Statement of Purpose

The Wisconsin Department of Transportation (WisDOT), on behalf of the Federal Highway Administration (FHWA), is responsible for conducting an environmental review for proposed transportation projects. Transportation projects vary in type, size and complexity, and their potential to affect the environment. Transportation project effects can vary from very minor to significant impacts to the natural and built environment. To account for the variability of project impacts, three basic "classes of action" are allowed for compliance as a part of the National Environmental Policy Act (NEPA) and Wisconsin Environmental Policy Act (WEPA) processes to fulfill requirements of 42 USC 4332, Wis. Stat. 1.12 and Trans 400.

1. An *Environmental Impact Statement (EIS)* is prepared for projects where it is known that the action will have a significant effect on the environment.
2. An *Environmental Assessment (EA)* is prepared for actions in which the significance of the environmental impact is not clearly established.
3. *Categorical Exclusions (CEs)* are issued for actions that do not individually or cumulatively have a significant effect on the environment.

Following an appropriate level of agency review and public involvement to solicit input from all affected public, WisDOT proposes that this project will not have significant environmental impacts, and has prepared an Environmental Assessment to document the NEPA process.

For Environmental Assessment Documents, a Finding of No Significant Impact (FONSI) is issued by FHWA when environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment. Significance is determined by context (area and setting of the project) and intensity (degree of impact or effect on a resource). If it is determined that there will be no significant impacts, FHWA will approve the Final EA and issue a FONSI statement to conclude the process and document the decision.

Organization and Content of this Document

WisDOT uses a series of worksheets to investigate, evaluate, and report the environmental effects of proposed transportation actions. The worksheets are comprised of Basic Sheets and Factor Sheets as a framework for preparing the EA. All Basic Sheets must be completed, while Factor Sheets are completed only if the specific resource they address is affected by the project in a way that warrants further discussion, whether negatively or positively.

The environmental document needs to be considered in its entirety. In other words, to completely understand the reasons that one alternative is chosen over another, the entire document must be considered.

The environmental document represents a process of consideration of potential impacts related to potential final design and construction. It is used to help decide the best option for final design and construction that has the least impacts on the environment while considering cost and engineering issues. Only preliminary engineering, or a level of engineering necessary to complete the environmental document, is allowed to occur during the NEPA phase of project development. Final engineering and construction can only occur after an environmental document has been completed.

ENVIRONMENTAL EVALUATION OF FACILITIES DEVELOPMENT ACTIONS

Wisconsin Department of Transportation
DT2094 12/2013

BASIC SHEET 1 – PROJECT SUMMARY

Project ID 1003-10-02 Construction ID 1003-10-79/80	Project Termini IL 75 to County S Cranston Road to WIS 140	Funding Sources *(check all that apply)* ☒ Federal ☒ State ☒ Local Estimated Project Cost and Funding Source (state and/or federal). Year of Expenditure (YOE) dollars include delivery cost. $104,000,000 (2017 - 2018)
Route Designation *(if applicable)* I-39/90 National Highway System (NHS) Route ☒ Yes ☐ No	Nearest Community City of Beloit and Town of Turtle	Real Estate Acquisition Portion of Estimated Cost (YOE) $6,000,000 (2016 – 2017)
Project Title I-39/90 and I-43/WIS 81 Interchange	Section / Township / Range Sections 16,17, 20, 21, 28, 29, 32/T1N/R13E	Utility Relocation Portion of Estimated Cost (YOE) $2,000,000 (2017)
County Rock County		
Bridge Number(s) *(if applicable)* Old – B-53-46/47/48 & 51 New – B-53-300/301/302/303/304/305/306/307/308	Scheduled start date – m/d/yyyy (Operational Planning Meeting (OPM) or Scoping Meeting) 05/02/2012	

Right of Way Acquisition	Acres
Fee	82
TLE	2
PLE	0

Functional Classification of Existing Route (FDM 3-5-2)	Urban	Rural
Freeway/Expressway	☒	☐
Principal Arterial	☐	☐
Minor Arterial	☐	☐
Major Collector		☐
Minor Collector		☐
Collector	☐	
Local	☐	☐
No Functional Class	☐	☐

WisDOT Project Classification (FDM 3-5-2)	
Resurfacing	☐
Pavement Replacement	☐
Reconditioning	☐
Expansion	☒
Bridge Rehabilitation	☐
Bridge Replacement	☐
"Majors" Project (there are both state and federal majors)	☒
SHRM	☐
Reconstruction	☐
Preventive Maintenance	☐
Safety	☐
Other – Describe: Interchange Reconstruction	☒

☐ FHWA Draft Categorical Exclusion (CE), Draft Type 2c/WisDOT Draft Environmental Report (ER). **No significant impacts indicated by initial assessment.**

☐ FHWA Final Categorical Exclusion (CE), Type 2c/WisDOT Final Environmental Report (ER). **No significant impacts will occur.**

☒ FHWA Environmental Assessment (EA), Type 3/WisDOT Environmental Assessment (EA). **No significant impacts indicated by initial assessment.**

[signature] 01/07/2015 AECOM PM — [signature] 1/9/2015

(Signature – Company/Organization) (Date – m/d/yy) (Title) (Signature – Director, Bureau of Technical Services) (Date – m/d/yy)

[signature] 1-7-2015 WisDOT Project Manager — [signature] George Poirier 1-20-2015

(Signature – Company/Organization) (Date – m/d/yy) (Title) (Signature) (Date – m/d/yy) (Title)

☒ Region ☐ Aeronautics ☐ Rails & Harbors ☒ FHWA ☐ FAA ☐ FTA ☐ FRA

After reviewing and addressing substantive public comments, updating the Environmental Assessment (EA) and coordinating with other agencies, it is determined this action:

☐ **Will NOT significantly affect** the quality of the human environment. This document is a Final Categorical Exclusion / Final Environmental Report.

☐ **Will NOT significantly affect** the quality of the human environment. This document is a Finding of No Significant Impact (FONSI).

☐ **Has potential to significantly affect** the quality of the human environment. Draft Environmental Impact Statement (EIS) required.

PREPARER

(Signature – Company/Organization) (Date – m/d/yy) (Title) (Signature – Director, Bureau of Technical Services) (Date – m/d/yy)

(Signature – Company/Organization) (Date – m/d/yy) (Title) (Signature) (Date – m/d/yy) (Title)

☐ Region ☐ Aeronautics ☐ Rails & Harbors ☐ FHWA ☐ FAA ☐ FTA ☐ FRA

Table of Contents

Listing of Factor Sheets and Appendices/Exhibits

BASIC SHEETS DEFINED

This section of the Environmental Assessment (EA) is called the "Basic Sheets." It contains background information for the study, defines the purpose and need and describes all of the alternatives that were studied to address the purpose and need. This section also provides information on public involvement, environmental factors, a summary of impacts, and other information pertinent to the EA.

Introduction

1) Project History

The proposed project consists of reconstructing the I-39/90 and I-43/WIS 81 interchange. The project area study limits can be seen in Figure 1 below. The I-39/90 and I-43/WIS 81 interchange was originally built in 1960 as an I-90 interchange with WIS 81 to the west and WIS 15 to the east. WIS 15 extended from I-90 just east of Beloit to Milwaukee; and I-90 extended across the United States from Seattle, Washington to Boston, Massachusetts. In the mid 1980's, WIS 15 had its designation changed to I-43. The I-43 interchange configuration itself has remained the same since 1960. As a result, the interchange is nearing the end of its useful life. Capacity on I-39/90 will be increased by one lane in each direction to meet current and future demand, providing a unique opportunity to bring I-43/WIS 81 interchange up to current interstate-to-interstate design standards.

Figure 1 – Project Area Study Limits Map

Planning studies and projects in the corridor include: A corridor study EA/FONSI was completed in 2010 to determine the improvements needed to I-39/90 (project ID 1001-07-00) and an Environmental Assessment (EA) Re-Evaluation under project ID 1001-10-02 was completed in 2014.

2010: Corridor Study

The Wisconsin Department of Transportation (WisDOT) conducted a 45.5 mile corridor study along I-39/90 from the Illinois State Line to Madison from 2004 to 2010. The purpose of the study was to evaluate highway upgrades necessary to meet current design standards, improve safety, accommodate future traffic with an acceptable level of service (LOS), and to replace aging pavements and structures. The study culminated with an approved EA in 2008 and a Finding of No Significant Impact (FONSI) in 2010. The originally-scoped I-43 interchange reconfiguration was addressed with the 2010 EA.

2012: EA Re-Evaluation of 2010 EA/FONSI

In 2012, WisDOT initiated an I-39/90 EA Re-Evaluation of the 2010 EA/FONSI to document the environmental impacts of proposed design changes to the preferred alternative. The re-evaluation included all 45.5 miles of the original 2010 Corridor Study, except for the I-43 and US 12/18 interchanges and the document was approved on October 30, 2014. The Federal Highway Administration (FHWA) and WisDOT have determined a stand-alone National Environmental Policy Act (NEPA) document is appropriate for these two interchanges due to scope changes at these locations. The re-evaluation addressed the addition of a lane in each direction through each interchange and appropriate ramp designs to keep the interim interchanges operable.

2013: EA for I-39/90 and I-43/WIS 81 Interchange (Project ID 1003-10-02)

To ensure the entire corridor analysis and re-evaluation properly considered overall corridor impacts, the original I-43/WIS 81 interchange impacts included in the 2010 EA/FONSI were considered as part of the 2012 EA corridor re-evaluation referenced above. This NEPA document is being developed to reflect the updated scope of the I-39/90 and I-43/WIS 81 interchange reconfiguration and need to enhance local mobility. The scope of this interchange reconfiguration was originally based on the need to accommodate the I-39/90 interstate expansion, to provide higher speed free-flow interstate-to-interstate access, and maintain the existing local access into Beloit. Several of the design features of the preferred alternative from the original EA either do not meet current design standards or are not desirable design features for safety and operational reasons. The original design is also not consistent with the City of Beloit's 2008 Comprehensive Plan to develop regional commercial development in the area adjacent to the I-43 interchange. Therefore, during the preliminary design phase, the interchange scope was broadened as a result of public involvement and coordination with Beloit and Rock County.

As additional alternatives were developed and evaluated with input from the local officials and public, it became apparent the scope and impacts of the revised recommended I-43 interchange design were more extensive than would be appropriate for only a re-evaluation of the original interchange design presented in the original EA. Furthermore, other than adding additional lanes to I-39 through the interchange, all of the other proposed improvements to the I-43 interchange could be implemented independently. It was therefore concluded evaluating alternatives and impacts for upgrading the I-39/I-43/WIS 81 interchange at Beloit would more appropriately addressed with a new separate EA environmental document. This decision was documented on May 22, 2013 in a memo from WisDOT's Environmental Process and Documents (EPDS) Section. The proposed approach was also presented and discussed with environmental resource agencies on May 30, 2013. Each of the resource agencies supported the preparation of a new Environmental Assessment for the work associated with the I-43/WIS 81 interchange.

2) Importance of the Existing Interchange

I-43 is a route of state, regional, and local importance. The route is included in the National Highway System (NHS). This interstate serves and connects Beloit, Milwaukee, and Green Bay. I-43 is identified as a Backbone route by the WisDOT Connections 2030 Transportation Plan and as a Primary Highway in the Glacial Plains Corridor in Connections 2030. This interchange provides an important interstate-to-interstate access to connect major cities in both Wisconsin and Illinois.

The I-39/90 & I-43/WIS 81 interchange is the main entrance to Beloit. Beloit has 37,000 population and the Greater Beloit area has a population of 67,000. The City's land use and transportation system have been established with this interchange as the main entrance. In the interchange's northwest and southwest quadrants, the existing land use includes highway dependent businesses such as truck stops, gas stations, fast-food restaurants, and traveler information stations. In the northwest quadrant there is also a Wal-Mart store. In recent years, Beloit has expanded to east of the interchange with the 450 acre Gateway Business Park in the southeast quadrant.

3) Purpose and Need Summary

The purpose of the proposed I-39/90 and I-43/WIS 81 interchange improvements is to upgrade the interchange to meet current design standards, improve overall safety, accommodate future traffic with an acceptable Level of Service (LOS), replace aging pavements and structures, and enhance local mobility to the city of Beloit. The need for the project includes:

- **Route Importance/System Linkage** – Both I-39/90 and I-43 are WisDOT backbone routes that are part of the NHS. I-39/90 truck traffic is higher compared to other Wisconsin interstate highways. The I-39/90 & I-43/WIS 81 interchange serves as an important connector route in the state of Wisconsin and serves as the primary interstate access to the city of Beloit via WIS 81. Local access from this interchange is important in order to be consistent with local and regional transportation and land use planning objectives and to be compatible with the proposed roadway improvements identified in the City of Beloit's 2008 Comprehensive Plan. The plan includes the desire to develop regional commercial uses near the I-43 interchange. Specifically, the area between I-43 and IL 75 has been identified as an area for future business park development.
- **Traffic Roadway Capacity** – Existing I-39/90 and I-43 were evaluated to determine the interchange's roadway capacity. The results indicate the interchange will operate at LOS F in the design year 2040. Most diverge and merge movements will also operate at LOS F in the design year. Weave movements onto I-39/90 are anticipated to operate at LOS D in the design year.
- **Safety** – There are three weaving movements at the current interchange that have crash rates over 50% higher than the state average for freeway segments.
- **Interchange Deficiencies** – The existing pavements and structures are aging and deteriorated based on 1983/84 pavement and 1959 structures. The interchange configuration is from the original 1960 interchange construction which results in several interchange design deficiencies that do not meet current WisDOT Facilities Development Manual (FDM) standards. These deficiencies include speed ratings on ramps, taper entrance ramps, and ramp superelevations.

4) Proposed Interchange

The project will provide a safe and efficient transportation system at the I-39/90 and I-43/WIS 81 interchange. The project length totals 4.6 miles in the project area. The north-south leg of I-39/90 has a length of approximately 2.7 miles. The east-west leg of WIS 81/Milwaukee Road and I-43 has a length of approximately 1.9 miles. The alignment of I-39/90 will be shifted to the east such that the southbound lanes will be located on the existing location of the northbound lanes. It will also provide improved access to Gateway Business Park and maintains all other access to the Beloit urban area. The new I-39/90 and I-43/WIS 81 interchange will include posted 65 mph free-flow movements from I-43 southbound to I-39/90 southbound and from I-39/90 northbound to I-43 northbound. It will also include posted 55 mph free-flow movements from I-39/90 southbound to I-43 northbound and from I-43 southbound to I-39/90 northbound.

BASIC SHEET 2 – PURPOSE AND NEED

1. Purpose and Need

A. Purpose of Project

The purpose of the proposed I-39/90 and I-43/WIS 81 interchange improvements is to upgrade the interchange to meet current design standards, improve overall safety, accommodate future traffic with an acceptable level of service (LOS), replace aging pavements and structures, and enhance local mobility to the city of Beloit. The project will serve existing and future traffic demands while minimizing disturbance to the natural and built environment. The logical termini for this project extend along I-39/90 from IL-75 south of I-43 to County S and along WIS 81/I-43 from Cranston Road in the city of Beloit to WIS 140 (see **Appendix 1 Project Termini Map**). The anticipated reconstruction limits for this interchange extends north along I-39/90 from the WisDOT Welcome Center south of I-43 to E. Hart Road and east along WIS 81/I-43 from Freeman Parkway in the city of Beloit to County X/Hart Road Interchange (see **Appendix 2 Project Area Study Limits Map**).

B. Project Need

1. Route Importance/System Linkage

I-39/90 is a route of national, state, regional, and local importance. The route is included in the National Highway System (NHS) and is part of Interstate Highway and Defense System that was funded beginning in 1956. I-90 is the longest, most northern, east-to-west interstate highway in the United States. In 1992, I-39 was added to the I-90 designation in Wisconsin from the Illinois State line to eastbound WIS 29 near Wausau. I-39/90 is identified as a Backbone route by WisDOT's Corridors 2030 Transportation Plan (see **Appendix 3 Corridors 2030 Transportation Plan**) and as a Primary Highway in the South Central Connection Corridor in Connections 2030.

The I-39/90 corridor is a federal truck route, with about 35 percent of its total traffic volume consisting of heavy trucks. The truck route designation increases the importance of the route to operate safely and efficiently. The high volume of trucks compared to other interstate segments signifies the importance of the route in movement of goods throughout the state. Table 1-1 lists several segments of interstate highways in Wisconsin with their corresponding truck percentages.

Table 1-1: Wisconsin Interstate Highway Truck Percentage

Year	Site Code	County	Interstate Highway	Truck %	AADT
2010	530275	Rock	I-39/90 N. of County S La Prairie Township	35	45,700
2009	491126	Portage	I-39/USH 51 between Casimir Road and BUS USH 51	20	22,900
2010	670101	Waukesha	I-94 West of WIS 67 - Oconomowoc Lake	20	42,300
2010	510001	Racine	I-94 - 1.5 miles S. of Milwaukee County - Kilbournville	18	87,200
2010	450239	Ozaukee	I-43 - 0.9 miles N. of WIS 84 - Port Washington	14	24,900

I-43 is currently a route of state, regional, and local importance and it is included in the NHS. This interstate serves and connects Beloit, Milwaukee, and Green Bay. I-43 is identified as a Backbone route by the WisDOT Corridors 2030 Transportation Plan (**Appendix 3**) and as a Primary Highway in the Glacial Plains Corridor in Connections 2030.

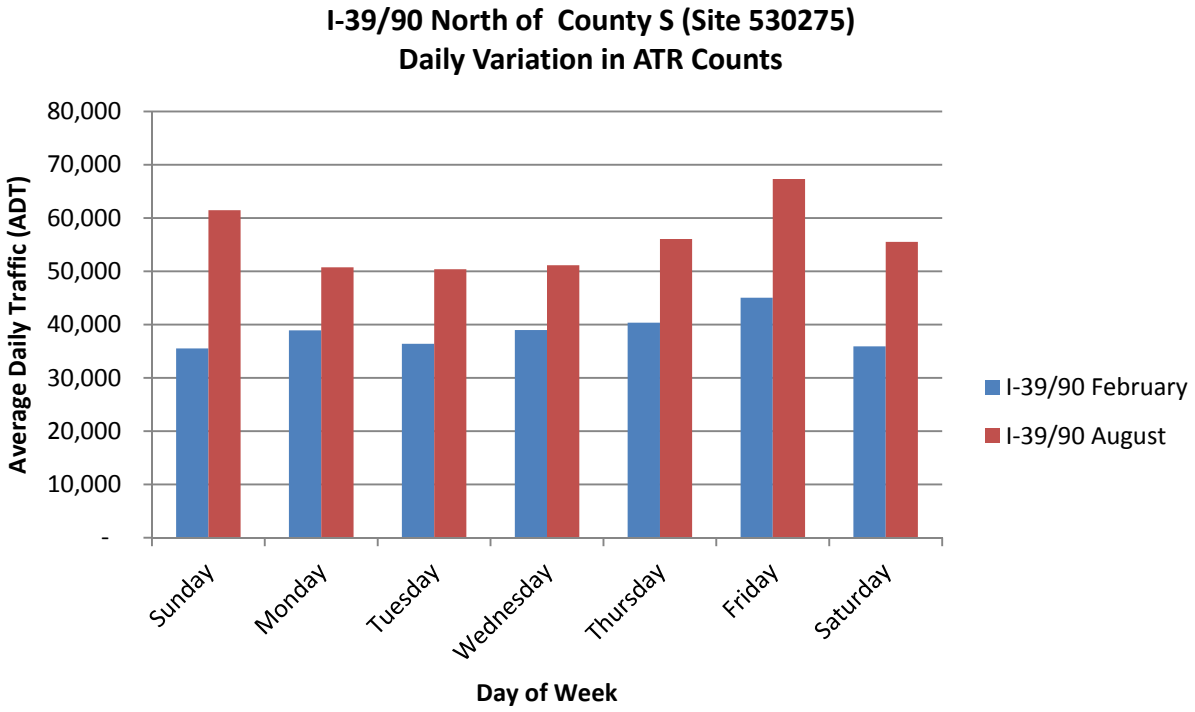
The I-39/90 and I-43/WIS 81 interchange is currently a full cloverleaf configuration that operates as a system interchange between two high volume interstate highways, I-39/90 and I-43. This interchange serves as an important state, regional and local commuter route connector. Substantial traffic generators use the I-43 interchange that includes recreational, commercial, and industrial facilities in the Beloit, Janesville, and Madison areas.

The I-39/90 and I-43/WIS 81 interchange serves as the primary interstate access to the city of Beloit via WIS 81. There are several other local access roads from the east into the city of Beloit. **Appendix 4** shows the local access into the city of Beloit. Local access from this interchange is important in order to be consistent with local and regional transportation and land use planning objectives and to be compatible with the proposed roadway improvements identified in the city of Beloit's 2008 Comprehensive Plan. The plan includes the desire to develop regional commercial uses near the I-43 interchange. Specifically, the area between I-43 and IL 75 has been identified as an area for future business park development.

2. Traffic and Roadway Capacity

The primary deficiency at this interchange is that the two heaviest traffic volumes, northbound I-39/90 to northbound I-43 and southbound I-43 to southbound I-39/90, are served by single lane, low speed ramps that do not provide sufficient capacity for the traffic volumes. The existing traffic volumes (2013) are continually monitored along I-39/90 by an automatic traffic recorder (ATR) site 530275 just north of the I-39/90 and I-43/WIS 81 interchange. The volume of traffic on this rural segment of I-39/90 fluctuates by both month and day as shown on Graph 1-1. The graph shows that summer months (August) and weekends have higher traffic volumes. This variance in traffic reflects the importance of the I-39/90 corridor to summer tourism travel from Illinois to Wisconsin.

