate working alignment of each alternative). This will be used to compare the magnitude of potential noise impact for each corridor. Noise modeling to assess impacts and abatement measures would occur during Tier 2 assessments.
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 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 has been identified for Tier 1 since the Tier 1 EIS will not lead directly to construction.

Tier 2 assessments will analyze the construction impacts of the preferred alternative based on the more detailed design that will be available at that time.
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
- 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 study corridor. This is accomplished by identifying the visual character of the study 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 study 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 visual resource analysis will involve qualitative assessment of the visual and aesthetic characteristics (including both the visual environment as seen by those traveling on the road and by those viewing the road) and potential impacts of each alternative corridor. For the Tier 1 analysis, the assessment will not follow the methodology as set forth in the Guidelines for the Visual Impact Assessment of Highway Projects (U.S. DOT 2015).

Tier 2 assessments will evaluate the need for and include a visual impact assessment depending on the proposed improvements, and the visual quality of the affected environment and viewsheds, in accordance with FDM Chapter 27, Section 10.
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 U.S. Department of Transportation (U.S. DOT) Act (23 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 (54 USC 200301 et seq.)
- 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 20, 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, NRCS, and DNR

Section 4(f) of the U.S. Department of Transportation (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 or must be consulted 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 Land and Water Conservation Fund (LWCF) Project Amendment procedures of the National Park Service (NPS), with assistance of the State-level LWCF officer. Mitigation of impacts to other specially funded conservation lands, such as NRCS-funded reserve programs, will be coordinated with the agency with jurisdiction.
11.3 **Project Specific Methodology**

For the Tier 1 EIS, a preliminary Section 4(f) discussion/evaluation identifying possible Section 4(f) properties will be included in the analysis and comparison of alternative corridors. This will involve identifying public use lands and listed and potentially eligible historic properties that may be affected within each corridor based upon available data and assessing these properties for their ownership and use. The study team will request DNR to identify Section 6(f) resources and any other resources that have received special funding in the study area. Consultation with resource agencies may identify other unique lands with special funding associated and/or unique protection. All identified properties will be discussed in the EIS. The potential effect to these properties will be determined.

Formalized evaluation of impacts to Section 4(f) and/or 6(f) properties or other specially funded conservation lands (including development of avoidance or minimization alternatives and agency coordination) will be deferred to Tier 2 analyses.
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 (54 USC 306108 and 306101)
- 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 Facilities Development Manual, Chapter 26, Cultural Resource Preservation
- U.S. Army Corps of Engineers 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 and include evaluation of the resources to determine eligibility for listing in 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 effects.

FHWA is the Lead Federal Agency for the Section 106 consultation process, in cooperation with WisDOT.

12.3 Project Specific Methodology

Cultural resource investigations and reports prepared as part of the earlier studies will be used for this study. Properties listed in the National Register of Historic Places or already determined eligible for the National Register will be identified to determine whether there are any significant historic sites that could be affected within each alternative corridor. The Tier 1 EIS will not include surveys that may be needed to make formal eligibility determinations for potentially eligible historical properties but will include windshield surveys to confirm documented properties still remain.

Tier 2 analyses will follow the Section 106 process, including formal determinations of eligibility, assessment of effects, consultation, and resolution of adverse effects, if necessary.
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 (54 USC 306108)
- 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
- U.S. Army Corps of Engineers Regulations for Processing Department of the Army Permits (33 CFR, Part 325); Appendix C of the regulations includes procedures for protection of historic properties

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 Wisconsin Historical Society and include evaluation of the resources to determine eligibility for listing in the National Register of Historic Places, 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 effects.

13.3 Project Specific Methodology

Cultural resource investigations and reports prepared as part of the earlier studies will be used for this study to determine whether there are any significant archaeological sites that could be affected within each alternative corridor. No fieldwork is anticipated. The Tier 1 EIS will not include follow-up surveys (i.e., “Phase 2 Surveys”) that may be needed to make formal eligibility determinations to define the extent and nature of an archaeological site. Tier 2 analyses will follow the Section 106 process, including formal determinations of eligibility, assessment of effects, consultation, and resolution of adverse effects, if necessary.
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/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 may be prepared as part of the EIS. Impacts to businesses and homes due to changes in access during and after construction are also evaluated.

14.3 Project Specific Methodology

Businesses and residences will be identified using aerial photography, supplemented by windshield surveys. For the Tier 1 EIS, business and residential relocations will be expressed, by alternative corridor, as a range of potential impacts.

Tier 2 assessments will quantify business and residential relocations that are needed for the project based on the detailed design and right of way requirements that will be available at that time.
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 Facilities Development Manual (FDM) Chapter 25, Socioeconomic Factors

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 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

For the Tier 1 EIS, the socioeconomic analysis will focus on land use, demographics, economics and public services and facilities. Each of these aspects of the study area will be characterized, describing the fabric of the study area and what might be impacted by the alternative corridors.

Socioeconomic data collected will include U.S. Census data and community plans and facility information (i.e., land use and development plans, community facilities, bike/ped facilities).

The analysis of the socioeconomic issues will include evaluation of the effects of proposed transportation improvements to population and employment, compatibility with land use and economic development plans, community disruption and impacts on community facilities.