Graph 1-1
2013 I-39/90 and I-43 Daily Variations in Traffic

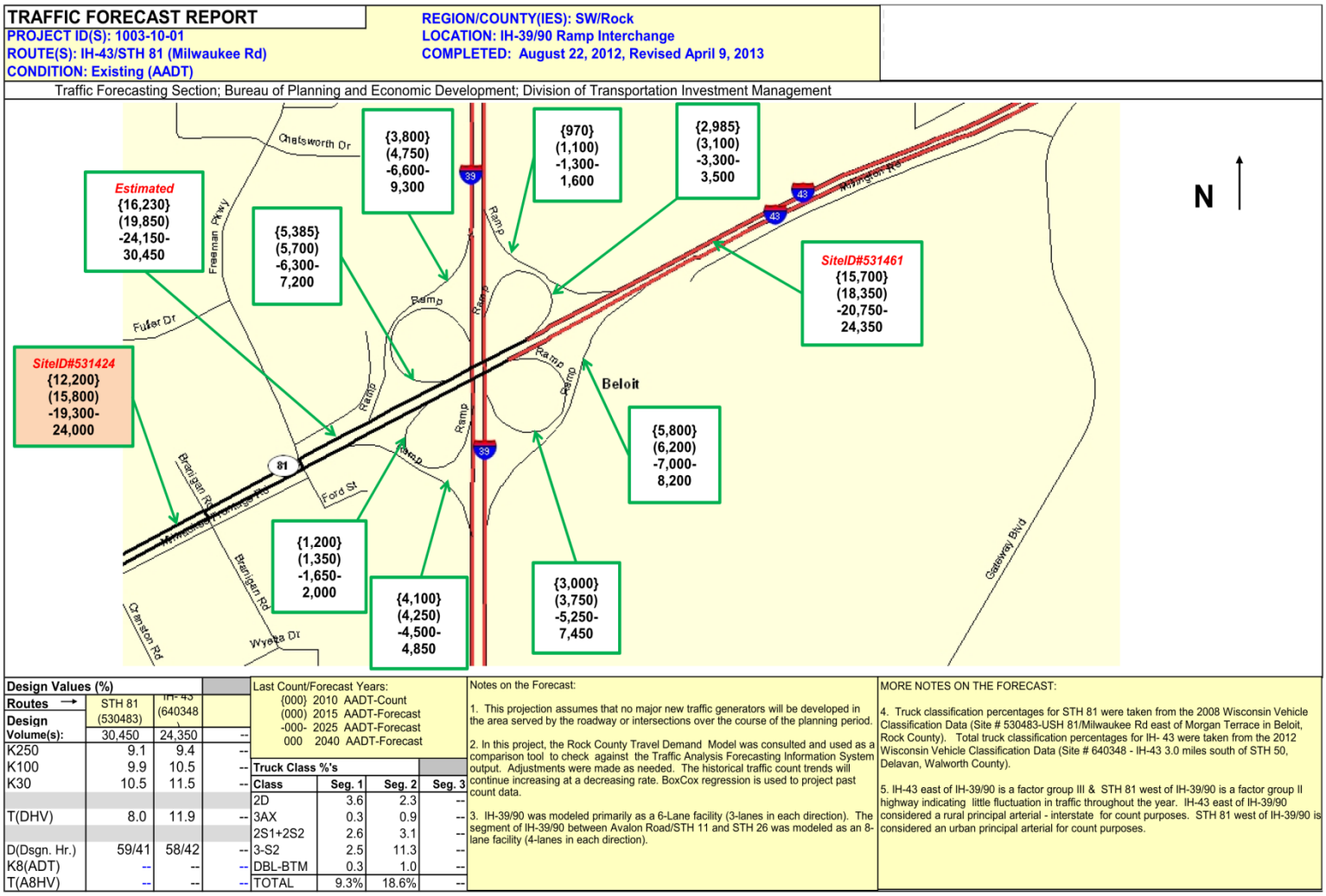


Source: Wisconsin Hourly Traffic Data Access Portal, Automatic Traffic Recorder (ATR) Station 530275

3. Traffic Analysis

WisDOT central office traffic forecasting unit provided traffic projections for the I-39/90 & I-43/WIS 81 interchange based on turning movement counts taken in April 2012, coverage counts from 2010, and the Rock County Travel Demand Model. Future Average Daily Traffic (ADT) volumes were developed for I-39/90 & I-43/WIS 81 interchange ramps, I-39/90, I-43, and WIS 81 for 2015, 2025, and the design year 2040. Figure 1-1 is the WisDOT Traffic Forecast that was provided for the existing I-39/90 & I-43/WIS 81 Interchange. Forecasted turning movement volumes at the I-39/90 & I-43/WIS 81 interchange were developed for the AM and PM peak hours and the ADT for the years 2015, 2025, and 2040. WisDOT traffic forecast information can be found in **Appendix 21**.

Figure 1-1
I-39/90 and I-43/WIS 81 Traffic Forecast



These projections take into account anticipated land use changes and estimated travel patterns. Highways are typically designed for 20 years after construction and, given the anticipated construction between 2016 and 2020, forecast updates for 2040 are desirable. Graph 1-2 details how traffic volumes are projected to increase from 2010 to design year 2040 along the I-39/90 and I-43 mainlines.

Traffic on I-39/90 north of the I-43 interchange between 2010 and the design year 2040 is anticipated to increase 81 percent and traffic on I-39/90 south of the I-43 interchange during this same time period is anticipated to increase 54 percent. Traffic on I-43 east of the interchange is anticipated to increase 55 percent between 2010 and 2040. Heavy trucks make up about 35 percent of the number of vehicles that pass a given location on an average day of the year (Average Annual Daily Traffic (AADT)) on I-39/90 and 19 percent of the AADT on I-43.

Graph 1-2
AADT during 2010 and Forecasted Design Year (2040)

I-39/90 North of I-43 Interchange (Site 530103)
I-39/90 South of I-43 Interchange (Site 530335)
East of I-43 Interchange (Site 531461)

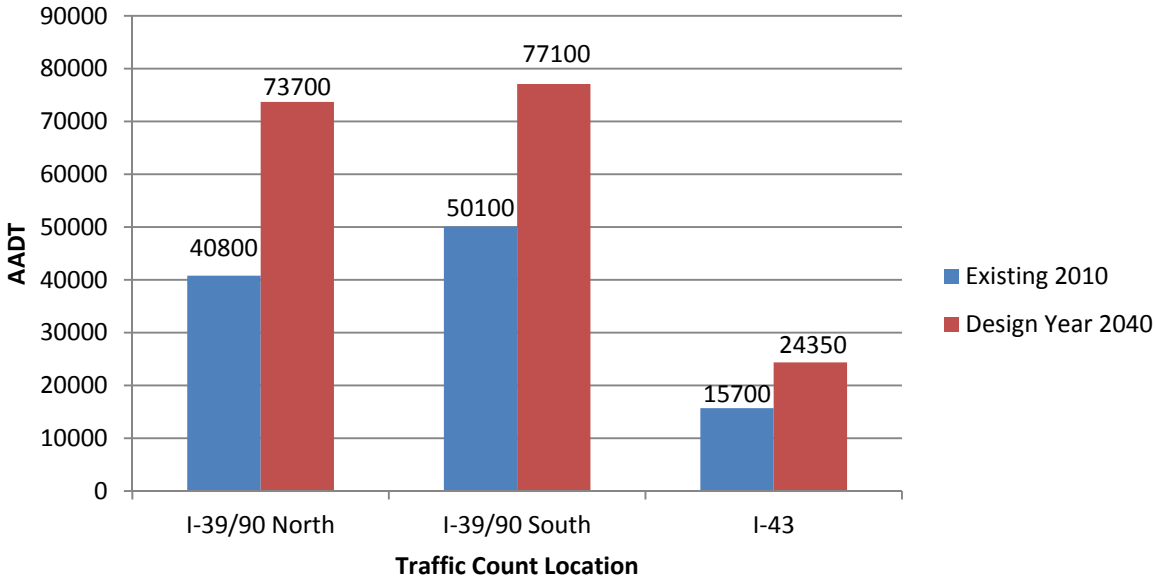


Table 1-2 summarizes the AADT and the design hour volumes for the I-39/90 and I-43/WIS 81 interchange ramps in 2010 and design year 2040. The design hourly volume is recommended by the American Association of State Highway and Transportation Officials (AASHTO) as the 30th highest hourly volume of the year (K30).

Table 1-2: I-39/90 & I-43/WIS 81 Ramp Volumes
AADT and K30 Values for 2010 and Design Year 2040

I-39/90 & I-43/WIS 81 Ramp	Type of Ramp	2010 AADT	2040 AADT	2010 K30 (vph)
NB Off-Ramp to NB I-43	Directional	5,800	8,200	665
NB On-Ramp from NB WIS 81	Loop	3,000	7,450	345
NB Off-Ramp to SB WIS 81	Loop	2,985	3,500	345
NB On-Ramp from SB I-43	Directional	970	1,600	110
SB Off-Ramp to SB WIS 81	Directional	3,800	9,300	435
SB On-Ramp from SB I-43	Loop	5,385	7,200	620
SB Off-Ramp to NB I-43	Loop	1,200	2,000	140
SB On-Ramp from NB WIS 81	Directional	4,100	4,850	470

VPH-vehicles per hour

A traffic operational analysis was completed to determine 2010 and design year 2040 levels of service for the I-39/90 mainline, I-43 mainline, and I-43/WIS 81 interchange. Level of service (LOS) is a measure of the highway's operations and response to traffic demands. Table 1-3 describes each LOS and Figure 1-2 illustrates traffic conditions associated with each LOS for a multilane divided facility. LOS designations range from A to F. LOS C indicates that the roadway is operating at or near the free-flow speed and minor incidents can be absorbed without traffic backups. LOS D indicates that the roadway is operating slightly below the free-flow speed, but minor incidents will cause traffic backups. LOS E indicates that the roadway is operating at capacity; the traffic stream offers no usable gaps to maneuver; and any incident will cause extensive traffic backups. LOS F describes breakdowns in traffic flow, and any maneuver, such as merging, weaving, or lane drop, results in traffic backing up. It is desirable that a facility operates at LOS C or better in the design year.

TABLE 1-3 LEVEL OF SERVICES DESCRIPTIONS	
LOS A	Drivers virtually unaffected by others High level of freedom to select speed and maneuver Excellent level of driver comfort and convenience
LOS B	Drivers aware of use by others Slight restriction in speed and maneuvering Good level of driver comfort and convenience
LOS C	Driver operation significantly affected by others Moderate restriction in speed and maneuvering Fair level of comfort and convenience
LOS D	Driver operation completely affected by others Severe restriction in speed and maneuvering Poor level of driver comfort and convenience
LOS E	Slow speeds and traffic backups; some stoppage Total restriction in vehicle maneuvering High driver frustration
LOS F	Stop and go movements with long backups and delay Forced vehicle maneuvers Maximum driver frustration

Figure 1-2
Level of Service Characteristics

Freeway segments, merge, diverge and weave areas for the I-39/90 and I-43/WIS 81 interchange can be seen in Figure 1-3. Table 1-4 summarizes the 2010 and forecasted design year 2040 Level of Service (LOS) for the I-39/90 segments. Operations were analyzed separately for both northbound and southbound on I-39/90. After evaluating 2010 and projected design year 2040 traffic volumes the anticipated LOS is not desirable. All segments on I-39/90 in 2010 operate at a LOS C; compared to 2040 in which they are anticipated to operate at a LOS F. Table 1-5 summarizes the operations for the unacceptable merge, diverge, and weave operations at the existing I-39/90 and I-43/WIS 81 interchange ramp junctions.

Figure 1-3
I-39/90 and I-43/WIS 81 Merge, Diverge, and Weave Areas

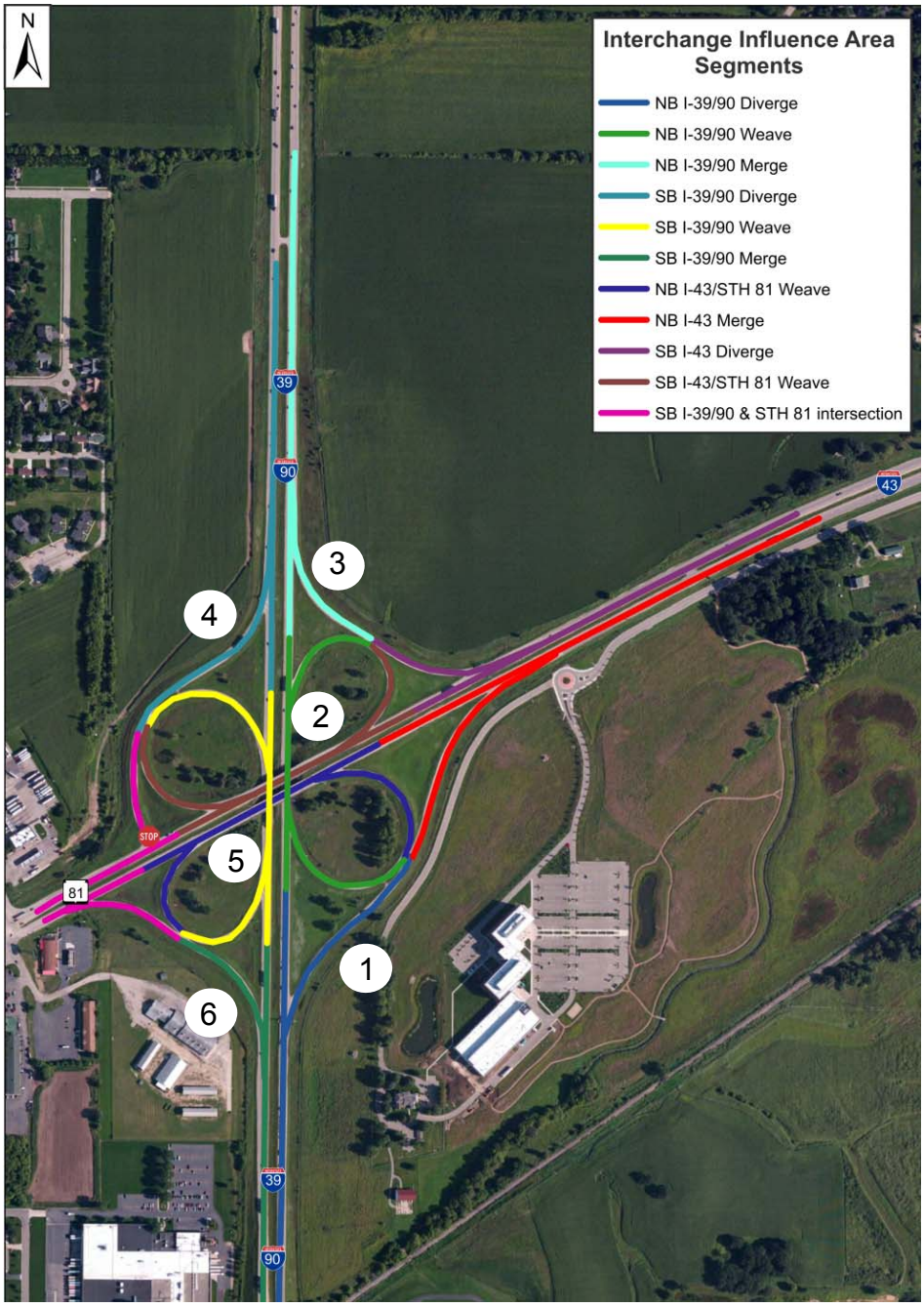


Table 1-4: Freeway Operational Analysis
K30 Volumes Existing Year 2010 and Design Year 2040

I-39/90 Segment	Year 2010 K30 Existing		Year 2040 K30 No Build	
	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
Illinois State Line to I-43/WIS 81 - NB	C	24	**F**	51
Illinois State Line to I-43/WIS 81 - SB	C	24	**F**	51
I-43/WIS 81 to County S - NB	C	19	**F**	45
I-43/WIS 81 to County S - SB	C	19	**F**	45

Pc/mi/ln – Passenger Cars/Mile/Lane

Table 1-5: I-39/90 Ramp Junction Operational Analysis
K30 Volumes for 2010 and Design Year 2040

Ramp Movement	Figure 1-3 Color Reference	Analysis Type	Year 2010 K30 Existing		Year 2040 K30 No Build	
			LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
NB Off-Ramp to NB I-43	1	Diverge	C	27	**F**	42
Between NB Loop Ramps on I-39	2	Weave	B	16	**D**	31
NB On-Ramp from SB I-43	3	Merge	C	23	**F**	40
SB Off-Ramp to SB WIS 81	4	Diverge	C	22	**F**	40
Between SB Loop Ramps on I-39	5	Weave	B	16	**D**	28
SB On-Ramp from NB WIS 81	6	Merge	C	27	**F**	40

According to WisDOT's Facilities Development Manual (FDM) indicates that Connections 2030 backbone routes and interstates must achieve LOS 'C' or better to be considered acceptable. This would include the merge, diverge, and weaving traffic associated with both I-39/90 and I-43. Based on the analysis of the I-39/90 and I-43/WIS 81 interchange, both the diverge and merge ramp movements in Table 1-5 operate at LOS C in 2010. In the design year 2040 they are anticipated to operate at LOS F. The weave movements between ramps operate at LOS B in 2010 and operate at LOS D in the design year 2040. This interchange does not meet the desirable LOS C for the ramp movements listed in Table 1-5 in the design year 2040.

As depicted in Tables 1-4 and 1-5, it is necessary to increase the capacity of the I-39/90 and I-43/WIS 81 interchange to meet the anticipated 2040 traffic demands. The current cloverleaf design also does not have the capability needed to operate near the free-flow speed along the interstates.

4. Safety

A 5-year crash analysis from 2008 – 2012 was completed at the I-39/90 and I-43/WIS 81 system interchange. Table 1-6 below summarizes the segment crash rates and severity for each of the segments in the interchange influence area. Along I-39/90, the influence area was extended 1,500 feet from the beginning of the entrance ramp or exit ramp at both the on-ramps and off-ramps. Likewise, along I-43, the influence area was extended 1,500 feet from the beginning of the entrance ramp or exit ramp at both the on-ramps and off-ramps east of the interchange.

Crash rates were calculated as crashes per hundred million vehicle miles traveled (HMVMT). Segment crash rates were compared to the statewide average and segments that exceeded the statewide average are highlighted on Table 1-6. The overall I-39/90 & I-43/WIS 81 influence area had a total of 110 crashes over the five year crash analysis period. 33% of these crashes resulted in personal injury, 9% of them being high severity crashes (Type A crashes).

Three weaving areas at the interchange had higher crash rates than the state average. The SB I-39/90 weave has a crash rate is more than twice the amount of the statewide 5-year average crash rate. The weaving sections are located between the on-ramps and off-ramps. These areas have a high amount of merging and diverging vehicles which creates more opportunities for crashes. These crashes may be due to the insufficient length for safe lane changes. There is inadequate spacing from a safety perspective between the loop ramps for vehicles to properly merge/diverge at this interchange.

Table 1-6: I-39/90 & I-43/WIS 81 Interchange
Crash Rate
Years 2008 – 2012

Segment	Total Crashes	Segment Length (miles)	5-year Avg Segment Crash Rate[1]	Statewide 5-year Avg Crash Rate[2]	PDO[3]	Injury Crashes			
						C[4]	B[5]	A[6]	Fatal
NB I-39/90 Diverge	11	0.43	28	73	5	1	3	2	0
NB I-39/90 Weave	23	0.23	116	73	15	4	3	1	0
NB I-39/90 Merge	8	0.43	25	73	6	1	1	0	0
SB I-39/90 Diverge	8	0.39	28	73	7	0	1	0	0
SB I-39/90 Weave	36	0.23	202	73	27	3	2	4	0
SB I-39/90 Merge	5	0.39	14	73	3	2	0	0	0
NB I-43/WIS 81 Weave	7	0.24	124	73	4	0	1	2	0
NB I-43/WIS 81 Merge	6	0.45	47	73	5	1	0	0	0
SB I-43/WIS 81 Diverge	3	0.38	28	73	1	0	2	0	0
SB I-43/WIS 81 Weave	3	0.24	39	73	1	0	1	1	0
Totals	**110**	**-**	**-**	**-**	**74**	**12**	**14**	**10**	**0**

1. Crash Rate Calculation = (100,000,000 x # of Crashes) / (Time frame of the analysis (years) x Annual Average Daily Traffic x Segment Length (miles) x 365)
2. 2008-2012 five-year statewide average crash rate for Peer Group 7 – Large Urban Freeway
3. PDO – Property Damage Only
4. Type C – Possibly Injury
5. Type B – Non-incapacitating injury
6. Type A – Incapacitating injury

5. Interchange Deficiencies

The I-39/90 and I-43/WIS 81 interchange pavements and structures are aging and deteriorated. The original interchange was constructed in 1960. The I-39/90 pavement was replaced in 1983 and 1984 and required resurfacing in 2004. The 1983/1984 pavement structure has 31 years of service and will require continued maintenance since it is beyond its planned service life of 20 years. The original bridge structures B-53-46/47/48/51 (see **Appendix 7**) in the project area were constructed in 1959. All shoulder widths on the bridges do not meet the current 12-foot WisDOT standard.

The I-39/90 and I-43/WIS 81 interchange configuration was based on 1960 design. Since that time, design standards have been updated continually to allow facilities such as the interstate to operate more efficiently and safely. **Appendix 5** identifies the existing geometric deficiencies and Table 1-7 summarizes the geometric deficiencies at the I-39/90 and I-43/WIS 81 interchange.

The current ramp geometrics do not meet current WisDOT Facilities Development Manual (FDM) standards for an interstate. The four existing loop ramps have a design speed of 30-35 mph. The FDM states freeway to freeway directional ramps need to be within 10 mph of mainline highway design speed for 60 mph and greater. I-39/90 mainline has a design speed of 70 mph. I-43 has a design speed of 60 mph northbound and 50 mph southbound through the interchange.

The I-39/90 and I-43/WIS 81 interchange was originally designed with a maximum horizontal curve superelevation rate of eight percent. Superelevation is defined as the vertical distance between the heights of the inner and outer edges of highway pavement. Superelevation is created by rotating the pavement on the approach to and through a horizontal curve. It is intended to assist the driver through a curve in such a way that the driver will not need to reduce their travel speed. The superelevation is dependent on speed at which a vehicle travels and the radius of the horizontal curve. Current FDM design standards require no more than six percent superelevation. Each loop ramp currently exceeds this standard.

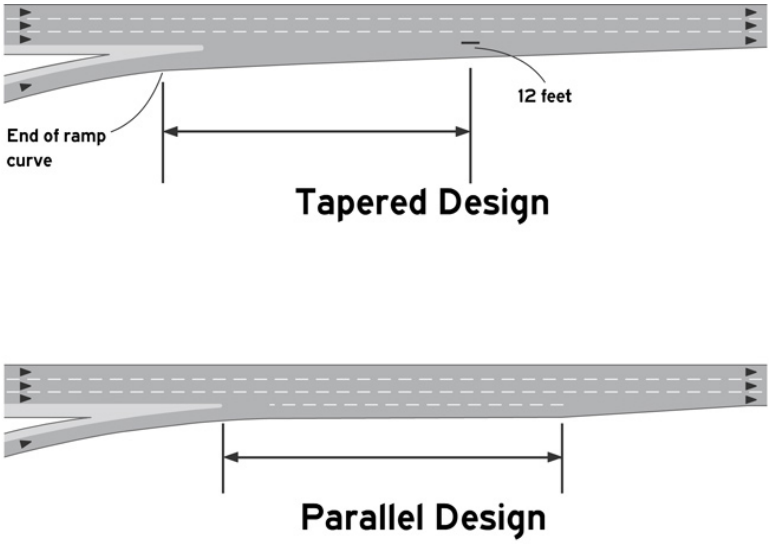
Table 1-7: I-39/90 & I-43/WIS 81 Interchange
Geometric Deficiencies

Deficiencies		From	To	Current WisDOT FDM Design Standard
1	Ramp is Speed Rated for 35 mph*	Eastbound WIS 81	Southbound I-39/90	-Within 10 mph mainline highway design speed -Ramp design speed ≥ to 60 mph
2	Ramp is Speed Rated for 30 mph*	Southbound I-39/90	Northbound I-43	-Within 10 mph mainline highway design speed -Ramp design speed ≥ to 50 mph
3	Ramp is Speed Rated for 30 mph*	Southbound I-43	Southbound I-39/90	-Within 10 mph mainline highway design speed -Ramp design speed ≥ to 60 mph
4	Ramp is Speed Rated for 35 mph*	Southbound I-43	Northbound I-39/90	-Within 10 mph mainline highway design speed -Ramp design speed ≥ to 60 mph
5	Ramp is Speed Rated for 45 mph*	Northbound I-39/90	Northbound I-43	-Within 10 mph mainline highway design speed -Ramp design speed ≥ to 50 mph
6	Ramp is Speed Rated for 30 mph*	Eastbound WIS 81	Northbound I-39/90	-Within 10 mph mainline highway design speed -Ramp design speed ≥ to 60 mph
7	Taper Entrance Ramp	Eastbound WIS 81	Southbound I-39/90	Parallel Entrance Ramp
8	Taper Entrance Ramp	Northbound I-39/90	Northbound I-43	Parallel Entrance Ramp
9	Taper Entrance Ramp	Southbound I-43	Northbound I-39/90	Parallel Entrance Ramp
10	Ramp Superelevations	All Ramps	All Ramps	Superelevation must be less than or equal to 6 percent

*Based on 6% superelevation table

Since the 1960s, entrance ramp design standards have changed considerably to provide safer merging movements. Parallel entrance ramps are now required by WisDOT for any reconstruction or new construction project. The current interchange does not provide parallel entrance ramps on I-39/90 or I-43. See Figure 1-5 for comparison of a parallel entrance ramp versus tapered entrance ramp.

Figure 1-5: Tapered Entrance Ramp vs Parallel Entrance Ramp



Source: **http://www.mireinfo.org/DataElements/188.cfm**

2. Summary of Alternatives

The scoping stage of this project was completed in three screenings. At the end of each screening, alternatives were presented to the public for comment. Table 2-1 schematically summarizes the project's alternative development process.

TABLE 2-1
ALTERNATIVE DEVELOPMENT PROCESS SCHEMATIC

INITIAL ALTERNATIVES	Screening 1[1]	PRELIMINARY ALTERNATIVES DEVELOPMENT	Screening 2[2]	DETAILED STUDY ALTERNATIVES DEVELOPMENT	Screening 3[3]	PREFERRED ALTERNATIVE
No Build Alternative →		No Build Alternative →		No-Build Alternative → ●		
Original EA Preferred Alternative → ●						
Build Alternatives						
Alternative 1 →						
		Option A → ●				
		Option B → ●				
Alternative 2 →						
		Option A →		Option A → ●		
				Option A Modified →		Preferred Alternative
		Option B → ●				
Alternative 3 →						
		Option B → ●				
CONTINUED TO NEXT STAGE →						
ELIMINATED FROM FUTURE CONSIDERATION → ●						

1 Initial Alternatives shown to the public on August 28, 2012 (Public Involvement meeting (PIM #1)
2 Preliminary Alternatives shown to the public on December 10, 2013 (PIM #2)
3 Preferred Alternative shown to the public on August 5, 2014 (PIM #3)

A. Preliminary Alternatives

Five alternatives were evaluated during the initial/preliminary alternative stage. These alternatives include the original EA preferred alternative, the No-Build Alternative, and three build alternatives. Both the original EA preferred alternative and the No-Build Alternative do not meet the project's purpose and need because they did not address the current interchange deficiencies. Therefore, they were both dropped from further consideration. However, the no build alternative was carried through until the preferred alternative selection to compare impacts between the preferred alternative and the alternative not to construct the interchange (no-build alternative).

All of the build alternatives meet the project's purpose and need. The design speed for each of the build alternatives is up to 70 miles per hour (mph). The free flow movements of I-43 southbound to I-39/90 southbound and I-39/90 northbound to I-43 northbound are designed for 70 mph. The other two free flow movements are designed for 60 mph. For each of the three build alternatives, two options were developed. Option A included relocating the I-39/90 mainline approximately 300 feet to the east (alternate alignment) in an effort to both minimize overall community impacts and construction costs to construct a two-level interchange. Option B maintained the location of I-39 through the interchange (base alignment) which resulted in developing interchange alternatives with three tier roadways.

A Location Study Report was completed that details the preliminary alternatives and reasoning for the selection of the preferred alternative. Figures and discussion of the alternatives dismissed and selection of the preferred alternative can be found in **Appendix 8**. The alternatives include Alternative 1A, Alternative 1B, Alternative 2B, Alternative 3B, and the Original EA Alternative. Table 1 in Appendix 8 summarizes and compares the impacts of each preliminary alternative. During the preliminary alternative phase, Alternative 3B was dropped from further discussion due to its high construction costs compared to the others. Alternatives 1A and 1B were dropped from further consideration due to public input and their less than desirable local access configurations.

Alternative 2B is the same as Alternative 2A except I-39/90 would remain on its current alignment. This would result in decreased construction complexity but would require a three tier interchange. Alternative 2B was dropped from further consideration because of its high costs compared to Alternative 2A at that time.

B. Detailed Study Alternatives

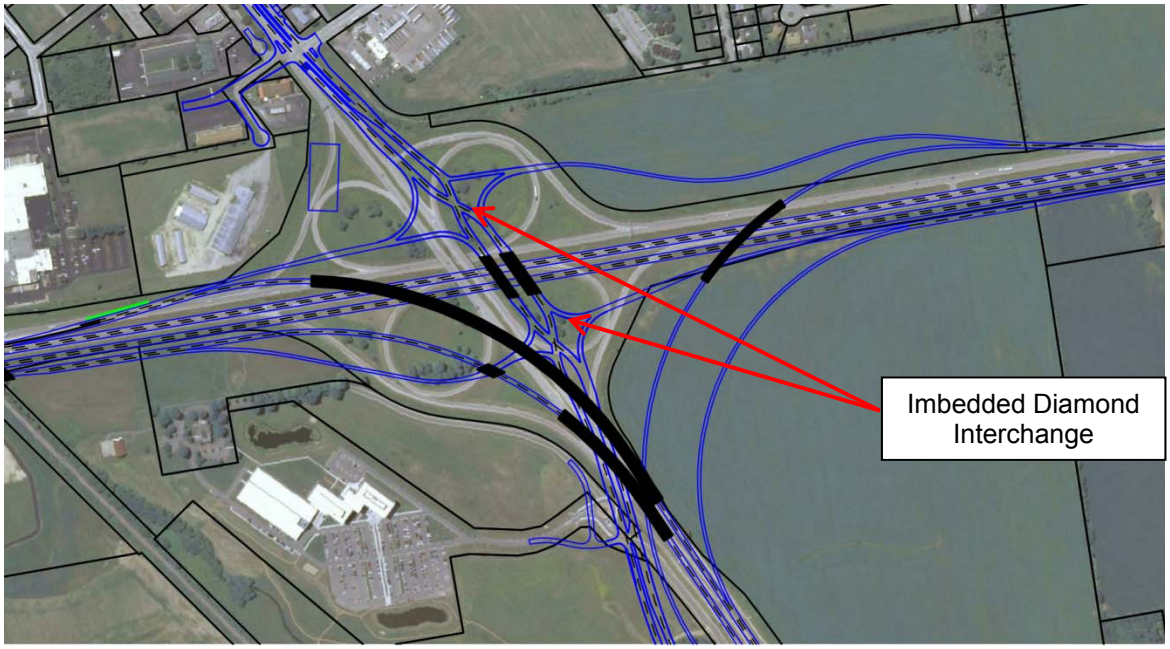
No Build Alternative –

The No-build Alternative was evaluated as a baseline comparison. The No-build Alternative would leave the existing deficient I-43 configuration the same with the exception that it would add an additional lane along I-39/90 in both directions. The addition of the northbound and southbound lanes along I-39/90 is part of the I-39/90 expansion project (2012 EA Re-evaluation) from the Illinois State Line to Madison.

The geometry of the existing I-39/90 & I-43/WIS 81 interchange (see **Appendix 5**) does not meet current highway design standards and the traffic operations along the ramps would be below LOS C in the design year 2040. At the interchange, the additional lanes would need to be accommodated in the existing median to avoid/minimize impacts to the existing interchange and ramps. This would result in a narrow median and substandard inside shoulder widths.

Alternative 2 –

Alternative 2 would involve a full reconstruction of the I-43/WIS 81 interchange. The following improvements would be made:

- High design speed ramps - up to 70 mph
- Access modifications:
  - Existing cloverleaf configuration will be re-designed as a free-flow system interchange with an imbedded diamond interchange (see below) providing access to WIS 81/Milwaukee Road.
  - 

  - Extend eastbound WIS 81/Milwaukee Road from its current location in Beloit to connect with County X and Hart Road.
    - Moves local Beloit access from I-43 to the County X/Hart Road interchange.
  - Four new intersections along WIS 81/Milwaukee Road extension.
    - Two will be the on and off ramps for I-39/90.
    - Two will be for the Kerry Corporation driveway and Gateway Boulevard.

I. Option A – Relocate I-39/90 Eastward

See **Appendix 6 (Sheet 1 of 2)** for a map of Alternative 2, Option A. This alternative option has a high level staging complexity for construction since mainline construction of I-39/90 will occur off alignment and require complex staging of temporary ramps.

Alternative 2, Option A includes the following:

- Relocating the I-39/90 mainline approximately 300 feet to the east in the interchange area and adding closely spaced reverse curves to the mainline alignment.
- Two tier interchange.
- All movements along I-39/90, I-43, and WIS 81/Milwaukee Road would be changed and upgraded to meet current design standards.
- Maintains existing local road and interstate access.

This alternative option provides improved access to Gateway Business Park, while maintaining the local access into the city of Beloit and providing high-speed free flow ramps for the interstate-to-interstate connections. By improving the access to the Gateway Boulevard area, it enhances the ability for the city of Beloit to expand and provide for the planned future growth of the community east of the I-39/90 & I-43/WIS 81 interchange.

II. Option A Modified - I-39/90 Minor Shift Eastward

See **Appendix 6 (Sheet 2 of 2)** for a map of Alternative 2, Option A Modified. This alternative option has a medium level staging complexity since mainline construction of I-39/90 at the interchange can follow a similar staging strategy of the corridor.

Option A Modified is the same as Option A except for the following significant items described below:

- The alignment of I-39/90 will be shifted so that the SB lanes will be located on the existing location of the NB lanes. This will allow for less complex construction staging.
- The alignment of the extended WIS 81/Milwaukee Road will be shifted north of the existing crossing of I-39/90. This will allow for less complex construction staging and contribute to the need of less overall right-of-way.
- The median of I-39/90 will be widened to 34 feet to account for the potential of wider hammerhead pier columns.
- The I-39/90 alignment will return to the existing location via two normal crown curves just south of Hart Road.

This alternative option provides improved access to the Gateway Business Park area and maintains all other access at the system/service interchange. It also allows I-39/90 to remain closer to the existing alignment, reducing right-of-way impacts and making construction staging easier than Option A.

C. Preferred Alternative Selection – Alternative 2 Option A Modified

Alternative 2A Modified was selected as the preferred alternative because it received strong public support and provided desirable local mobility while minimizing costs and environmental impacts compared to the other detailed study alternatives at that time.

Both Option A and Option A Modified meet the purpose and need and were included in the Interstate Access Justification Report (IAJR) that was sent to FHWA Washington. There are several differences between the two build alternatives. In an effort to improve design features from Option A and reduce right of way impacts, Option A modified was created. Option A is $5 million more than Option A Modified. Option A Modified has 18 less acres of total right of way impact and 5 less acres of farmland right of way impact versus Option A. Also, Option A Modified allows for better construction staging than Option A, which will result in fewer impacts to the community during construction. The only advantage Option A has over Option A Modified is it results in no wetland impacts. The wetland impacts for Option A Modified result in 0.6 acres of wetland impacts.

The public and local officials prefer Alternative 2. Since Alternative 2, Option A Modified has less right of way impacts and better construction staging versus Alternative 2 Option A, the preferred detailed alternative is Alternative 2, Option A Modified (see **Appendix 7 Preferred Alternative)**.

Since the selection of the preferred alternative, further design refinement has been completed which changed some of the environmental and socioeconomic impacts. The right of way impacts have increased from 70 acres to 82 acres. The total cost has increased from $101 million to $112 million. The total area required from farm operations has

increased from 48.6 acres to 56 acres. The preferred alternative provides for better construction staging and the least total right of way impacts versus Alternative 2 Option A.

3. Description of Proposed Action

The proposed project consists of reconstructing the I-39/90 and I-43/WIS 81 interchange. The project length totals 4.6 miles in the project area. The north-south leg of I-39/90 has a length of approximately 2.7 miles. The east-west leg of WIS 81/Milwaukee Road and I-43 has a length of approximately 1.9 miles. The project study limits for this project extend along I-39/90 from the WisDOT Welcome Center south of I-43 to E. Hart Road and along I-43/WIS 81 from Freeman Parkway in the city of Beloit to the County X/Hart Road Interchange (see **Appendix 2**).

The new I-39/90 and I-43/WIS 81 interchange will include 70 mph (design speed) free flow movements from southbound I-43 to southbound I-39/90 and from northbound I-39/90 to northbound I-43. It will also include 60 mph (design speed) free flow movements from southbound I-39/90 to northbound I-43 and from southbound I-43 to northbound I-39/90. These movements will play an important role in improving the system linkage between the two WisDOT backbone routes.

The preferred alternative will enhance the community's local mobility by extending WIS 81/Milwaukee Road from Beloit to the I-43/County X/Hart Road interchange. This extension will provide improved vehicle access from the city of Beloit to the Gateway Business Park and will accommodate both bicycle and pedestrian traffic.

The new interchange will be constructed with current design standards thus improving the overall safety from the existing geometric deficiencies. The interchange will remain open to traffic throughout the duration of construction; with the exception of temporary lane closures during transition between the various construction stages. Local access will be provided during construction as there will be no designated detour route for this project. However, for the I-39 reconstruction project from the Illinois State Line to Madison, there is a designated alternate route for motorists to choose to utilize during construction. See **Appendix 9** for the Alternate Route Map.

4. Construction and Operational Energy Requirements

Energy consumption related to highway projects pertains to construction and operation. Construction energy is that required in raw materials and equipment to build or maintain the highway. Operational energy is the direct consumption of fuel by vehicles using the roadway. Fuel usage is affected by types of vehicles, roadway grades, and the geometric characteristics, speed, congestion and queuing caused by high traffic volume and intersection stop conditions.

Although construction energy is greater for the preferred alternative when compared to the no-build alternative, exertion of this energy now is necessary to reduce the need for more intense repairs in the future. If the structural, pavement and intersection repairs are not completed, these elements will continue to deteriorate and larger scale improvements that require more construction energy will be necessary in the future.

5. Land Use

Beginning at the south end of the project by the WisDOT Welcome Center on I-39/90 in the city of Beloit, land use immediately adjacent to the I-39/90 and I-43/WIS 81 interchange is a mix of agricultural, institutional and community services, business park, industrial, residential, and commericial. See **Appendix 10** for an existing and future land use maps for the city of Beloit and the town of Turtle.

6. Planning and Zoning

The improvement of I-39/90 and I-43/WIS 81 interchange is a necesssary part of the I-39/90 mainline improvement project. The I-39/90 project is listed in the Rock County Comprehenisve Plan 2035 and mentioned under the discussion of the State Highway Plan 2020. It lists the improvement of I-39/90 and the reconstruction of all interchanges within that project. The city of Beloit Comprehensive Plan notes the reconfiguration of the I-39/90 and I-43/WIS 81 interchange. The two plans are listed:

- City of Beloit Comprehensive Plan, March 17, 2008 (http://www.beloitwi.gov/)
- Rock County Comprehensive Plan, September 10, 2009 (https://www.co.rock.wi.us/planning-comprehensive-plan-2035)

Zoning maps for the city of Beloit and town of Turtle are attached in **Appendix 11**.

7. Environmental Justice

The proposed action will have both beneficial and adverse effects to all populations. Beneficial effects include improved safety for motorists, enhanced local mobility, pedestrian and bike accommodations, and added aesthetics features. Adverse effects will be in the form of inconveniences during construction and the proposed acquisition of highway right of way from the adjacent property owners. No disproportionate adverse impacts to minority or low-income populations are expected to result from the proposed action. Beneficial and adverse effects will be similar for all populations as the project area consists of several different land types. There were several methods used including windshield survey, US Census data, public information meetings, and local official meetings. See Factor Sheet B-1 Community/Residential (Page 40) for more detailed information.

How was information obtained about the presence of populations covered by EO 12898? *(check all that apply)*	
☒ Windshield Survey	☐ Official Plan
☒ US Census Data	☐ Survey Questionnaire
☐ Real Estate Company	☐ WisDOT Real Estate
☒ Public Information Meeting	☒ Local Government
☐ Human Resources Agency Identify agency: Identify plan, approval authority and date of approval:	
☐ Other – Identify:	

a. ☒ No – Populations covered by EO 12898 are not present in project area.
b. ☐ Yes – Populations covered by EO 12898 are present in project area. Factor Sheet B-4 must be completed.

8. Title VI of the 1964 Civil Rights Act, the Americans with Disabilities Act or the Age Discrimination Act

Indicate whether or not individuals covered by Title VI have been identified. Title VI prohibits discrimination on the basis of race, color, or country of origin.

a. ☒ No – Individuals covered by the above laws were not identified.
b. ☐ Yes – Individuals covered by the above laws were identified.
   ☐ Civil Rights issues were not identified.
   ☐ Civil Rights issues were identified. Explain:

9. Public Involvement

A. Public Meetings

Date (m/d/yyyy)	**Meeting Sponsor** (WisDOT, RPC, MPO, etc.)	**Type of Meeting** (PIM, Public Hearings, etc.)	**Location**	**Approx. Number of Attendees**
8/28/2012	WisDOT	Local Officials Meeting #1	Turtle Town Halll	29
8/28/2012	WisDOT	Public Involvement Meeting #1	Turtle Town Hall	88
12/10/2013	WisDOT	Local Officials Meeting #2	Rotary River Center, Beloit WI	31
12/10/2013	WisDOT	Public Involvement Meeting #2	Rotary River Center, Beloit WI	61
8/5/2014	WisDOT	Local Official Meeting #3	Beloit Public Library	23
8/5/2014	WisDOT	Public Involvement #3	Beloit Public Library	75
10/21/14	WisDOT	Local Requested Meeting by Beloit City Council	Rotary River Center, Beloit WI	11

*For complete documentation please refer to the WisDOT project file for complete documentation for all involvement.

Agency coordination contacts (U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Wisconsin Department of Natural Resources) and American Indian Tribes were invited to participate in the local officials meetings. Representatives from the following entities were also invited to participate and generally attended the meetings:

- Town of Turtle
- Town of LaPrarie
- Town of Rock
- City of Beloit
- City of Janesville
- Rock County
- Assembly Districts 11, 15, 31, 43, 44
- Beloit City Council
- Beloit Plan Commission
- Town of Beloit Police Department
- Beloit Landmarks Committee
- Janesville MPO
- School District of Beloit Turner
- CPG Midwest

- US Infrastructure Corp
- Van Galder Bus Company
- Beloit Transit System
- IDOT District 2
- FHWA
- School District of Beloit
- Wisconsin & Southern Railroad Company
- Janesville Transit
- Stateline Area Transportation Study
- Durham School Services
- Union Pacific Railroad
- Beloit Chamber of Commerce
- Greater Beloit Economic Development Corp.

B. Other methods:

A project website was created to provide project related information to the public. All exhibits and presentations used at the public involvement meetings are available on the website www.i39-90.wi.gov. Other methods used to reach out to the public included project newsletters and articles in the local newspaper.