Tier 2 assessments will evaluate socioeconomic impacts due to changes in individual property accessibility, right of way acquisition, transit changes, pedestrian/bicycle mobility, and compatibility of adjacent properties with the proposed improvements.
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:

- Council on Environmental Quality, Environmental Justice Guidance Under the National Environmental Policy Act (December 10, 1997)
- Memorandum of Understanding on Environmental Justice and Executive Order 12898 (August 4, 2011)
- FHWA Guidance on Environmental Justice and NEPA-Memo to the Field (December 16, 2011)
- Department of Transportation Environmental Justice Strategy (November 15, 2016)
- U.S. DOT Order on Environmental Justice, DOT Order 5610.2(a), 1997 and as updated (Federal Register Vol. 77, No. 91, May 10, 2012)
- FHWA Order 6640.23A, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (June 14, 2012)
- FHWA Environmental Justice Reference Guide (April 1, 2015)
- Title VI of the Civil Rights Act of 1964 (Title VI)

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 populations 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 environmental justice in transportation decision-making is based on the following principles listed in FHWA Order 6640.23A paragraph 6(f):

- Identifying and evaluating environmental, public health, and interrelated social and economic effects of FHWA programs, policies, and activities;

- Proposing measures to avoid, minimize, and/or mitigate disproportionately high and adverse environmental or public health effects and interrelated social and economic effects, and providing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by FHWA programs, policies, and activities, where permitted by law and consistent with EO 12898;

- Considering alternatives to proposed programs, policies, and activities where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts, where permitted by law and consistent with EO 12898; and
• Providing public involvement opportunities and considering the results thereof, including providing meaningful access to public information concerning the human health or environmental impacts and soliciting input from affected minority populations and low-income populations in considering alternatives during the planning and development of alternatives and decisions.

16.3 **Project Specific Methodology**

For the Tier 1 EIS, the environmental justice analysis will describe the potential for disproportionate impacts to low-income populations and minority populations that could occur with the alternative corridors. The influence area is defined by the census tracts bordering the proposed improvements. The potential to affect low-income populations and minority populations would be evaluated by overlaying the study corridors on census tract mapping using GIS.

Environmental justice analysis will be based on demographic information from the Wisconsin Demographic Services Center of the Department of Administration, the most current U.S. Census and the most recent American Community Survey data. It will also be supplemented with information from local agencies/organizations and through public involvement and community outreach.

Tier 2 assessments will further investigate potential impacts to low-income populations and minority populations based on the detailed design that will be available at that time, and determine whether each Tier 2 project will result in disproportionately high and adverse effects on minority and/or low income populations.
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, Hazardous Materials Investigation

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 that 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

No Phase 1 hazardous materials investigation will be conducted for the Tier 1 EIS. The Lower Fox River is a federal Superfund cleanup project site undergoing active remediation of river sediments contaminated with polychlorinated biphenyl compounds (PCBs), with oversight by DNR and US EPA pursuant to Superfund. This site will be identified in the Tier 1 EIS affected environment, and potential impacts will be coordinated with DNR and EPA. A database search for additional sites on the National Priorities List (Superfund) and other regulated materials databases will be conducted to determine the potential for each corridor alternative to impact hazardous materials.

Tier 2 assessments will include additional site screening, Phase I and more advanced site characterization studies as needed, based on the detailed design and right of way acquisition information that will be available at that time.
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:

- 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

Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8).

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.
- The analysis is supported by input/information from local officials, agencies and community outreach activities.

18.3 Project Specific Methodology

For the Tier 1 EIS, the indirect and cumulative effects analysis will include up to six interviews with persons knowledgeable about land-use development patterns in the study area. No expert panel discussion will be conducted. The indirect effects analysis will be qualitative.

The assessment will broadly consider the growth-inducing impacts that could result from the different corridor alternatives, including potential redevelopment or secondary development, population/job growth, economic benefits or other impacts that may result from project-induced growth. Indirect effects and potential mitigation strategies will be evaluated. The Tier 1 EIS will include a high-level discussion of the potential impacts, the type of mitigation strategies that could be employed and the agency that would be responsible for implementation.
The alternative corridors may alter the long-term functions of natural systems, and any such potential impacts that can be identified during the Tier 1 analysis will be addressed in combination with the project’s direct effects on the particular resource.

Tier 2 assessments will provide detailed indirect impacts analyses, commensurate with the scope of each Tier 2 project, based on the detailed resources studies that will be performed, the proposed improvements and the design details that will be available at that time.
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 guidance: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process
- 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

Cumulative effects are impacts on the environment that result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

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.
- The analysis is supported by input/information from local officials, agencies and community outreach activities.
19.3 Project Specific Methodology

For the Tier 1 EIS, the cumulative effects analysis will be a qualitative analysis. The assessment will include a geographic range no greater than Brown County and a time frame no greater than the adopted local comprehensive plans in effect (the range of local future land use plans is from 2030 - 2040). The qualitative assessment will focus on trends for the resources’ health and how the alternative corridors may or may not contribute to these trends. The assessment will focus on resources with the greatest potential cumulative impact implications or of stated importance to the agencies or the public. In the Tier 1 EIS, the discussion will be at a planning level and will not delve into specific parcels of land, with additional detail being provided for sensitive resources as identified through scoping, agency coordination and/or readily available information.

Tier 2 assessments will include more detailed analyses of cumulative effects, commensurate with the scope of each Tier 2 project, depending on the proposed improvements and the design details that will be available at that time.