C. Identify groups that participated in the public involvement process. Include any organizations and special interest groups:

The I-90 Business Connection group held a meeting to discuss the future interchange reconstruction on February 18, 2014. This group includes many local businesses within the city of Beloit. There were two resolutions that were passed during this meeting. The first resolution was the preference of constructing traffic signals along the extension of WIS 81/Milwaukee Road instead of roundabouts. The second resolution that was passed was the preference of extending WIS 81 from Beloit to the County X/Hart Road Interchange. The existing WIS 81 is associated with entering the city of Beloit from I-43 and they want to keep the same nomenclature for this segment of roadway. See **Appendix 12.**

D. Indicate plans for additional public involvement, if applicable:

A public hearing is planned to be held in the spring of 2015. Additional public information and local officials meetings will be held during the design phase of the project.

10. Briefly summarize the results of public involvement.

A. Describe the issues, if any, identified by individuals or groups during the public involvement process:

The following is a list of issues brought up by attendees at the Public Involvement Meetings:

- *Access*:
  1. Business owners and residents have expressed a desire to improve access to businesses along the WIS 81/Milwaukee Road corridor and to the Gateway Business Park. Alternatives 2A, 2B, and 3B generally were favored as providing desirable access over alternatives 1A and 1B (which do not provide a local connector road to serve the east side of I-39).
  2. Some expressed concerns that the expanded interchange will increase travel time to businesses.
  3. Others are concerned the interchange will be confusing to the public which may slow economic growth in the area. Adequate signage was mentioned as being very important.
  4. One commented there would be too many roundabouts to navigate when entering Beloit from the east (Alternative 3B) if that is the chosen intersection treatment.
- *Bicycle and Pedestrian Facilities*:
  1. Many residents expressed the importance of providing bicycle and pedestrian accommodations where possible for leisure use and for commuting purposes (specifically from the east side of the interstate to the west). Alternatives 2A, 2B and 3B are favored by these residents due to the inclusion of an off road path along the local connector road. Connections to the existing paths and locations of entry/exit points were also deemed very important.
- *Noise*:
  1. Several residents were concerned of increased noise due to the expanded interchange and requested noise walls or berms for noise abatement.
- *Cost*:
  1. Cost is a concern for the public, some of which dismissed alternative 3B as too expensive. Others are concerned about the increased roadway length and long term maintenance costs of all the alternatives.
- *Environmental:*
  1. One resident inquired about impacts to the floodplain within the project.

- *Park and Ride*:
    1. One resident inquired about locating a park and ride at the interchange.
- *Alternate Route Consideration*:
    1. Several residents inquired if alternate routes have been taken into consideration during the design of the interchange.
    2. The conversion of Gateway Boulevard into a state highway, and improvements to Hart Road and/or Lathers Road was also suggested.
- *Other Concerns:*
    1. Improve the entrance ramp at the WisDOT Welcome Center to provide more space to merge onto the interstate.
    2. Add auxiliary lanes northbound between the WisDOT Welcome Center and the interchange and in both directions between the County X/Hart Road interchange and the I-43 interchange.
    3. Hart Road interchange cannot handle the increased traffic load and difficult for trucks to maneuver the roundabouts.

B. Briefly describe how the issues identified above were addressed:

The above issues were taken into consideration throughout the design process and also in the selection of the preferred alternative.

- *Access*:
    1. The access issue of extending WIS 81 eastward was one of the main topics and was one of the reasons why the city of Beloit passed a resolution in favor of Alternative 2. The proposed action includes the extension of WIS 81/Milwaukee Road.
    2. The proposed action will cause an increase in time for some users but will also decrease the time for other users. The increase and decrease in time will be approximately 3-4 minutes.
    3. The proposed action includes a detailed sign plan that will provide the proper signage necessary to clearly mark the new interchange.
    4. The traffic control is ongoing.
- *Bicycle and Pedestrian Facilities*:
    1. The preferred alternative will provide bicycle and pedestrian facilities along the extension of WIS 81/Milwaukee Road that will provide access under the interstate.
- *Noise*:
    1. A noise analysis was completed that analyzed the impacts of the new interchange in the design year 2040. It is anticipated that there will be not be any noise impact.
- *Cost*:
    1. Cost was an important issue throughout the design process. **Appendix 8** discusses in detail the cost of the alternatives. Rock County will be responsible and still continue to manage maintenance for this interchange.
- *Environmental:*
    1. The existing floodplain will be impacted by the proposed improvements due to the placement of fill in its storage area. The designers will mitigate the impacts by providing compensatory storage within the floodplain reach to balance the floodplain storage lost due to fill. It is not anticipated that the adjacent property owners will be impacted.
- *Park and Ride*:
    1. A park and ride lot is anticipated to be located in the southwest quadrant of the interchange and is currently being discussed with the city of Beloit.
- *Alternate Route Consideration*:
    1. There is no alternate route designation for this project because the interchange will remain open with temporary lane closures. However, the I-39/90 mainline reconstruction from Illinois State Line to Madison has a designated alternate route for the motorists to use during construction. See **Appendix 9** for the Alternate Route Map.
    2. Gateway Boulevard is a local road and will remain one. Improvements to Hart and Lathers Road are beyond the scope of this project and will not be included in the final plan because it is not needed for the operation of the interchange. Hart Road from County S to I-43/County X interchange will be improved as an alternate route for I-39/90.
- *Other Concerns:*
    1. The WisDOT Welcome Center ramps will be improved.
    2. Auxiliary lanes will be added northbound between the WisDOT Welcome Center and the interchange and southbound between the County X/Hart Road interchange and the I-43 interchange.
    3. I-43 & Hart Road/County X interchange has been analyzed to determine if any modifications will be needed to handle the increased traffic volumes and any improvements to truck turning movements. Hart Road improvements will occur based on the analysis and will be incorporated into the project.

11. Local/regional/tribal/federal government coordination

A. Identify units of government contacted and provide the date coordination was initiated.

Unit of Government (MPO, RPC, City, County, Village, Town, etc.)	**Coordination** Correspondence Attached	**Coordination Initiation Date** (m/d/yyyy)	**Coordination Completion Date** (m/d/yyyy)	**Comments**
Rock County	☒ Yes ☐ No	8/28/2012	Ongoing	
City of Beloit	☒ Yes ☐ No	8/28/2012	Ongoing	City of Beloit passed a resolution in favor of Alternative 2 (preferred alternative). See **Appendix 12**
City of Janesville	☐ Yes ☒ No	8/28/2012	Ongoing	
Town of Beloit	☒ Yes ☐ No	8/28/2012	Ongoing	
Town of LaPrairie	☒ Yes ☐ No	8/28/2012	Ongoing	
Town of Rock	☐ Yes ☒ No	8/28/2012	Ongoing	
Town of Turtle	☐ Yes ☒ No	8/28/2012	Ongoing	
Janesville MPO	☐ Yes ☒ No	8/28/2012	Ongoing	

B. Describe the issues, if any, identified by units of government during the public involvement process:

The local units of government identified the same issues that are found in the previous question as well as several other issues.

1. The amount of right of way that was required to construct the new interchange.
2. The number of access points for emergency situations.
3. Desire to have additional local access connection to the Gateway Business Park.
4. Provide plenty of signing for Beloit businesses along I-43 to inform drivers to exit at the Hart Road interchange.

C. Briefly describe how the issues identified above were addressed:

The four additional concerns by the units of government were incorporated into the Preferred Alternative.

1. The Preferred Alternative minimizes the amount of right of way by 6 acres compared to the Alternative 2A option.
2. The Preferred Alternative provides convenient access into the Gateway Business Park in case of an emergency situation with the extension of WIS 81/Milwaukee Road.
3. The Preferred Alternative provides access to and from the interchange with the extension of WIS 81/Milwaukee Road. On January 21, 2014, the city of Beloit passed a resolution endorsing Alternative 2. One of the main reasons they selected Alternative 2 because the extension of WIS 81/Milwaukee Road provides local access to the adjacent properties.
4. The signing plan on I-43 will follow current WisDOT and FHWA signing requirements. Specific service signs can be used on the interstate to inform drivers of businesses at a particular exit.

D. Indicate any unresolved issues or ongoing discussions:

1. The concept of constructing a park and ride lot in the interchange area is still being discussed. Current discussions include the possibility of constructing one in the southwest quadrant.
2. Determination of the intersection traffic control is still ongoing.

12. Public Hearing Requirement

☒ This document is an Environmental Assessment.
- ☐ A Notice of Opportunity to Request a Public Hearing will be published.
- ☒ A Public Hearing will be held.

☐ This document is a Type 2c Categorical Exclusion / Environmental Report.
- ☐ A Public Hearing is NOT Required.

Note: If any of the following five boxes are checked, a Notice of Opportunity to Request a Public Hearing must be published or a Public Hearing must be held.

- ☐ A substantial amount of right-of-way **will** be acquired.
- ☐ The proposed action **will** substantially change the layout or functions of connecting roadways or of the facility being improved.
- ☐ The proposed action **will** have a substantial adverse impact on abutting property.
- ☐ The proposed action **will** have other significant social, economic, environmental effects.

☐ The department has made a determination that a public hearing is in the public interest.

☐ A Notice of Opportunity to Request a Public Hearing will be published.
☐ A Public Hearing will be held.

Note: For federally-funded projects, FHWA signature of this environmental document indicates concurrence with the department's Public Hearing requirement determination.

ENVIRONMENTAL EVALUATION OF FACILITIES DEVELOPMENT ACTIONS *(continued)*

DT2094

BASIC SHEET 3 – AGENCY AND TRIBAL COORDINATION

Agency	Coordination Required?	Correspondence Attached?	Comments
WisDOT			
Regional Real Estate Section	☒ Yes ☐ No	☒ Yes ☐ No	WisDOT has acquired thru early acquisition of property 3490 Millington Road, Beloit WI. See **Appendix 17**
Bureau of Aeronautics	☒ Yes ☐ No	☒ Yes ☐ No	March 15, 2014 – Initial letter was sent to BOA with the information regarding the project. April 22, 2014 – A response was received from the BOA. The response included filing with the FAA at least 45 days prior to start of construction and contacting the Beloit Airport about this project. April 30, 2014 – Coordination was completed with the Beloit Airport. Beloit Airport indicated that cranes left in the air should be equipped with anti-collision lights at night and during the day the FAA should be notified of any crane locations. See **Appendix 18**
Railroads and Harbors Section	☒ Yes ☐ No	☐ Yes ☒ No	An initial letter was sent to the WisDOT Railroads and Harbors section for the entire I-39/90 corridor which included the overpass over the Canadian Pacific Railroad. They are okay with the proposed bridge over the Canadian Pacific Railroad. Coordination is still ongoing.
STATE AGENCY			

BASIC SHEET 3 – AGENCY AND TRIBAL COORDINATION

Agency	Coordination Required?	Correspondence Attached?	Comments
Natural Resources (DNR)	☒ Yes ☐ No	☒ Yes ☐ No	December 4, 2013 – Initial letter was sent to DNR with information regarding the project January 7, 2014 – A letter was received from DNR that identified several concerns: • Spring Brook is a warm water fishery and any in-stream work or work has the potential to adversely affect the water quality of the stream should be completed between June 15 and September 15. • The Ozark Minnow has been identified within the project area. DNR will coordinate with Bureau of Natural Heritage Conservation. • Stormwater (TMDL) is located within the project area and special requirements of the management practices applied will be determined during the design process and submitted to the DNR for review. • Upland habitat is located within the project area and design should consider impacts to the prairie restoration. • The Spring Brook floodplain is located in the southeast quadrant of the interchange. A hydraulic and hydrologic analysis must be conducted for the 100-year flood event for any new structure or existing structure that is not being replaced within a mapped floodplain. Consult with Rock County Zoning Administrator for project-specific information. • Avoid the spread of oak wilt disease and the emerald ash borer. March 25, 2014 – Agency Coordination meeting. See **Appendix 20** May 19, 2014 – A letter was received from DNR regarding the project's purpose and need and alternatives development. They identified some concerns in addition to previous review: • If wetland R-30 is impacted an equivalent post-construction storm water treatment system must be put in place. See Wetland Map (Page 52) • R-31 impacts and any mitigation should be discussed in draft EA document. See Wetland Map (Page 52) • Spring Brook is classified as an Area of Special Natural Resources interest due to presence of threatened fish. Implementation of best management practices should be considered. • A State Threatened Fish was found in the project area and DNR needs to determine if anything further needs to be done. June 18, 2014 – An email was received from DNR concurring with the wetland boundaries in the wetland delineation report. August 26, 2014 – A meeting was held with DNR and WisDOT to discuss the flood storage districts. See **Appendix 13** December 12, 2014 – An email was sent to DNR asking if a fish survey was needed for the project. See **Appendix 13**
State Historic Preservation Office (SHPO)	☒ Yes ☐ No	☒ Yes ☐ No	No archaeological sites were found. One structure named the Gonstead Chiropractic Clinic was determined to be potentially eligible for the National Register of Historic Places. March 25, 2014 – Agency coordination meeting. See **Appendix 20** June 24, 2014 - SHPO approved the Section 106 determination and agreed with a project determination of no adverse effect (DNAE) on the clinic. See **Appendix 14**

BASIC SHEET 3 – AGENCY AND TRIBAL COORDINATION

Agency	Coordination Required?	Correspondence Attached?	Comments
Agriculture (DATCP)	☒ Yes ☐ No	☒ Yes ☐ No	An AIS Addendum was published on December 27, 2013 titled *IH 39/90: Illinois State Line to USH 12&18 Dane & Rock Counties* that includes the agricultural properties impacted for this project. No additional information is required for this project. See **Appendix 15** March 25, 2014 – Agency coordination meeting. See **Appendix 20**
Other	☐ Yes ☐ No	☐ Yes ☐ No	
FEDERAL AGENCY			
U.S. Army Corps of Engineers (USACE)	☒ Yes ☐ No	☐ Yes ☒ No	December 4, 2013 – Initial letter was sent to USACE with information regarding the project. USACE provided no response. January 28, 2014 - Submitted the project's wetland delineation report and requested jurisdictional determination of the wetlands. March 25, 2014 – Agency coordination meeting. See **Appendix 20**
U.S. Fish and Wildlife Service (USFWS)	☒ Yes ☐ No	☐ Yes ☒ No	December 4, 2013 – Initial letter was sent to USFWS with information regarding the project. USFWS provided no response.
Natural Resources Conservation Service (NRCS)	☒ Yes ☐ No	☒ Yes ☐ No	Farmland Conversion Impact Rating Form AD-1006 was completed for impacts to farmland. The highest score was 37. July 31, 2014 – Initial letter was sent to NRCS with information regarding the project. August 4, 2014 – A letter was received from NRCS indicating that since the site assessment scores is below 60, the project is not subject to the Farmland Protection Policy Act (FPPA). See **Appendix 19**
U.S. National Park Service (NPS)	☐ Yes ☒ No	☐ Yes ☐ No	Coordination not required; no lands administered by the NPS are in the project area.
U.S. Coast Guard (USCG)	☐ Yes ☒ No	☐ Yes ☐ No	Coordination not required; no commercially navigable waterways are in the project area.
U.S. Environmental Protection Agency (EPA)	☒ Yes ☐ No	☐ Yes ☒ No	December 4, 2013 – Initial letter was emailed to EPA with information regarding the project. EPA provided no response. March 25, 2014 – Agency coordination meeting. See **Appendix 20**
Advisory Council on Historic Preservation (ACHP)	☐ Yes ☒ No	☐ Yes ☐ No	N/A
Other (identify)	☒ Yes ☐ No	☒ Yes ☐ No	
SOVEREIGN NATIONS			

BASIC SHEET 3 – AGENCY AND TRIBAL COORDINATION

Agency	Coordination Required?	Correspondence Attached?	Comments
American Indian Tribes	☒ Yes ☐ No	☒ Yes ☐ No	December 4, 2013 – Initial letter was sent to the American Indian Tribes with information regarding the project. December 13, 2013 – A letter was received from the Bad River Band of Lake Superior Tribe of Chippewa Indians requesting a processing fee in order to respond to the initial letter. As per FDM 26-20-1, WisDOT's policy is to not compensate any entity, including Tribes, for consultation required by law, regulation, or other authorities, where the consultation is part of administrative processes designed to protect the interests of the consulting entity. Therefore, the above request was not granted. January 30, 2014 – The Forest County Potawatomi requested to see the results of the cultural resource investigations. Further, if cultural properties are found, they would request a consultation process pursuant to Section 106 of the National Historic Preservation Act. See **Appendix 16**

BASIC SHEET 4 – ENVIRONMENTAL FACTORS MATRIX *(check all that apply)*

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Effects
A. ECONOMIC FACTORS					
A-1 General Economics	☒	☒	☐	☒	Retail businesses, light industry, and agricultural are the current land uses surrounding the project area. Movements throughout the interchange will remain open through the construction process. Access will be maintained to all businesses during the duration of the project. All adverse effects are temporary. The proposed eastward extension of WIS 81/Milwaukee Road will relocate Beloit's access to I-43 from its current location to the County X/Hart Road interchange. See A-1 General Economics factor sheet (Page 34).
A-2 Business	☒	☒	☐	☒	Kerry Ingredients & Flavours driveway access will be shifted several hundred feet to the east. Businesses west of the interchange are concerned about the loss of business due the access change from I-43 being moved to the County X/Hart Road interchange. See A-2 Business factor sheet (Page 35).
A-3 Agriculture	☒	☐	☐	☒	The proposed improvement will require the acquisition of 56 acres of farmland. Three properties will be impacted by more than 5 acres of right-of-way. December 27, 2013 - DATCP determined that an AIS is not required for this project because the properties affected are included in the AIS Addendum for the I-39/90 mainline project (WisDOT ID: 1001-10-02). See A-3 Agriculture Evaluation factor sheet (Page 37).
B. SOCIAL/CULTURAL FACTORS					
B-1 Community or Residential	☒	☒	☐	☒	The proposed action will result in beneficial community/residential effects. WIS 81/Milwaukee Road will provide additional access between the city of Beloit and the Gateway Business Park. It will also provide pedestrian and bicycle accommodations. One residential property has been acquired through the early acquisition process. The property is located along the extension of WIS 81/Milwaukee Road. There are no relocations. All adverse effects are temporary. See B-1 Community or Residential factor sheet (Page 40).
B-2 Indirect Effects	☐	☐	☒	☐	There are no indirect effects on environmental resources for this project. See **Appendix A** for WisDOT's Pre-screening Worksheet
B-3 Cumulative Effects	☐	☐	☒	☐	No cumulative effects were identified.
B-4 Environmental Justice	☐	☐	☒	☐	No minority, low-income, or elderly population in the project's area of influence will be disproportionately affected.
B-5 Historic Resources	☐	☐	☒	☒	A historic architecture survey was completed on October 8, 2013 and there was one historic property found within the project limits. June 24, 2014 – Section 106 and determination of no adverse effect (DNAE) approval was received from SHPO and concurred with a determination of no adverse effect onto the historical property **(Appendix 14)**. See B-5 Historic Resources Evaluation factor sheet (Page 43).
B-6 Archaeological/Burial Sites	☐	☐	☒	☐	An archaeological survey was completed between October 7, 2013 and October 17, 2013 and there were no archaeological sites found within the project area limits. June 24, 2014 - SHPO concurs with findings of no archaeological sites **(Appendix 14)**.
B-7 Tribal Coordination /Consultation	☐	☐	☒	☐	The Forest County Potawatomi responded and requested copies of archaeological and historical surveys that were completed for the project.

BASIC SHEET 4 – ENVIRONMENTAL FACTORS MATRIX *(check all that apply)*

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Effects
B-8 Section 4(f) and 6(f) or Other Unique Areas	☐	☐	☒	☐	There is one historic property the Gonstead Chiropractic Clinic that will require no property acquisition.
B-9 Aesthetics	☐	☒	☐	☒	The proposed action has the potential to incorporate Community Sensitive Design features into the bridge structures or along the extension of WIS 81/Milwaukee Road. The proposed action will include aesthetic features that include staining and relief features to bridges and grass and other landscaping elements. See B-9 Aesthetics factor sheet (Page 45).
C. NATURAL RESOURCE FACTORS					
C-1 Wetlands	☒	☐	☐	☒	The proposed action will impact approximately 0.6 acres of wetland. The wetland impacts are the result in the realignment of WIS 81/Milwaukee Road to provide better construction staging and remove an extra curve along I-39/90. This wetland impact is located in the northwest quadrant of the interchange. See C-1 Wetland factor sheet (Page 47).
C-2 Rivers, Streams and Floodplains	☒	☐	☐	☒	This project will replace the existing bridge on I-39/90 over Spring Brook. Spring Brook crosses the project in two locations. The land surrounding the creek includes prairie, forested upland habitat, and old field habitat. Tributary to Spring Brook crosses under I-39/90 through culverts just north of Cranston Road. The land surrounding the tributary includes old field, agricultural land, and commercial development. Floodplain encroachment will occur along Millington Road adjacent to the proposed WIS 81/Milwaukee Road to County X connection and by the Spring Brook overpass on I-39/90. Compensatory storage will be created to maintain the flood storage volume in the interchange area. See C-2 Rivers, Streams, and Floodplains factor sheet (Page 53).
C-3 Lakes or Other Open Water	☐	☐	☒	☐	No lakes or other open waters are present in the project area.
C-4 Groundwater, Wells, and Springs	☐	☐	☒	☐	This project will not impact groundwater, wells, or springs.
C-5 Upland Wildlife and Habitat	☐	☐	☒	☐	Right of way acquisition will be required along the southeast quadrant of the interchange. In front of Kerry Ingredients lies upland prairie grass. WisDOT will minimize impacts to this area by restoring the prairie along the side slopes of the highway. It should be noted that there are no regulations governing prairie mitigation in Wisconsin.
C-6 Coastal Zones	☐	☐	☒	☐	This project is not associated with a coastal zone.
C-7 Threatened and Endangered Species	☐	☐	☒	☐	Discussions of threatened or endangered species are ongoing with DNR. See commitment sheet page 32.
D. PHYSICAL FACTORS					
D-1 Air Quality	☐	☐	☒	☐	No substantial impacts to air quality are expected. This project is exempt from permit requirements formerly contained in NR411 under the Wisconsin Administrative Code.
D-2 Construction Stage Sound Quality	☒	☐	☐	☒	WisDOT Standard Specifications 107.8(6) and 108.7.1 will apply. See Construction Stage Sound Quality Evaluation factor sheet (Page 59).
D-3 Traffic Noise	☐	☐	☒	☒	A noise analysis was completed for this project. No noise impacts are anticipated. See D-3 Traffic Noise Evaluation factor sheet (Page 61).
D-4 Hazardous Substances or Contamination	☐	☐	☒	☐	There were 3 sites identified within the project area. These 3 sites were avoided by design and will not be impacted. Structures B-53-46/47/48 & 51 were inspected for asbestos containing material (ACM). No ACM was found.

BASIC SHEET 4 – ENVIRONMENTAL FACTORS MATRIX *(check all that apply)*

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Effects
D-5 Stormwater	☒	☒	☐	☒	Impacts will be minimized through strict adherence to WisDOT standards. Rock River total maximum daily load (TMDL) requirements will be addressed by determining the pollutant load reductions calculated for each of the project segments in the I-43 interchange area and applying those reductions to the overall Rock River basin load reduction requirements. The load reductions will be determined for both MS4 areas, where the TMDL reductions apply, and non-MS4 areas where Trans 401 reduction requirements apply. See D-5 Stormwater factor sheet (Page 64).
D-6 Erosion Control and Sediment Control	☐	☐	☒	☒	Standard erosion and sediment control measures will be implemented in accordance with the WisDOT/WDNR cooperative agreement. All erosion and sediment control measures will be installed according to Standard Specifications for Highway and Structure Construction. The erosion control plan review process will include soliciting and incorporating WDNR erosion control comments both on the plan for the 401 Water Quality Certification process during design and by reviewing the contractor's erosion control implementation plan prior to the start of construction. There are no adverse or benefits, but more detailed information about the erosion control and sediment control can be found on the D-6 Erosion Control and Sediment Control factor sheet (Page 66).
E. OTHER FACTORS					
E-1	☐	☐	☐	☐	
E-2	☐	☐	☐	☐	

BASIC SHEET 5 – ALTERNATIVES COMPARISON MATRIX

All estimates including costs are based on conditions described in this document at the time of preparation in the year of expenditure (YOE). Additional agency or public involvement may change these estimates in the future.

Environmental Issues/Impacts	Unit of Measure	Alternatives				
		No Build	Preferred Alternative			
Project Length	Miles	14	35			
Construction	Million $	19	104			
Real Estate	Million $	1	6			
TOTAL	Million $	20	110			
Wetland Area Converted to ROW	Acres	0	0.6			
Upland Habitat Area Converted to ROW	Acres	0	15.4			
Other Area Converted to ROW	Acres	3	66			
Total Area Converted to ROW	Acres	3	82			
Number of Farms Affected	Number	3	7			
Total Area Required From Farm Operations	Acres	1.8	56			
AIS Required		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Farmland Rating	Score	34	36			
Total Buildings Required	Number	0	0			
Housing Units Required	Number	0	1			
Commercial Units Required	Number	0	0			
Other Buildings or Structures Required	Number & Type	0	0			
Indirect Effects		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Cumulative Effects		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Environmental Justice Populations		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Historic Properties	Number	0	1			
Archeological Sites	Number	0	0			
Burial Site Protection *(authorization required)*		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
106 MOA Required		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
4(f) Evaluation Required		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
6(f) Land Conversion Required		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Flood Plain		☐ Yes ☒ No	☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Total Wetlands Filled	Acres	0	0.6			
Stream Crossings	Number	2	2			
Endangered Species		☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Design Year Noise Sensitive Receptors						
No Impact	Number	14	14			
Impacted	Number	0	0			
Contaminated Sites	Number	0	0			

*Note the Original EA (2010) preferred alternative environmental impacts were not broken in the same categories as the table above. It was not included in the table above because the purpose and need between the projects are different. For more description of the original EA see **Appendix 8**.

BASIC SHEET 6 – TRAFFIC SUMMARY MATRIX

	ALTERNATIVES/SECTIONS					
	No Build*	**Build (All Alternatives)***	**B**	**C**	**D**	**E**
TRAFFIC VOLUMES						
Existing ADT Yr. 2010	45700	45700				
Const. Yr. ADT Yr. 2016	52900	52900				
Const. Plus 10 Yr. ADT Yr. 2028	67100	67100				
Design Yr. ADT Yr. 2040	81300	81300				
DHV Yr. 2040	7804	7804				
TRAFFIC FACTORS						
K [☒ 30 /☐ 100/☐ 200] (%)	9.6%	9.6%	%	%	%	%
D (%)	58/42%	58/42%	%	%	%	%
Design Year T (% of ADT)	N/A	N/A	%	%	%	%
T (% of DHV)	35.1%	35.1%	%	%	%	%
Level of Service	F	C				
SPEEDS						
Existing Posted	65	65				
Future Posted	65	65				
Design Year Project Design Speed	70	70				
OTHER *(specify)*						
P (% of ADT)	N/A	N/A	%	%	%	%
K_8 (% OF ADT)	N/A	N/A	%	%	%	%
Other						

ADT = Average Daily Traffic
DHV = Design Hourly Volume
K [$_{30/100/200}$] : K_{30} = Interstate, K_{100} = Rural, K_{200} = Urban, % = ADT in DHV
D = % DHV in predominate direction of travel
T = Trucks
P = % ADT in peak hour
K_8 = % ADT occurring in the average of the 8 highest consecutive hours of traffic on an average day (required only if CO analysis is required).

*All volumes are based on Site ID #530275 (See Appendix 21 for WisDOT Traffic Forecast)

BASIC SHEET 7 – EIS SIGNIFICANCE CRITERIA

In determining whether a proposed action is a "major action significantly affecting the quality of the human environment," the proposed action must be assessed in light of the following criteria (1) if significant impact(s) will result, the preparation of an environmental impact statement (EIS) should commence immediately. Indicate whether the issue listed below is a concern for the proposed action or alternative and (2) if the issue is a concern, explain how it is to be addressed or where it is addressed in the environmental document.

1. Will the proposed action stimulate substantial indirect environmental effects?
   - ☒ No
   - ☐ Yes – Explain or indicate where addressed.

2. Will the proposed action contribute to cumulative effects of repeated actions?
   - ☒ No
   - ☐ Yes – Explain or indicate where addressed.

3. Will the creation of a new environmental effect result from this proposed action?
   - ☒ No
   - ☐ Yes – Explain or indicate where addressed.

4. Will the proposed action impact geographically scarce resources?
   - ☒ No
   - ☐ Yes – Explain or indicate where addressed.

5. Will the proposed action have a precedent-setting nature?
   - ☒ No
   - ☐ Yes – Explain or indicate where addressed.

6. Is the degree of controversy associated with the proposed action high?
   - ☒ No
   - ☐ Yes – Explain or indicate where addressed.

7. Will the proposed action be in conflict with official agency plans or local, state, tribal, or national policies, including conflicts resulting from potential effects of transportation on land use and transportation demand?
   - ☒ No
   - ☐ Yes – Explain or indicate where addressed.

BASIC SHEET 8 – ENVIRONMENTAL COMMITMENTS

Attach a copy of this page to the design study report and the PSE submittal package.

Factor Sheet	Comments
A-1 General Economics	No commitments needed
A-2 Business	**Commitments Made –** During construction, provide access to all businesses in the project area. The Wisconsin Department of Transportation (WisDOT) construction engineer will ensure the fulfillment of this commitment.
A-3 Agriculture	No commitments needed
B-1 Community or Residential	**Commitments Made –** During construction, provide access to all properties abutting the corridor. The WisDOT construction engineer will ensure fulfillment of this commitment. **Commitments Made** – The Rock County Emergency Dispatch Center will be kept informed of the status of construction and any restrictions on access locations for emergency vehicles. Reach out to school districts regarding bus routes before/during the road closure. The WisDOT construction engineer will ensure and monitor the fulfillment of these commitments.
B-2 Indirect Effects	No commitments needed
B-3 Cumulative Effects	No commitments needed
B-4 Environmental Justice	No commitments needed
B-5 Historic Resources	The potentially eligible historic property Gonstead Chiropractic Clinic will be avoided by design.
B-6 Archaeological Sites	No commitments needed
B-7 Tribal Coordination/Consultation	**Commitments Made** – WisDOT Bureau of Technical Services Environmental Process and Documentation Section (BTS-EPDS) will send the archaeological and historic survey reports to the Forest County Potawatomi Community. The WisDOT environmental coordinator and design engineer will ensure fulfillment of this commitment.
B-8 Section 4(f) and 6(f) or Other Unique Areas	
B-9 Aesthetics	**Commitments Made** – Community Sensitive Design (CSD) elements will be discussed with local officials, municipalities, and the public when the project is scheduled for final design/construction to determine what elements will be included as part of the project. The WisDOT design engineer will ensure fulfillment of this commitment.
C-1 Wetlands	**Commitments Made** – Measures will be implemented to minimize wetland impacts in the area. A total of 0.6 acres of wetland will be impacted and the impacts will be mitigated using the World Dairy Center bank site at ratios agreed to with the Wisconsin Department of Natural Resources (WDNR). The WisDOT environmental coordinator will ensure fulfillment of this commitment.

C-2 Rivers, Streams and Floodplains	**Commitments Made** – Standard erosion control practices will be implemented during construction to minimize short-term adverse effects to the floodplain. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment. **Commitments Made** – Work that could affect water quality and habitat will be completed between June 15 and September 15. The contractor may work in other areas near the waterway beyond September 15th provided appropriate measures are taken to control erosion. The special provisions will include the date of restrictions for in-stream work. The WisDOT construction engineer will ensure and monitor the fulfillment of this commitment. **Commitments Made** – Compensatory storage will be created to mitigate the filing in of the flood storage volume. Plans, specifications and estimates (PS&E) documents shall specify requirements to be met during construction. The WisDOT design engineer will ensure fulfillment of this commitment.
C-3 Lakes or other Open Water	No commitments needed
C-4 Groundwater, Wells and Springs	No commitments needed
C-5 Upland Wildlife and Habitat	No commitments needed
C-6 Coastal Zones	No commitments needed
C-7 Threatened and Endangered Species	Coordination with WDNR is ongoing. Special provisions may be required.
D-1 Air Quality	No commitments needed
D-2 Construction Stage Sound Quality	**Construction Restrictions** – The contractor shall check for, and comply with, local ordinances governing the hours of operation of construction equipment. The special provisions will include restrictions for operating motorized construction equipment during certain times of the week. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment.
D-3 Traffic Noise	**Local Municipality Coordination** – Coordination with local units of government shall be completed in areas currently undeveloped to notify them of predicted sound levels for land use planning purposes. The WisDOT environmental coordinator and design engineer will ensure fulfillment of this commitment.
D-4 Hazardous Substances or Contamination	**Commitments Made** – Asbestos: No asbestos-containing material has been found on structure(s) (B-53-48, B-53-51, B-53-46, and B-53-47). Standard special provision 107-125 shall be included in the plans. The contractor will be responsible for completion of the Notification of Demolition and/or Renovation (DNR form 4500-113) if required. A copy of the inspection report is available from the region office. **Commitments Made** – Special provisions will be included in the project to warn the contractor of the presence of hazardous materials contamination outside of the construction limits. The WisDOT design engineer will ensure fulfillment of this commitment.
D-5 Storm Water	**Commitments Made** – Stormwater management shall comply with Trans 401 and address the requirements in the Rock River total maximum daily load (TMDL) through the use of appropriate stormwater quality control practices such as grass swales, standard and enhanced filter strips, infiltration areas, and wet detention ponds and catch basins where they can be practically maintained. PS&E documents shall specify requirements to be met during construction. The WisDOT design engineer will ensure fulfillment of this commitment.

D-6 Erosion Control	**Commitments Made** – Proper erosion control measures will be used to minimize impacts per WisDOT and WDNR and Trans 401 of Wisconsin's Administrative Code. An Erosion Control Implementation Plan will be prepared for approval by WisDOT prior to construction. The erosion control plan review process will include soliciting and incorporating WDNR erosion control comments both on the plan for the 401 Water Quality Certification process during design and by reviewing the contractor's erosion control implementation plan prior to the start of construction. Implementation will occur and will be monitored during construction by the construction engineer, who will monitor and ensure fulfillment of this commitment.
E-1 Other Emerald Ash Borer	**Commitments Made** – It is illegal to move or transport ash tree material, the emerald ash borer, and hardwood debris (i.e. firewood) from Emerald Ash Borer (EAB) beetle quarantined areas to a non-quarantined area without a compliance agreement issued by the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP). Regulated items include cut hardwood (non-coniferous) firewood, ash logs, ash mulch or bark fragments larger than one-inch in diameter, or ash nursery stock. The contractor will have an arborist identify ash trees along the project prior to construction. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment.
E-2 Other Oak Wilt	**Commitments Made** – Due to the possibility of oak wilt in the project area, to prevent the spread of oak wilt disease avoiding cutting or pruning of oaks from April through September. The WisDOT construction engineer will ensure and monitor the fulfillment of this commitment.
E-3 Other FAA Coordination	**Commitments Made** – Federal Aviation Administration (FAA) should be contacted to determine if a permit is required during final design. If a permit is required, it shall be filed for at least 45 days prior to the start of construction to allow enough time for the completion of a determination of "no hazard to air navigation" or "hazard to air navigation". The WisDOT construction engineer will ensure fulfillment of this commitment. If any changes to the permit are needed, the contractor will be responsible for contacting FAA with the permit modifications needed. He will also be responsible that the anti-collision lights are installed and working for cranes that are left in the air at night and notifying FAA during the day for the crane locations. The WisDOT construction engineer will ensure fulfillment of this commitment.

FACTOR SHEETS DEFINED

This section of the Environmental Assessment (EA) is called the "Factor Sheets." Individual Factor Sheets correspond with specific environmental factors identified in the Environmental Factors Matrix of the Basic Sheets (pg. 28). The Factor Sheets are used to provide more detailed information on environmental factors and issues that may be substantial and require more of an in-depth discussion than is provided in the Basic Sheets. If there is no substantial impact to a specific environmental factor, a Factor Sheet was not completed.

Factor Sheets Page

GENERAL ECONOMICS EVALUATION

Wisconsin Department of Transportation

Factor Sheet A -1

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None Identified	

1. Briefly describe the existing economic characteristics of the area around the project:

Economic Activity	Description
a. Agriculture	The northeast quadrant of the I-39/90 and I-43/WIS 81 interchange is currently used for agricultural purposes. However, the future land use for that area is planned to be community commercial and residential. The future land use surrounding the project area will only have agriculture at the north end of the project limits.
b. Retail business	Retail businesses are located on the west side of the interchange in the city of Beloit. These businesses are located along WIS 81 and include large superstores, hotels, restaurants, car dealerships, and other businesses.
c. Wholesale business	N/A
d. Heavy industry	N/A
e. Light industry	Pepisco, Hormel Foods, Staples, Jacobson Beloit LLC, and Kerry Inc. are all located between the I-39/90 and I-43/WIS 81 interchange and the project's south limits. The Gateway Business Park is located in the southeast quadrant of the interchange and runs parallel to I-39/90 down to State Line Road.
f. Tourism	The traffic continues to increase along I-39/90 between the city of Beloit and Madison, especially during the summer months when tourists drive this corridor from Illinois up to northern Wisconsin. Also, the WisDOT Welcome Center is located within the project limits, just south of the interchange.
g. Recreation	N/A
h. Forestry	N/A
i.	

2. Discuss the economic advantages and disadvantages of the proposed action and whether advantages would outweigh disadvantages. Indicate how the project would affect the characteristics described in item 1 above:

Advantage – The preferred alternative will enhance local mobility by improving access into the city of Beloit from the extension of WIS 81/Milwaukee Road to the County X/Hart Road interchange. This new extension will also provide pedestrian and bicycle accommodations between the city of Beloit and the Gateway Business Park.

Disadvantage – The 0.25 mile new extension of WIS 81/Milwaukee Road will relocate local Beloit access from westbound I-43 to the County X/Hart Road interchange. This extension will require westbound vehicles to use the County X/Hart Road interchange to enter the city of Beloit via WIS 81/Milwaukee Road. This will result in additional travel time (~3 minutes) for vehicles entering the city from I-43.

3. What effect will the proposed action have on the potential for economic development in the project area?

☐ **The proposed project will have no effect on economic development.**

☒ **The proposed project will have an effect on economic development.**

☒ Increase, describe: The extension of WIS 81/Milwaukee Road to the County X/Hart Road Interchange will improve local access to the Gateway Business Park and is consistent with the local land use. Local access from this interchange is important in order to be consistent with local and regional transportation and land use planning objectives and to be compatible with the proposed roadway improvements identified in the city of Beloit's 2008 Comprehensive Plan. The plan includes the desire to develop regional commercial uses near the I-43 interchange. Specifically, the area between I-43 and IL 75 has been identified as an area for future business park development.

☐ Decrease, describe: _____

BUSINESS EVALUATION

Wisconsin Department of Transportation

Factor Sheet A-2

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. Is a Conceptual Stage Relocation Plan attached to this document?

☐ Yes

☒ No - (Explain) There are no businesses to be relocated as part of this project.

2. Describe the economic development or existing business areas affected by the proposed action:

Kerry Ingredients & Flavours access will be affected due to the new WIS 81/Milwaukee Road extension. Their driveway access will be shifted several hundred feet to the east. Businesses along WIS 81/Milwaukee Road west of the interchange are concerned about the loss of business due to the access from I-43 being moved to the County X/Hart Road interchange.

3. Identify and discuss existing modes of transportation and their traffic within the economic development or existing business area:

Motor vehicles are the primary mode of transportation for the corridor and the area. Bicycle and pedestrian accommodations are not present.

4. **Identify and discuss effects on the economic development potential and existing businesses that are dependent upon the transportation facility for continued economic viability:**

☐ The proposed project will have no effect on a transportation-dependent business or industry.

☒ The proposed action may change the conditions for a business that is dependent upon the transportation facility. Identify effects, including effects which may occur during construction.

Businesses along WIS 81/Milwaukee Road might see a minimal impact due to the access from I-43 being moved to the County X/Hart Road interchange. Approximately 80% of motor vehicles are exiting at the I-39/90 ramps. The current ramps access will remain the same in the proposed action along I-39/90. However, the other 20% of motor vehicles are exiting from I-43 to WIS 81/Milwaukee Road and will need to use the County X/Hart Road interchange to access WIS 81/Milwaukee Road.

5. Describe both beneficial and adverse effects on:

A. The existing business area affected by the proposed action. Include any factors identified by business people that they feel are important or controversial.

The I-90 Business Connection group that is comprised of 23 businesses in the area sent an official letter to WisDOT that included two resolutions related to this project. The first resolution is that they are concerned about the number of potential roundabouts a motor vehicle would be required to pass through if they were entering the city of Beloit from I-43 using the County X/Hart Road interchange. They would prefer to see these intersections signalized. The second resolution is that they want to see WIS 81 start at the off ramp at the County X/Hart Road interchange. This allows WIS 81 roadway to still be the roadway that vehicles use to access the city of Beloit from I-43.

B. The existing employees in businesses affected by the proposal. Include, as appropriate, a discussion of effects on minority populations or low-income populations.

Some existing employees will experience both an increase and decrease in travel times to their jobs (~3-4 minutes).

6. Estimated number of businesses and jobs that would be created or displaced because of the project:

Business/Job Type	Businesses			Jobs	
	Created	Displaced	Value	Created	Displaced
Retail	0	0	0	0	0
Service	0	0	0	0	0

Wholesale	0	0	0	0	0
Manufacturing	0	0	0	0	0
Other (List)	0	0	0	0	0

7. Are any owners or employees of created or displaced businesses elderly, disabled, low-income or members of a minority group?

☒ No
☐ Yes – If yes, complete Factor Sheet B-4, Environmental Justice Evaluation.

8. Is Special Relocation Assistance Needed?

☒ No
☐ Yes – Describe special relocation needs.

9. Identify all sources of information used to obtain data in item 8:

☐ WisDOT Real Estate Conceptual Stage Relocation Plan ☐ Multiple Listing Service (MLS)
☐ Newspaper listing(s) ☒ Other - Identify: N/A

10. Describe the business relocation potential in the community:

A. Total number of available business buildings in the community. N/A

B. Number of available and comparable business buildings by type and price (Include business buildings in price ranges comparable to those being dislocated, if any).
N/A Number of available and comparable type business buildings in the price range of _____
N/A Number of available and comparable type business buildings in the price range of _____
N/A Number of available and comparable type business buildings in the price range of _____

11. Describe how relocation assistance will be provided in compliance with the WisDOT Relocation Manual or FHWA regulation 49 CFR Part 24. Check all that apply:

☐ Business acquisitions and relocations will be completed in accordance with the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended." In addition to providing for payment of "Just Compensation" for property acquired, additional benefits are available to eligible displaced persons forced to relocate from their business. Some available benefits include relocation advisory services, reimbursement of moving expenses, replacement of business payments. In compliance with State law, no person would be displaced unless a comparable replacement business would be provided.

Compensation is available to all displaced persons without discrimination. Before initiating property acquisition activities, property owners will be contacted and given an explanation of the details of the acquisition process and Wisconsin's Eminent Domain Law under Section 32.05, Wisconsin Statutes. Any property to be acquired will be inspected by one or more professional appraisers. The property owner will be invited to accompany the appraiser during the inspection to ensure the appraiser is informed of every aspect of the property. Property owners will be given the opportunity to obtain an appraisal by a qualified appraiser that will be considered by WisDOT in establishing just compensation. Reasonable cost of an owner's appraisal will be reimbursed to the owner if received within 60 days of initiation of negotiations. Based on the appraisal(s) made, the value of the property will be determined, and that amount offered to the owner.

☐ Describe other relocation assistance requirements, not identified above.

12. Identify any difficulties relocating a business displaced by the proposed action and describe any special services needed to remedy identified unusual conditions:

N/A

13. Describe any additional measures that will be used to minimize adverse effects or provide benefits to those relocated. Also discuss accommodations made to minimize adverse effects to businesses that may be affected by the project, but not relocated:

N/A

AGRICULTURE EVALUATION

Wisconsin Department of Transportation

Factor Sheet A-3

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. Total acquisition interest, by type of agricultural land use:

Type of Land Acquired From Farm Operations	Type of Acquisition (acres)		Total Area Acquired (acres)
	Fee Simple	Easement	
Crop land and pasture	55.4		55.4
Woodland			
Land of undetermined or other use (e.g., wetlands, yards, roads, etc.)	0.6		0.6
Totals	56.0		56.0

2. Indicate number of farm operations from which land will be acquired:

Acreage to be Acquired	Number of Farm Operations
Less than I acre	2
1 acre to 5 acres	2
More than 5 acres	3

3. Is land to be converted to highway use covered by the Farmland Protection Policy Act?

☒ No
- ☐ The land was purchased prior to August 6, 1984 for the purpose of conversion.
- ☐ The acquisition does not directly or indirectly convert farmland.
- ☐ The land is clearly not farmland
- ☒ The land is already in, or committed to urban use or water storage.

☐ Yes (This determination is made by the Natural Resources Conservation Service (NRCS) via the completion of the Farmland Impact Conversion Rating Form, NRCS Form AD-1006)
- ☐ The land is prime farmland which is not already committed to urban development or water storage.
- ☐ The land is unique farmland.
- ☐ The land is farmland which is of statewide or local importance as determined by the appropriate state or local government agency.

4. Has the Farmland Impact Conversion Rating Form (AD-1006) been submitted to NRCS?

☐ No - Explain.

☒ Yes
- ☒ The Site Assessment Criteria Score (Part VI of the form) is less than 60 points for this project.
  Date Form AD-1006 completed: February 17, 2014
- ☐ The Site Assessment Criteria Score is 60 points or greater.
  Date Form AD-1006 completed. _____

See Appendix 19 for NRCS correspondence.

5. Is an Agricultural Impact Statement (AIS) Required?

☐ No
- ☐ Eminent Domain will not be used for this acquisition
- ☐ The project is a “Town Highway” project
- ☐ The acquisition is less than 1 acre
- ☐ The acquisition is 1-5 acres and DATCP chooses not to do an AIS.
- ☐ Other.

☒ Yes
- ☒ Eminent Domain may be used for this acquisition.
- ☒ The project is not a "Town Highway" project
- ☐ The acquisition is 1-5 acres and DATCP chooses to do an AIS.
- ☒ The acquisition is greater than 5 acres
- ☒ Other

An AIS addendum was published on 12/27/13 as part of the previous I-39/90 mainline project ID 1001-10-02 that included the I-43 interchange adjacent properties. See Appendix 15 for DATCP letter and AIS addendum.

6. Is an Agricultural Impact Notice (AIN) Required?

☐ No, the project is not a State Trunk Highway Project - AIN not required but complete questions 7-16.

☒ Yes, the project is a State Trunk Highway Project - AIN may be required.

Is the land acquired "non-significant"?

☐ Yes - (All must be checked) An AIN is not required but complete questions 7-16.
- ☐ Less than 1 acre in size
- ☐ Results in no severances
- ☐ Does not significantly alter or restrict access
- ☐ Does not involve moving or demolishing any improvements necessary to the operation of the farm
- ☐ Does not involve a high value crop

☒ No
- ☐ Acquisition 1 to 5 acres - **AIN required**. Complete Pages 1 and 2, Form DT1999, (Pages 1 and 2, Figure 1, Procedure 21-25-30.)
- ☒ Acquisition over 5 acres - **AIN required**. Complete Pages 1, 3 and 4, Form DT1999. (Pages 1, 3 and 4, Figure 1, Procedure 21-25-30)

If an AIN is completed, do not complete the following questions 7-16.

7. Identify and describe effects to farm operations because of land lost due to the project:

☐ Does Not Apply.

☒ Applies – Discuss.

Currently, land in the interchange's northeast quadrant is being rented as crop land. A total of 56 acres of edge right-of-way from farmland will be impacted along the interchange. The city of Beloit's future land use plan indicates that this land is anticipated to be developed into commercial property. The primary negative effect is the loss of farmable land to individual landowners.

8. Describe changes in access to farm operations caused by the proposed action:

☒ Does Not Apply.

☐ Applies – Discuss.

9. Indicate whether a farm operation will be severed because of the project and describe the severance (include area of original farm and size of any remnant parcels):

☒ Does Not Apply.

☐ Applies – Discuss.

10. Identify and describe effects generated by the acquisition or relocation of farm operation buildings, structures or improvements (e.g., barns, silos, stock watering ponds, irrigation wells, etc.). Address the location, type, condition and importance to the farm operation as appropriate:

☒ Does Not Apply.

☐ Applies – Discuss.

11. Describe effects caused by the elimination or relocation of a cattle/equipment pass or crossing. Attach plans, sketches, or other graphics as needed to clearly illustrate existing and proposed location of any cattle/equipment pass or crossing:

☒ Does Not Apply.

☐ Replacement of an existing cattle/equipment pass or crossing is not planned. Explain.

☐ Cattle/equipment pass or crossing will be replaced.
☐ Replacement will occur at same location.
☐ Cattle/equipment pass or crossing will be relocated. Describe.

12. Describe the effects generated by the obliteration of the old roadway:

☒ Does Not Apply.
☐ Applies – Discuss.

13. Identify and describe any proposed changes in land use or indirect development that will affect farm operations and are related to the development of this project:

☒ Does Not Apply.
☐ Applies – Discuss.

14. Describe any other project-related effects identified by a farm operator or owner that may be adverse, beneficial or controversial:

☒ No effects indicated by farm operator or owner.
☐ Applies – Discuss.

15. Indicate whether minority or low-income population farm owners, operators, or workers will be affected by the proposal: (Include migrant workers, if appropriate.)

☒ No
☐ Applies – Discuss.

16. Describe measures to minimize adverse effects or enhance benefits to agricultural operations:

Land acquisition has been minimized as much as possible to reduce the impact to adjacent owners and their farm operations. The project footprint was kept to a minimum through the use of temporary easements in some locations rather than acquiring right-of-way in fee.

COMMUNITY OR RESIDENTIAL EVALUATION

Wisconsin Department of Transportation

Factor Sheet B-1

Alternative Modified 2A	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. **Give a brief description of the community or neighborhood affected by the proposed action:**

Name of Community/Neighborhood –
City of Beloit
Incorporated
☒ Yes ☐ No

Total Population
36,966

Demographic Characteristics

Census Year ___2010____	% of Population
White	68.9
African American	15.1
Native American	0.4
Asian	1.1
Other Race	10.0
Two or More Races	4.4

Name of Community/Neighborhood –
Town of Turtle
Incorporated
☐ Yes ☒ No

Total Population
2,429

Demographic Characteristics

Census Year ___2000____	% of Population
White	97.26
African American	1.47
Native American	0.33
Asian	0.25
Other Race	0.45
Two or More Races	0.25

2. Identify and discuss existing modes of transportation and their importance within the community or Neighborhood:

I-43 is currently a route of state, regional, and local importance and it is included in the National Highway System. This interstate serves and connects Beloit, Milwaukee, and Green Bay. I-43 is identified as a Backbone route by the WisDOT Corridors 2030 Transportation Plan and as Primary Highway in the Glacial Plains Corridor in Connections 2030. The interchange itself currently does not have any accommodations for pedestrians or bicycles.

The I-39/90 and I-43/WIS 81 interchange serves as the primary interstate access to the city of Beloit via WIS 81. There are several other local access roads from the east into the city of Beloit. Local access from this interchange is important in order to be consistent with local and regional transportation and land use planning objectives and to be compatible with the proposed roadway improvements identified in the city of Beloit's 2008 Comprehensive Plan.

The town of Turtle is accessed from I-43 by using the County X/Hart Road interchange.

3. **Identify and discuss the probable changes resulting from the proposed action to the existing modes of transportation and their function within the community or neighborhood:**

   The proposed interchange improvement will include pedestrian and bicycle accommodations from the city of Beloit to the Gateway Business Park along the WIS 81/Milwaukee Road extension and ultimately up to the I-43/County X/Hart Road interchange. This improvement will provide a facility for both pedestrians and bicyclists to safely cross I-39 in this area.

4. **Briefly discuss the proposed action's direct and indirect effect(s) on existing and planned land use in the community or neighborhood:**

   The 2008 City of Beloit Comprehensive Plan identifies the I-39/90 and I-43/WIS 81 interchange as a planned improvement project. The future land use plans in the project area are based on the completion of this new and improved interchange. The future land use plans include the transition from farmland to a new community commercial and planned neighborhood in the northeast quadrant of the interchange. See **Appendix 10** for current and future land use maps.

   Also, the city of Beloit is anticipating that the interchange's southwest quadrant will be developed into commercial property. There appears to be interest in building a hotel in this area. In addition to the hotel, there have been discussions between the Department and Beloit in regards to possibly constructing a park and ride lot in this area, adjacent to the planned development.

5. **Address any changes to emergency or other public services during and after construction of the proposed project:**

   Emergency services will be maintained during construction as there will be no designated alternate route for this project. Intermittent delays due to lane closures can be expected during construction. Once the proposed action is completed, the extension of WIS 81/Milwaukee Road will improve the time from the city of Beloit to the Gateway Business Park by providing a new intersection with Gateway Boulevard.

6. **Describe any physical or access changes that will result. This could include effects on lot frontages, side slopes or driveways (steeper or flatter), sidewalks, reduced terraces, tree removals, vision corners, etc.:**

   The Kerry Corporation driveway will be relocated on their property. This driveway will be moved to the east from their existing entrance along the WIS 81/Milwaukee Road extension. The proposed improvements enhance the local mobility from Beloit to the Gateway Business Park. The new interchange will include extending WIS 81/Milwaukee Road from its current location in Beloit to connect with the I-43/County X/Hart Road interchange. This will move the local Beloit access from I-43 to the County X/Hart Road interchange. Bicycle and pedestrian accommodations will be provided on the WIS 81/Milwaukee Road extension.

7. **Indicate whether a community/neighborhood facility will be affected by the proposed action and indicate what effect(s) this will have on the community/neighborhood**:

   N/A

8. **Identify and discuss factors that residents have indicated to be important or controversial**:

   Residents and businesses identified that the local access between the city of Beloit and the southeast quadrant of the I-43 interchange is very important. Throughout the design process it was emphasized that the city of Beloit was in favor of the additional access. They were not in favor of any alternative that did not provided this access. They passed a resolution in favor of the alternative that provided this access. The residents indicated that bicycle and pedestrian mobility was also an important factor as well as minimizing the right of way impacts. The proposed action will include both bicycle and pedestrian accommodations and will minimize right of way impacts.

9. **List any Community Sensitive Design considerations, such as design considerations and potential mitigation measures.**

   The proposed action has the potential to incorporate CSD features into the bridge structures by making them aesthetically pleasing. WisDOT will coordinate with the local officials to discuss potential aesthetic treatments. The selection of the preferred alternative provided additional local access to the Gateway Business Park to enhance local

mobility. The extension allowed direct access to the Gateway Business Park from the city of Beloit. This extension will also create an additional intersection along WIS 81/Milwaukee Road.

10. Indicate the number and type of any residential buildings that will be acquired because of the proposed action. If either item a) or b) is checked, items 11 through 18 do not need to be addressed or included in the environmental document. If item c) is checked, complete items 11 through 18 and attach the Conceptual Stage Relocation Plan to the environmental document:

a. ☐ None identified.
b. ☒ No occupied residential building will be acquired as a result of this project. Provide number and description of non-occupied buildings to be acquired.
c. ☐ Occupied residential building(s) will be acquired. Provide number and description of buildings, e.g., single family homes, apartment buildings, condominiums, duplexes, etc.

WisDOT has acquired thru early acquisition of property 3490 Millington Road, Beloit, WI. **See Appendix 17 Regional Real Estate Section Correspondence** (Early Acquisition) for further details.

HISTORIC RESOURCES EVALUATION

Wisconsin Department of Transportation

Factor Sheet B-5

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

Section 106 Form or other documentation, with all necessary approvals, must be attached to the Environmental Document for all projects.

1. Parties contacted:

Parties Contacted	Date Contacted	Comments Received		
		No	Yes	Check if Attached
WI-SHPO	1/28/14		X	☒ See Appendix 14
Property Owners	9/10/13	X		☐
				☐
				☐
				☐
				☐
				☐
				☐

2. Property Name: Gonstead Chiropractic Clinic

3. Location: 3535 Clinic Road

4. Use: Chiropractic Clinic

5. Property type:

- ☐ Bridge
- ☒ Building
- ☐ Historic District
- ☐ Other: _____

6. Property Designations:

- ☐ National Historic Landmark (NHL)
- ☐ National Register of Historic Places (NRHP)
- ☐ State Register of Historic Places
- ☐ Local Registry
- ☐ Tribal Registry

7. A Determination of Eligibility (DOE) has been prepared:

- ☐ No - Property is already on NRHP or NHL.
- ☒ Yes - DOE prepared.
- ☐ Other: _____

8. Describe the significance of the structures and/or buildings:

The Gonstead Chiropractic Clinic is recommended as eligible for the National Register of Historic Places as a fine representative of the Neo-Expressionist subtype of Contemporary architecture. The building is in excellent condition and retains a high degree of integrity. The property's period of significance is 1964, the year of construction. Because it is an excellent representative of Contemporary architecture with a high degree of integrity and architectural distinction, the property is considered eligible for listing under Criterion C.

Following consultation with SHPO, the property is not considered to be eligible for listing as the work of a master architect because no information was found to suggest that Dresser is widely recognized as such and as a scholarly examination of Dresser's career and work does not exist at this time.

No information was found to suggest eligibility under Criterion A: History or Criterion B: Significant person.

9. In compliance with the requirements of Section 106, of the National Historic Preservation Act, the proposed project's effects on the historic property, (e.g., structure or building) have been evaluated in the following report, a copy of which is:

☐ In the project file, or
☒ Attached to this document:
- ☐ Documentation for determination of no historic properties affected (Reported on the Section 106 Review Form).
- ☒ Documentation for determination of no adverse or conditional no adverse effect to historic properties.
- ☐ Documentation for Consultation about adverse effect(s). A Memorandum of Agreement has been completed.
  - ☐ No. Consultation about effects is continuing.
  - ☐ Yes, a copy of the MOA is attached to this document. Summarize MOA stipulations below:

10. Do FHWA requirements for Section 4(f) apply to the project's use of the historic property?

☒ No
- ☐ Project is not federally funded.
- ☒ No right-of-way or Permanent Limited Easements will be acquired from the property and the project will not substantially impair the characteristics that qualify the property for the NRHP.
- ☐ Right-of-way will be acquired from the NRHP property but a *de minimus* finding has been proposed.
- ☐ Other – Explain:

☐ Yes – Complete Factor Sheet B-8, Section 4(f) and 6(f) or other Unique Areas.

AESTHETICS EVALUATION

Wisconsin Department of Transportation

Factor Sheet B-9

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. Landscape Characteristics:

a. Identify and briefly describe the visual character of the landscape:

The visual landscape of the I-39/90 and I-43/WIS 81 interchange area is split between rural and commercial. Industrial businesses, retail businesses, houses, and farmland surround the project area. The project is located primarily in the city of Beloit and the town of Turtle. The Canadian Pacific Railroad and the Spring Brook are located south of the interchange and run through the project area.

b. Indicate the visual quality of the view-shed and identify landscape elements which would be visually sensitive:

The visual quality of the existing view shed consists of a 54-year old cloverleaf interchange with businesses, houses, and farmland adjacent to the roadway. The project area does not contain any views that are considered visually sensitive.

2. User/viewer Characteristics:

b. Identify and discuss the viewers who will have a <u>view of</u> the improved transportation facility:

All of the residential and business properties adjacent to the I-39/90 and I-43/WIS 81 project area have a direct view from their properties. The change these viewers will notice will be minimal considering the distance from the adjacent properties to the interchange. The overall interchange design will change from an existing cloverleaf configuration to a free-flow system interchange with an embedded diamond interchange. This will increase the overall height by 26 feet from the current elevation to accommodate the free flow movements, but will have a minor impact to the overall view. See **Appendix 8** for computer renderings of the proposed improvements.

c. Identify and discuss users of the transportation facility who will have a <u>view from</u> the facility:

Users who will have a view from the transportation facility include vehicles traveling on WIS 81/Milwaukee Road, I-39/90 or I-43. Bicyclists and pedestrians will also have a view from the facility on the extension of WIS 81/Milwaukee Road to the County X/Hart Road interchange.

3. Effects:

a. Describe whether and how the project would affect the visual character of the landscape:

The proposed project will not significantly impact the visual character of the landscape. The proposed action will result in replacing an aging interchange with a new, re-configured interchange. WisDOT and the city of Beloit will evaluate options for aesthetic features that will improve the overall appearance of the interchange. These features could possibly include staining and relief features to the bridge structure and grass/landscaping elements. It is anticipated that along the extension of WIS 81/Milwaukee Road street lighting and landscaping features will be present.

WIS 81/Milwaukee Road will be extended eastward to the I-43/County X/Hart Road interchange. This new local road will include the addition of bicycle and pedestrian accommodations which will allow for the ability to add grass and landscaping elements to have the new roadway blend into the existing landscape.

b. Indicate the effects the project would have on the viewer groups:

All viewer groups that have a view of and a view from the facility will benefit from the additional aesthetics in the proposed action that are currently not present with the existing interchange.

4. Mitigation:

a. Have aesthetic commitments been made?

☐ No

☒ Yes - Discuss:

Specific aesthetic commitments will be included as part of this study. CSD elements will be discussed with local officials, municipalities, and the public when the project is scheduled for final design/construction. CSD elements have not been determined yet for this project.

WETLANDS EVALUATION
(9/2013)

Wisconsin Department of Transportation

Factor Sheet C-1

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. Describe Wetlands:

	Wetland 1		Wetland 2		Wetland 3	
Name (if known) or wetland number[1]	R-30		R-31			
County	Rock		Rock			
Location (Section-Township-Range)	S21-T1N-R13E		S21-T1N-R13E			
Location (Latitude)	42° 32’ 2.40”		42° 31’ 37.20”			
Location (Longitude)	-88° 57’ 25.20”		-88° 58’ 44.40”			
Location Map	See Question 3		See Question 3		See Exhibit_____	
Wetland Type(s)[2]	SM		M			
Wetland Loss	Acres 0		Acres 0.6		Acres ___	
Wetland is: (Check all that apply)[3]	Yes	No	Yes	No	Yes	No
• **Isolated from stream, lake or other surface water body**	X		X			
• **Not contiguous (in contact with) a stream, lake, or other water body, but within 100-year floodplain**		X		X		
• **If adjacent or contiguous, identify stream, lake or water body**	N/A		N/A			

[1]Use wetland numbering from the project wetland delineation report.
[2]Use wetland types as specified in the “*WisDOT FDM 24-5 Attachment 10.2 Wetland Type Correspondence Table”*
[3]If wetland is contiguous to a stream, complete Factor Sheet C-2, Rivers, Streams and Floodplains Impact Evaluation. If wetland is contiguous to a lake or other water body, complete Factor Sheet C-3, Lake or Water Body Impact Evaluation.

2. Are any impacted wetlands considered “wetlands of special status” per WisDOT Wetland Mitigation Banking Technical Guideline, page 10 (6 categories)?

☒ No
☐ Yes:
- ☐ Advanced Identification Program (ADID) Wetlands
- ☐ Public or private expenditure has been made to restore, protect, or ecologically manage the wetland on either public or private land
- ☐ Other – Describe: _____

3. Describe proposed work in the wetland(s), e.g., excavation, fill, marsh disposal, other:

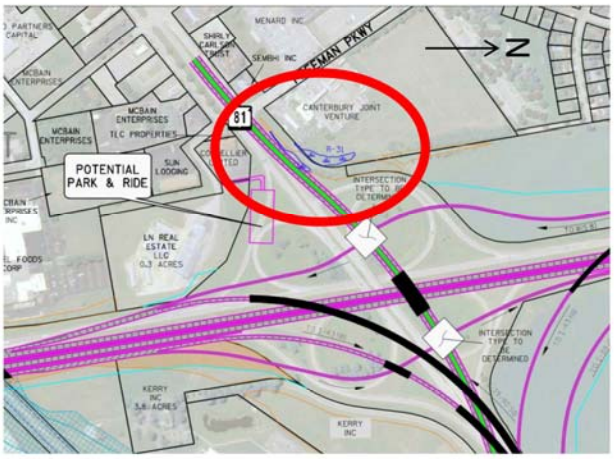
There are two wetlands located within the project area are identified as R-30 and R-31. Figure 1 below shows the location of the two wetlands. The following paragraphs describe the type of work that will occur near each wetland area.

- Wetland R-30 (South of existing Gateway Boulevard): This wetland is a designed detention basin for Gateway Boulevard. It is anticipated not to be impacted in the construction of the proposed action. The extension of WIS 81/Milwaukee will connect into the existing Gateway Boulevard prior to reaching R-30. Therefore this designed detention basin is anticipated to be avoided.

- Wetland R-31 (Northwest quadrant of the I-43 interchange): This wetland will be impacted from the realignment of WIS 81/Milwaukee Road to provide better construction staging and remove and extra curve along I-39/90. The proposed action will extend WIS 81/Milwaukee Road to the County X/Hart Road interchange. The roadway will be expanded from its current width to provide bicycle and pedestrian accommodations. The re-alignment will result in placing fill in this wetland.

Figure 1
Wetland Location Map

Wetland R-31



- Size – 0.59 acres
- Wet Meadow
- Troxel silt loam, 0 to 3 percent slopes
- Wetland Functional Value – Low

Wetland R-30

- Size – 0.18 acres
- Shallow Marsh
- Mahalasville silt loam
- Wetland Functional Value – Low

4. List any observed or expected waterfowl and wildlife inhabiting or dependent upon the wetland: (List should include permanent, migratory and seasonal residents).

No waterfowl or wildlife was observed on site during the field reconnaissance. Wildlife that may be present includes deer, turtles, frogs, waterfowl in open areas, as well as various song birds common to the area.

5. Federal Highway Administration (FHWA) Wetland Policy:

☐ Not Applicable - Explain

☐ Individual Wetland Finding Required - Summarize why there are no practicable alternatives to the use of the wetland.

☒ Statewide Wetland Finding: **NOTE: All three boxes below must be checked for the Statewide Wetland Finding to apply.**

- ☒ Project is either a bridge replacement or other reconstruction within 0.3 mile of the existing location.
- ☒ The project requires the use of 7.4 acres or less of wetlands.
- ☒ The project has been coordinated with the DNR and there have been no significant concerns expressed over the proposed use of the wetlands.

6. Erosion control or storm water management practices which will be used to protect the wetland are indicated on form: (Check all that apply)

- ☒ Factor Sheet D-6, Erosion Control Evaluation.
- ☒ Factor Sheet D-5, Stormwater Evaluation.
- ☐ Neither Factor Sheet - Briefly describe measures to be used

7. U S Army Corps of Engineers (USACE) Jurisdiction - Section 404 Permit (Clean Water Act)

☐ Not Applicable - No fill to be placed in wetlands or wetlands are not under USACE jurisdiction.

☒ Applicable - Fill will be placed in wetlands under the jurisdiction of the USACE.
Indicate area of wetlands filled: 0.59 Acres
Type of 404 permit anticipated:
☐ Individual Section 404 Permit required.
☒ General Permit (GP) or Letter Of Permission (LOP) required to satisfy Section 404 Compliance.

Indicate which GP or LOP is required:
☐ **Non-Reporting GP** [GP-002-WI (*expires 5/31/16*) or GP-004-WI (*expires 12/31/17*)]
☒ **Reporting GP** [GP-002-WI, GP-003-WI (*expires12/31/17*), or GP-004-WI]
☐ **Letter of Permission** [LOP-06-WI (*in effect 4/17/06, no expiration date*)]
☐ **Programmatic GP** [Applies to projects not covered under the DOT/DNR Cooperative Agreement]

8. Wisconsin Department of Natural Resources Coordination - Section 401 Water Quality Certification
☒ DNR has provided concurrence on the project wetland delineation. Received on: June 18, 2014
☐ Other- Explain

9. Section 10 Waters (Rivers and Harbors Act). For navigable waters of the United States (Section 10) indicate which 404 permit is required:
☒ No Section 10 Waters
☐ Section 10 Waters
☐ **Reporting GP** [GP-003-WI (*expires12/31/17*)]
☐ **Reporting GP** [GP-004-WI (*expires 12/31/17*)]

Indicate whether Pre-Construction Notification (PCN) to the USACE is:
☒ Not applicable.
☐ Required: Submitted on: (Date)

Status of PCN
USACE has made the following determination on: (Date)

USACE is in the process of review, anticipated date of determination is: (Date)

10. Wetland Avoidance and Impact Minimization: [Note: Required before compensation is acceptable]
A. Wetland Avoidance:
1. Describe methods used to avoid the use of wetlands, such as using a lower level of improvement or placing the roadway on new location, etc.:

The roadway improvements for the interchange could avoid impacts to the wetlands if the no build or 2A alternative were selected as the preferred alternative. The no build alternative was eliminated from further consideration because it does not meet the purpose and need for this project. The 2A alternative was not selected because it has a greater overall right of way and agricultural impact compared to the 2A modified alternative.

Wetland R-30 was avoided by design.

2. Indicate the total area of wetlands avoided:
Acres: 0.18 (wetland R-30)

B. Minimize the amount of wetlands affected:

1. Describe methods used to minimize the use of wetlands, such as increasing side slopes or use of retaining walls or beam guard, equalizer pipes, upland disposal of hydric soils, etc.:

   The new roadway extension of WIS 81/Milwaukee Road design will impact Wetland R-31. Minimizing techniques includes using steeper slopes outside clear zone to minimize fill of wetland.

2. Indicate the total area of wetlands saved through minimization:
   Acres:

   It will not be known until final design has been completed to the amount of wetland impact that will be minimized by steepening the side slopes. The total wetland area is small (0.59 acres), and is anticipated to not be viable to function as a wetland if majority of the wetland is required to be filled.

11. Compensation for Unavoidable Wetland Loss:

According to Section 404(b)(1), of the Clean Water Act, wetland compensatory mitigation procedures and sequencing will conform to the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (EPA) joint rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332; and 40 CFR Part 230 - dated April 10, 2008). Compensatory mitigation will be consistent with amendments to the Cooperative Agreement between DNR and WisDOT on compensatory mitigation for unavoidable wetland losses (July 2012), and the WisDOT Interagency Coordination Agreement and Wetland Mitigation Banking Technical Guidelines with DNR, USACE, EPA, USFWS and FHWA (March 2002).

	Type	Acre(s) Loss	Ratio	Compensation Type and Acreage	
				On-site	DOT Mitigation Bank site
RPF(N)	Riparian wetland (wooded)	NA	NA	Due to the small wetland that is being impacted by this project, it has been agreed upon by WisDOT and WDNR to mitigate the impact at a 1:1 ratio by debiting the 0.59 acres to WisDOT's World Dairy Center Wetland Mitigation Bank Site.	
RPF(D)	Degraded riparian wetland (wooded)	NA	NA		
RPE(N)	Riparian wetland (emergent)	NA	NA		
RPE(D)	Degraded riparian wetland (emergent)	NA	NA		
M(N)	Wet and sedge meadows, wet prairie, vernal pools, fens	0.59	1:1		
M(D)	Degraded meadow	NA	NA		
SM	Shallow marsh	NA	NA		
DM	Deep marsh	NA	NA		
AB(N)	Aquatic bed	NA	NA		
AB(D)	Degraded aquatic bed	NA	NA		
SS	Shrub Swamp, shrub carr, alder thicket	NA	NA		
WS(N)	Wooded swamp	NA	NA		
WS(D)	Degraded wooded swamp	NA	NA		
Bog	Open and forested bogs	NA	NA		

D = Degraded
N = Non-degraded

12. If compensation is not possible within the drainage area and floristic province thru the use of the DOT mitigation bank, explain why and describe how a search for an on-site compensation site was conducted:

A site search was not conducted because the wetland impact is a total of 0.59 acres. It is anticipated that the entire wetland would need to be filled and would not be viable to function as a wetland. Replacing this amount to a local wetland was not beneficial and therefore this wetland would be debited at the World Dairy Center Wetland Mitigation Bank Site.

13. Summarize the coordination with other agencies regarding the compensation for unavoidable wetland losses. Attach appropriate correspondence.

Measures which will be taken during final design to minimize wetland impacts include the following:

- Water quality impacts from silt and sedimentation will be minimized through the strict adherence to erosion control measures as required by the WisDOT *Specifications for Road and Bridge Construction.*
- Additional measures which will be considered include use of steeper embankment slopes and use of retaining walls.

To compensate for unavoidable wetland impacts from the project, mitigation measures will be employed in accordance with requirements of Section 404 of the Clean Water Act and the July 20, 1993 Interagency Cooperative Agreement between WisDOT, WDNR, USACE, USEPA, USFWS, and FHWA.

Mitigation ratios will be in accordance with the "WisDOT Wetland Mitigation Banking Technical Guideline" which establishes a program for compensatory wetland mitigation banking for WisDOT projects. Wetlands impacts are expected to be replaced at a 1:1 ratio with additional or alternative arrangements according to the WisDOT/WDNR Cooperative Agreement. The mitigation bank site to be debited for this project is the World Dairy Center Wetland Mitigation Bank, located in Dane County, Wisconsin.

Coordination is on-going with the WDNR and they are aware of the designed detention basin R-30 and the wetland R-31 encroachment. WDNR concurred with the wetland boundaries that were provided in the Wetland Delineation Report. See **Appendix 13** for WDNR coordination.

WisDOT Project ID: 1003-10-02

I-39/90 & I-43/WIS 81 INTERCHANGE

WETLAND LOCATIONS

CITY OF BELOIT

MILWAUKEE ROAD

81

FREEMAN PKWY

E. HART RD

N

R-31
0.6 Acres

39

90

CRANSTON RD

S3

S2

TRIBUTARY TO SPRING BROOK (S2)

KERRY INGREDIENTS & FLAVOURS

MILLINGTON ROAD

WIS 81/MILWAUKEE ROAD EXTENSION

SPRING BROOK (S3)

S3

CANADIAN PACIFIC RAILROAD

GATEWAY BLVD

R-30
No Impacts

43

E. HART RD

COUNTY X

SCALE 0 500' 1000'

LEGEND

- WETLANDS
- WETLAND IMPACTS
- PROPOSED BRIDGES
- EXISTING PARCEL BOUNDARY
- FLOODPLAIN
- FLOOD STORAGE
- STORMWATER FEATURE
- PROPOSED RIGHT-OF-WAY
- STREAMS/WATERWAYS/ AGRICULTURAL DITCHES

RIVERS, STREAMS AND FLOODPLAINS EVALUATION

Wisconsin Department of Transportation

Factor Sheet C-2

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. **Stream Name: Spring Brook (S29 T1N R13E and S21 T1N R13E) crosses project area twice**
   (see **Appendix 7** label S3)

2. **Stream Type: (Indicate Trout Stream Class, if known)**
   - ☐ Unknown
   - ☒ Warm water
   - ☐ Cold water
     If trout stream, identify trout stream classification: _____
   - ☐ Wild and Scenic River

3. **Size of Upstream Watershed Area: (Square miles or acres)**
   Spring Brook is located in the Turtle Creek Watershed in the Lower Rock River Basin. The Turtle Creek Watershed is 184,607 acres (288 square miles).

4. **Stream flow characteristics:**
   - ☒ Permanent Flow (year-round)
   - ☐ Temporary Flow (dry part of year)

5. **Stream Characteristics:**
   A. Substrate:
      1. ☐ Sand
      2. ☒ Silt
      3. ☐ Clay
      4. ☒ Cobbles
      5. ☐ Other-describe:

   B. Average Water Depth: _____1.25 ft____

   C. Vegetation in Stream
      - ☒ Absent
      - ☐ Present - If known describe:

   D. Identify Aquatic Species Present:
      No species were identified during the August 20 & 21, 2013 on-site field surveys. However, the waterway does support fish and other aquatic life.

   E. If water quality data is available, include this information:

      Water quality data was recorded in 2006 by the University of Wisconsin-Stevens Point at the Spring Brook - Walker Rd (Sb-2) station. The station is located off of Walker Road, approximately 1.5 miles east of where Spring Brook is located within the project area (east of IH-39, west of Town Hall Road and south of IH-43). The 2006 results indicate that Spring Brook has a moderate biochemical oxygen demand, a total phosphorus value higher than NR 102 standards, and tested positive for fecal coliform and E Coli.

      Water quality data was also recorded in 2003 by the University of Wisconsin-Stevens Point at the Spring Brook - Walker Rd (Sb-2) station. The study looked at insect taxa to assess pollution. Insects were surveyed in the waterway by Sb-2 and were identified so that a tolerance value could be assigned to each taxa using the Hilsenhoff Biotic Index (HBI) survey method. The tolerance values provide a measure of the sensitivity of aquatic organisms to human caused disturbance (i.e. pollution) and have been used as a tool for assessing the biological condition of streams and rivers. The HBI uses a scale of 0 to 10 for pollution tolerance values to assess pollution

in waterways. The Mean Pollution Tolerance Value associated with this stretch of the waterway was 5.1 in 2003. A result between 5.01 and 5.75 indicates fairly substantial pollution is likely.

In 2002 the University of Wisconsin-Stevens Point assessed water quality at the Spring Brook - Spring Brook at Guftafson Road station. This station is approximately 2.7 miles east of where Spring Brook is located within the project area (east of IH-39, west of Town Hall Road and south of IH-43). The study looked at insect taxa to assess pollution. The results indicated that very substantial pollution is likely in the Spring Brook River.

The water quality data can be obtained by opening the Wisconsin Department of Natural Resources Surface Water Data Viewer and turning on the Monitoring Station Points layer. Navigation to the station points referenced above will allow for detailed review of the monitoring data.

F. Is this river or stream on the WDNR's "Impaired Waters" list?
- ☒ No
- ☐ Yes - List: _____

6. If bridge or box culvert replacement, are migratory bird nests present?
- ☐ Not Applicable
- ☒ None identified
- ☐ Yes – Identify Bird Species present
  Estimated number of nests is:

7. Is a Fish & Wildlife Depredation Permit required to remove swallow nests?
- ☒ Not Applicable
- ☐ Yes
- ☐ No - Describe mitigation measures:

8. Describe land adjacent to stream*:*

The first location is along the south end of the project area underneath the railroad bridge crossing over I-39/90. This stream is labeled as S2 in **Appendix 7**. The land adjacent to this portion of the stream is old field, railroad corridor, and prairie. The second location is along the east end of the project area next to Millington Road. This stream is labeled as S3 in **Appendix 7**. The land adjacent to this portion of the stream includes forested upland habitat to the north and old field habitat to the south.

9. Identify upstream or downstream dischargers or receivers (if any) within 0.8 kilometers (1/2 mile) of the project site:

Waterway 2 (see **Appendix 7** label S2) within the project area limits is a perennial tributary to Spring Brook that crosses under I-39/90 through culverts north of Cranston Road.

10. Describe proposed work in, over, or adjacent to stream. Indicate whether the work is within the 100-year floodplain and whether it is a crossing or a longitudinal encroachment:

Floodplain
New roadway improvements will impact 1.9 acres of the area's 100-year floodplain. The impacts are along the upstream side of the Spring Brook crossing at I-39/90.

Flood Storage
A Flood Storage District (FSD) delineates that portion of the floodplain where storage of floodwaters has been taken into account and is relied upon to reduce the regional flood discharge. The district protects the flood storage areas and assures that any development in the storage areas will not decrease the effective flood storage capacity which would cause higher flood elevations.

No development will be allowed which removes flood storage volume unless an equal volume of storage as defined by the pre-development ground surface and the regional flood elevation shall be provided in the immediate area of the proposed development to compensate for the volume of storage which is lost, (compensatory storage). Excavation below the groundwater table is not considered to provide an equal volume of storage.

For this project, the proposed improvements will impact 9.6 acre-feet of flood storage. The impact will be mitigated by creating an equal amount of flood storage volume within the new interchange area.

11. Discuss the effects of any backwater which would be created by the proposed action. Indicate whether the proposed activities would be in compliance with NR 116 by creating 0.01 ft. backwater or less:

The proposed activities will be in compliance with NR 116 by creating 0.01 ft backwater or less. The backwater is anticipated not to impact the land adjacent to the stream. If the backwater is unable to be less than 0.01 ft proper mitigation will be used to decrease floodplain impacts. The mitigation of the flood storage district will mimic existing conditions. Mitigation measures are anticipated not to change base flood elevations (BFEs). Floodplain modifications will occur at the Spring Brook Bridge over I-39/90; no impacts are expected to BFEs.

12. Describe and provide the results of coordination with any floodplain zoning authority:

Floodplain
Information was provided from the city of Beloit's city engineer in reference to the Kerry Letter of Map Revision (LOMR) and the flood mapping. This information helped determine the updated floodplain boundary that has an effective date of April 1, 2014. Coordination is on-going with the WDNR and they are aware of floodplain encroachment in the southeast quadrant of the interchange.

Flood Storage
An agency coordination meeting discussing the flood storage districts was held on August 26, 2014. Attendees included both WDNR and WisDOT. Future flood storage district mapping is planned to be effective in 2015. See **Appendix 13** for WDNR coordination and meeting minutes from meeting on August 26, 2014.

13. Would the proposal or any changes in the design flood, or backwater cause any of the following impacts?

- ☒ No impacts would occur.
- ☐ Significant interruption or termination of emergency vehicle service or a community's only evacuation route.
- ☐ Significant flooding with a potential for property loss and a hazard to life.
- ☐ Significant impacts on natural floodplain values such as flood storage, fish or wildlife habitat, open space, aesthetics, etc.

Floodplain
No impacts will occur.

Flood Storage
The design team will provide compensatory storage near any fill areas that impact floodplain storage. If necessary, the compensatory storage areas will be hydraulically accessed through the use of equalizer pipes beneath the highway fill. Another option is the use of the interchange infields for storage mitigation and use sandy soils to release the water. Since the compensatory storage volume of 9.6 acre-feet equals the volume of storage lost due to the fill in the existing flood storage areas, no impacts to these areas will occur.

14. Discuss existing or planned floodplain use and briefly summarize the project's effects on that use:

Floodplain
New roadway improvements at the I-39/90 crossing of Spring Brook will impact 1.9 acres of the 100-year floodplain. Through highway design, the proposed improvements will not impact the floodplain boundaries in this area.

Flood Storage
9.6 acre-feet of flood storage impacts will occur along the proposed WIS 81/Milwaukee Road extension between the I-43 and County X/Hart Road interchanges. Through highway design, 9.6 acre-feet of compensatory flood storage will be incorporated into the proposed interchange. Therefore, the project will not affect the overall flood storage capacity in this area.

15. Discuss probable direct impacts to water quality within the floodplain, both during and after construction. Include the probable effects on plants, animals, and fish inhabiting or dependent upon the stream:

Roadway construction has the potential to affect water quality due to erosion, sedimentation, and stormwater runoff. In addition, existing roadways have the potential to reduce water quality due to the runoff of salt and other particles from the roadway. Over the long term, the proposed action is not anticipated to cause continued direct impacts to

water quality. Standard erosion control measures will be implemented during construction to minimize short-term adverse effects to the waterway. Filter strips are planned to be used on the back slopes along the south side of WIS 81/Milwaukee Road. The remaining drainage is proposed to be treated with stormwater Best Management Practices (BMPs) (infiltration basins, grass swales, and/or filter strips). These measures will be determined in the design stage.

16. Are measures proposed to enhance beneficial effects?

☒ No
☐ Yes. Describe: _____

There will be no measures proposed to enhance or decrease beneficial effects. Compensatory storage will be used to maintain floodplain storage to preserve existing floodplain physical characteristics. Five ponds will be constructed as shown in orange on the Preferred Alternative map. See **Appendix 7**.

RIVERS, STREAMS AND FLOODPLAINS EVALUATION

Wisconsin Department of Transportation

Factor Sheet C-2

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. **Stream Name: Unnamed tributary to Spring Brook (S29 T1N R13E)** (see **Appendix 7** label S2)

2. Stream Type: (Indicate Trout Stream Class, if known)

- ☒ Unknown
- ☐ Warm water
- ☐ Cold water
  - If trout stream, identify trout stream classification: _____
- ☐ Wild and Scenic River

3. Size of Upstream Watershed Area: (Square miles or acres)

The unnamed tributary to Spring Brook is located in the Turtle Creek Watershed in the Lower Rock River Basin. The Turtle Creek Watershed is 184,607 acres (288 square miles).

4. Stream flow characteristics:

- ☐ Permanent Flow (year-round)
- ☒ Temporary Flow (dry part of year)

5. Stream Characteristics:

A. Substrate:
   1. ☐ Sand
   2. ☐ Silt
   3. ☐ Clay
   4. ☒ Cobbles
   5. ☐ Other-describe:

B. Average Water Depth: _____1.25 ft____

C. Vegetation in Stream
   - ☐ Absent
   - ☒ Present - If known describe: Reed canary grass and sedge species were documented within the waterway bed (no water at the time of survey).

D. Identify Aquatic Species Present:
   No species were identified during the on-site field surveys (August 20 & 21, 2013) as the stream was dry. However, the waterway could support fish and other aquatic life when the waterway is full.

E. If water quality data is available, include this information:
   No water quality data is available for the unnamed tributary to Spring Brook.

F. Is this river or stream on the WDNR's "Impaired Waters" list?
   - ☒ No
   - ☐ Yes - List: _____

6. If bridge or box culvert replacement, are migratory bird nests present?

- ☐ Not Applicable
- ☒ None identified
- ☐ Yes – Identify Bird Species present
  Estimated number of nests is:

7. Is a Fish & Wildlife Depredation Permit required to remove swallow nests?

- ☒ Not Applicable
- ☐ Yes

☐ No - Describe mitigation measures:

8. Describe land adjacent to stream:

Waterway 2 (see **Appendix 7** label S2) within the project area limits is an unnamed tributary to Spring Brook that crosses under I-39/90 through culverts north of Cranston Road in the city of Beloit. The land adjacent to this portion of the stream is old field, railroad corridor, and prairie.

9. Identify upstream or downstream dischargers or receivers (if any) within 0.8 kilometers (1/2 mile) of the project site:

Spring Brook (Waterway S3, **Appendix 7**) is a receiving waterway.

10. Describe proposed work in, over, or adjacent to stream. Indicate whether the work is within the 100-year floodplain and whether it is a crossing or a longitudinal encroachment:

The work at the Waterway 2 location is not within the 100-year floodplain. New roadway improvements will not be constructed within the 100-year floodplain.

11. Discuss the effects of any backwater which would be created by the proposed action. Indicate whether the proposed activities would be in compliance with NR 116 by creating 0.01 ft. backwater or less:

N/A Tributary is not within the mapped floodplain.

12. Describe and provide the results of coordination with any floodplain zoning authority:

N/A Tributary is not within the mapped floodplain.

13. Would the proposal or any changes in the design flood, or backwater cause any of the following impacts?

☒ No impacts would occur.
☐ Significant interruption or termination of emergency vehicle service or a community's only evacuation route.
☐ Significant flooding with a potential for property loss and a hazard to life.
☐ Significant impacts on natural floodplain values such as flood storage, fish or wildlife habitat, open space, aesthetics, etc.

N/A Tributary is not within the mapped floodplain.

14. Discuss existing or planned floodplain use and briefly summarize the project's effects on that use:

N/A Tributary is not within the mapped floodplain.

15. Discuss probable direct impacts to water quality within the floodplain, both during and after construction. Include the probable effects on plants, animals, and fish inhabiting or dependent upon the stream:

N/A Tributary is not within the mapped floodplain.

16. Are measures proposed to enhance beneficial effects?

☒ No
☐ Yes. Describe: _____

N/A Tributary is not within the mapped floodplain.

CONSTRUCTION STAGE SOUND QUALITY EVALUATION

Wisconsin Department of Transportation

Factor Sheet D-2

Alternative Modified 2A	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None Identified	

1. Identify and describe residences, schools, libraries, or other noise sensitive areas near the proposed action and which will be in use during construction of the proposed action. Include the number of persons potentially affected:

The noise sensitive areas that may be affected during construction of the proposed action include the Gonstead Chiropractic Clinic and approximately 25 families.

2. Describe the types of construction equipment to be used on the project. Discuss the expected severity of noise levels including the frequency and duration of any anticipated high noise levels:

The noise generated by construction equipment will vary greatly, depending on equipment type/model/make, duration of operation and specific type of work effort. However, typical noise levels may occur in the 67 to 107 dBA range at a distance of 50 feet. See Table 1 for typical noise generated volumes.

3. Describe the construction stage noise abatement measures to minimize identified adverse noise effects. Check all that apply:

- ☒ WisDOT Standard Specifications 107.8(6) and 108.7.1 will apply.
- ☐ WisDOT Standard Specifications 107.8(6) and 108.7.1 will apply with the exception that the hours of operation requiring the engineer's written approval for operations will be changed to _____ P.M. until _____A.M.
- ☐ WisDOT Standard Specifications 107.8(6) and 108.7.1 will apply with the exception that the hours of operation requiring the engineer's written approval for operations will be changed to _____ P.M. until _____A.M.
- ☐ Special construction stage noise abatement measures will be required. Describe:

Table 1 Construction Equipment Sound Levels						
	Sound Level (dBA) at 50 Feet					
	60	70	80	90	100	110
Equipment Powered by Internal Combustion Engines						
Earth Moving						
Compactors (Rollers)		-----				
Front Loaders		----------				
Backhoes		----------				
Tractors		----------				
Scrapers, Graders			--------			
Pavers			----			
Trucks			----------			
Materials Handling						
Concrete Mixers		----------				
Concrete Pumps			----			
Cranes (Movable)		----------				
Cranes (Derrick)			----			
Stationary						
Pumps	----					
Generators		----------				
Compressors		----------				
Impact Equipment						
Pneumatic Wrenches			-------			
Jack Hammers & Rock Drills			----------			
Impact Pile Drivers				----------		
Other						
Vibrator	----------					
Saws		----------				
SOURCE: Figure 2-36, Report to the President and Congress on Noise						
Prepared by the U.S. EPA, February 1972						

TRAFFIC NOISE EVALUATION

Wisconsin Department of Transportation

Factor Sheet D-3

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None Identified	

1. Need for Noise Analysis:

A. Is the proposed action considered a Type I project? (A Type I project is defined as a project that involves construction of a roadway on new location or the physical alteration of an existing highway which substantially changes either the horizontal or vertical alignment or increases the number of through-traffic lanes).
- ☐ No – Complete only Factor Sheet D-2, Construction Stage Sound Quality Impact Evaluation.
- ☒ Yes – Complete Factor Sheet D-2, Construction Stage Sound Quality Impact Evaluation, and the rest of this sheet.

2. Traffic Data:

A. Indicate whether traffic volumes for sound prediction are different from the Design Hourly Volume (DHV) on Basic Sheet 6, Traffic Summary Matrix*:*
- ☒ No
- ☐ Yes – Indicate volumes and explain why they were used:

Automobiles	Veh/hr
Trucks	Veh/hr
Or Percentage (T)	%

B. Identify and describe the noise analysis technique or program used to identify existing and future sound levels: (See attached receptor location map as Figure 1).

Federal Highway Administration (FHWA) Traffic Noise Model 2.5 (TNM 2.5) was used for this noise analysis. TNM 2.5 is FHWA's computer program for predicting and analyzing highway traffic noise. TNM 2.5 computes highway traffic noise at chosen receiver locations near to the noise source and aids in noise barrier analysis.

Existing and future noise levels along IH 39/90 were modeled with TNM 2.5. Future noise levels are based on design year 2040 forecasted traffic volumes.

C. Identify sensitive receptors, e.g., schools, libraries, hospitals, residences, etc. potentially affected by traffic sound: (See attached receptor location map – Figure 1).

Receiver number M6 represents the Gonstead Chiropractic Clinic located in a historical building. Receivers M4, 10, and 11 represent 25 residences.

D. If this proposal is implemented will future sound levels produce a noise impact?
- ☒ No
- ☐ Yes - The impact will occur because:
  - ☐ The Noise Abatement Criteria (NAC) is approached (1 dBA less than the NAC) or exceeded.
  - ☐ Existing sound levels will increase by 15 dBA or more.

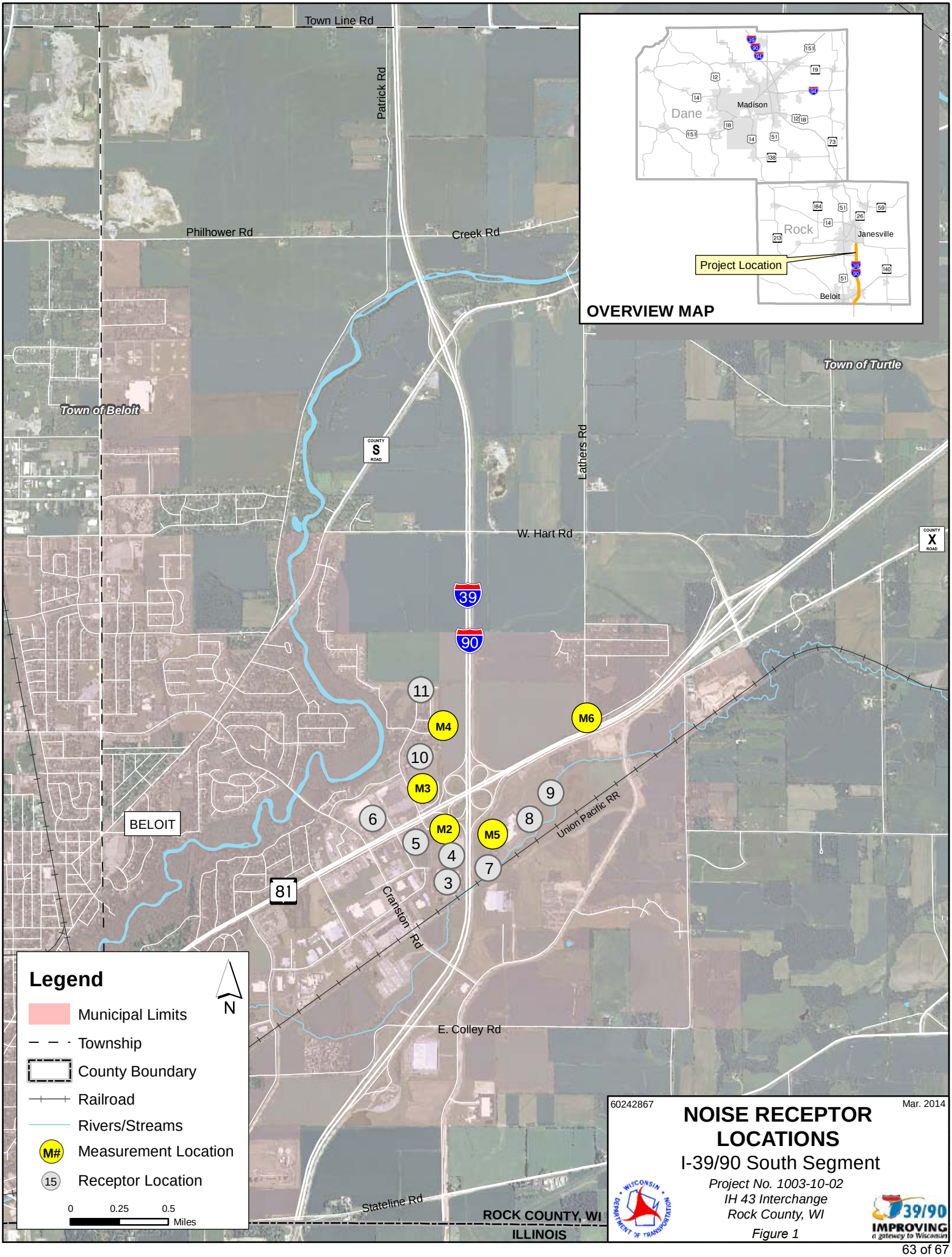
E. Will traffic noise abatement measures be implemented?
- ☒ Not applicable – Traffic noise impacts will not occur.
- ☐ No – Traffic noise abatement is not reasonable or feasible (explain why). In areas currently undeveloped, local units of government shall be notified of predicted sound levels for land use planning purposes. **A COPY OF THIS WRITTEN NOTIFICATION SHALL BE INCLUDED WITH THE FINAL ENVIRONMENTAL DOCUMENT.**
- ☐ Yes – Traffic noise abatement has been determined to be feasible and reasonable. Describe any traffic noise abatement measures which are proposed to be implemented. Explain how it will be determined whether or not those measures will be implemented:

Noise receptor locations are identified in the following table.

Although many of the receptor locations are closer to the centerline of the near lane of the proposed interchange configuration than they were to that of the existing interchange configuration, the increase in elevation of the proposed configuration caused future sound levels to decrease from existing in many cases. Minor increases occurred at two locations: at the Kerry Ingredients property (Receptors 8 and 9) and at the Gonstead Chiropractic Clinic (Receptor M6).

			Sound Level L_{eq}[1] (dBA)			Impact Evaluation		
Receptor Location or Site Identification (See attached map)	Distance from C/L of Near Lane to Receptor in feet (ft.) (existing OR future / existing)	Number of Families or People Typical of this Receptor Site	Noise Abatement Criteria [2] (NAC)	Future Sound Level	Existing Sound Level	Difference in Future and Existing Sound Levels (Col. e minus Col. f)	Difference in Future Sound Levels and Noise Abatement Criteria (Col. e minus Col. d)	Impact[3] or No Impact
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
M2	645 / 764	commercial	71	59	62	-3	-12	N
M3	788 / 1184	commercial	71	55	57	-2	-16	N
M4	647 / 830	2	66	56	60	-4	-10	N
M5	480 / 794	commercial	71	63	62	1	-8	N
M6	269	commercial	71	68	64	4	-3	N
3	320	commercial	71	68	69	-1	-3	N
4	544 / 591	commercial	71	63	63	0	-8	N
5	1142 / 1253	commercial	71	58	61	-3	-13	N
6	1563 / 1814	commercial	71	54	56	-2	-17	N
7	364 / 475	commercial	71	67	67	0	-4	N
8	945 / 1392	commercial	71	58	56	2	-13	N
9	844 / 1046	recreation area[4]	66	56	53	3	-10	N
10	753 / 1025	20	66	55	59	-4	-11	N
11	1007 / 1078	3	66	56	58	-2	-10	N

[1] Use whole numbers only.
[2] Insert the actual Noise Abatement Criteria from Wisconsin Administrative Code, Chapter Trans. 405.04, Table 1.
[3] An impact occurs when future sound levels exceed existing sound levels by 15 dB or more, **or**, future sound levels approach or exceed the Noise Abatement Criteria ("approach" is defined as 1 dB less than the Noise Abatement Criteria, therefore an impact occurs when Column (h) is –1 db or greater). I = Impact, N = No Impact.
[4] Private recreational area of the Kerry Company


Town Line Rd
Patrick Rd
Philhower Rd
Creek Rd
Town of Beloit
Town of Turtle
Lathers Rd
W. Hart Rd
39
90
11
M4
10
M3
6
5
M2
4
3
M5
7
8
9
M6
Union Pacific RR
BELOIT
81
Cranston Rd
E. Colley Rd
Stateline Rd
ROCK COUNTY, WI
ILLINOIS
OVERVIEW MAP
Dane
Madison
Rock
Janesville
Beloit
Project Location
Legend
N
Municipal Limits
Township
County Boundary
Railroad
Rivers/Streams
M# Measurement Location
15 Receptor Location
0 0.25 0.5 Miles
60242867
Mar. 2014
NOISE RECEPTOR LOCATIONS
I-39/90 South Segment
Project No. 1003-10-02
IH 43 Interchange
Rock County, WI
Figure 1
WISCONSIN DEPARTMENT OF TRANSPORTATION
39/90 IMPROVING a gateway to Wisconsin

STORMWATER EVALUATION

Wisconsin Department of Transportation

Factor Sheet D-5

Alternative 2A Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. Indicate whether the affected area may cause a discharge or will discharge to the waters of the state (Trans 401.03).

Special consideration should be given to areas that are sensitive to water quality degradation. Provide specific recommendations on the level of protection needed.

☐ No water special natural resources are affected by the alternative.
☒ Yes - Water special natural resources exist in the project area.
- ☒ River/stream
- ☒ Wetland
- ☐ Lake
- ☐ Endangered species habitat
- ☐ Other – Describe

_____

2. Indicate whether circumstances exist in the project vicinity that require additional or special consideration, such as an increase in peak flow, total suspended solids (TSS) or water volume.

☐ No additional or special circumstances are present.
☒ Yes - Additional or special circumstances exist. Indicate all that are present.

☐ Areas of groundwater discharge	☐ Areas of groundwater recharge
☐ Stream relocations	☐ Overland flow/runoff
☐ Long or steep cut or fill slopes	☐ High velocity flows
☐ Cold water stream	☐ Impaired waterway
☐ Large quantity flows	☐ Exceptional/outstanding resource waters
☐ Increased backwater	

☒ Other - Describe any unique, innovative, or atypical stormwater management measures to be used to manage additional or special circumstances.

Total Maximum Daily Load TMDLs developed for the Rock River basin require additional stormwater management practices to increase total suspended solids and total phosphorus removal rates. A TMDL determines the maximum amount of pollutant that a water body is capable of assimilating while continuing to meet the existing water quality standards. The reduction rates vary throughout the Rock River basin, and are described in the I-39/90 Corridor Design Manual, Chapter 19. This manual was developed from the FDM and WisDOT Regional and Central Office staff to document the design criteria established for I-39/90 corridor that should be used by all I-39/90 design staff involved in hydraulic analysis of bridges, culverts or storm sewers along the mainline, side roads, and at interchanges.

3. Describe the overall stormwater management strategy to minimize adverse effects and enhance beneficial effects.

The overall stormwater strategy for this project is to use the available land within the proposed right-of-way to provide stormwater treatment and conveyance. The strategies used to address the TRANS 401 requirements and the TMDL requirements for the Rock River drainage basin include grass swales parallel to the proposed highway where there is adequate room, grass filter strips along the highway embankments, and infiltration fields where practical and appropriate. Additional measures such as wet detention ponds will be considered where maintenance, right-of-way and airport proximity concerns allow.

4. Indicate how the stormwater management plan will be compatible with fulfilling Trans 401 requirements.

WisDOT will follow Wis. Adm. Code Trans 401 and the DNR/DOT Cooperative Agreement for post construction stormwater requirements and standards. Stormwater runoff from the proposed roadway improvements will meet the 40% Total Suspended Solids reductions for areas outside of Municipal Separate Storm Sewer System (MS4) areas in

the drainage basin. These reductions will be met through the design of vegetative swales and filter strips. Post construction peak flow rates typically will be the same or lower than preconstruction peak flow rates by increasing the time of concentration of the runoff coming from our facilities through the use of swale treatment. Areas of the corridor that are within MS4 areas, in the cities of Madison, Janesville and Beloit, must also conform to the requirements developed from the Rock River Basin TMDL. The TSS and total Phosphorus loadings developed for these areas will be reduced through the use of grass swales, filter strips (standard and enhanced), infiltration areas and other practices as appropriate.

5. Identify the stormwater management measures to be utilized.

- ☒ Swale treatment (parallel to flow) Trans 401.106(10)
- ☒ Vegetated filter strips (perpendicular to flow)
- ☐ Constructed storm water wetlands
- ☒ Buffer areas – Trans 401.106(6)

Describe - if needed for floodplains

- ☐ In-line storm sewer treatment, such as catch basins, non-mechanical treatment systems.
- ☒ Detention/retention basins – Trans 401.106(6)(3)
- ☐ Distancing outfalls from waterway edge
- ☒ Infiltration – Trans 401.106(5)
- ☒ Other

Enhanced filter strips

6. Indicate whether any Drainage District may be affected by the project.

- ☒ No - None identified
- ☐ Yes

Has initial coordination with a drainage board been completed?

- ☐ No - Explain _____
- ☐ Yes - Discuss results –

7. Indicate whether the project is within WisDOT's Phase I or Phase II stormwater management areas.

Note: See Procedure 20-30-1, Figure 1, Attachment A4, the Cooperative Agreement between WisDOT and WisDNR. Contact Regional Stormwater/erosion Control Engineer if assistance in needed to complete the following:

- ☐ No - the project is outside of WisDOT's stormwater management area.
- ☒ Yes - The project affects one of the following and is regulated by a WPDES stormwater discharge permit, issued by the WisDNR:
  - ☐ A WisDOT storm sewer system, located within a municipality with a population greater than 100,000.
  - ☒ A WisDOT storm sewer system located within the area of a notified owner of a municipal separate storm sewer system.
  - ☒ An urbanized area, as defined by the U.S. Census Bureau, NR216.02(3).
  - ☐ A municipal separate storm sewer system serving a population less than 10,000.

8 Has the effect on downstream properties been considered?

- ☐ No
- ☒ Yes - Coordination is in process.

9. Are there any property acquisitions required for storm water management purposes?

- ☒ No
- ☐ Yes - Complete the following:
  - ☐ Safety measures, such as fencing are <u>not</u> needed for potential conflicts with existing and expected surrounding land use.
  - ☐ Safety measures <u>are</u> needed for potential conflicts with existing and expected surrounding land use. Describe:

EROSION CONTROL EVALUATION

Wisconsin Department of Transportation

Factor Sheet D-6

Alternative 2A, Modified	Total Length of Center Line of Existing Roadway – 4.6 miles Length of This Alternative – 4.6 miles
Preferred ☒ Yes ☐ No ☐ None identified	

1. Provide a brief description of existing and proposed slopes in the project area, both perpendicular and longitudinal to the project. Include both existing and proposed slope length, percent slope and soil types.

Existing: The existing side slope ratios within the project area vary from 2-foot horizontal:1-foot vertical behind beam guard to 6-foot horizontal:1-foot vertical within portions of the interstate clear zone. Fill areas within the existing cloverleaf interchange reach a maximum length of 50' (28' of fill) and fill areas approaching the Canadian Pacific Railroad crossing reach a maximum length of 65' (35' of fill). Both of these locations incur the steepest perpendicular slopes of 2-foot horizontal:1-foot vertical. There are no significant cut slopes. Longitudinal slopes are minimal with ditch grades less than 3%.

Proposed: The proposed side slope ratios along I-39 and I-43 will range between 4-foot horizontal:1-foot vertical and 6-foot horizontal:1-foot vertical within the 36' clear zone. Slopes outside of the clear zone will be no steeper than 3-foot horizontal:1-foot vertical with exceptions to those behind barrier or beam guard where the slopes will be no steeper than 2-foot horizontal:1-foot vertical. Fill slope lengths will vary, with a maximum of 80' (45' of fill) in length. Cut slopes will be limited to 3-foot horizontal:1-foot vertical and the lengths will vary to 50'. Longitudinal slopes will vary, up to a maximum of 5%.

Soil Types: The predominant soil type for the interchange area is Plano Silt Loam, Hydraulic Soils Classification B.

2. **Indicate all natural resources to be affected by the proposal that are sensitive to erosion, sedimentation, or waters of the state quality degradation and provide specific recommendations on the level of protection needed.**

☐ No - there are no sensitive resources affected by the proposal.
☒ Yes - Sensitive resources exist in or adjacent to the area affected by the project.
- ☒ River/stream
- ☐ Lake
- ☒ Wetland
- ☐ Endangered species habitat
- ☐ Other - Describe _____

3. Are there circumstances requiring additional or special consideration?

☒ No - Additional or special circumstances are not present.
☐ Yes - Additional or special circumstances exist. Indicate all that are present.
- ☐ Areas of groundwater discharge
- ☐ Overland flow/runoff
- ☐ Long or steep cut or fill slopes
- ☐ Areas of groundwater recharge (fractured bedrock, wetlands, streams)
- ☐ Other - Describe any unique or atypical erosion control measures to be used to manage additional or special circumstances_____

4. Describe overall erosion control strategy to minimize adverse effects and/or enhance beneficial effects.

Standard WisDOT erosion control methods will be used during construction as per WisDOT Standard Specifications for Highway and Structure Construction. Erosion and sediment control will be part of the project's design and construction as set forth in Wisconsin Administrative Code – Chapter TRANS 401 and the WisDOT/WDNR Cooperative Agreement. The erosion control plan and special specifications will be reviewed by WDNR prior to the 90% plan submittal as part of the 401 Water Quality Certification process. An Erosion Control Implementation Plan (ECIP) will be prepared by the contractor for review by the WDNR and for approval by WisDOT prior to construction. The erosion control plan will include, wherever practical, combinations of erosion control practices in series so that if one practice fails, the next practice downstream is in place to trap the sediment discharged from the first practice.

5. Erosion control measures reached consensus with the appropriate authorities as indicated below:

- ☒ WisDNR
- ☐ County Land Conservation Department
- ☐ American Indian Tribe
- ☐ US Army Corps of Engineers

Note: All erosion control measures (i.e., the Erosion Control Plan) shall be coordinated through the WisDOT-WisDNR liaison process and TRANS 401. WisDNR's concurrence is not forthcoming without an Erosion Control Plan. In addition, TRANS 401 requires the contractor to prepare an Erosion Control Implementation Plan (ECIP), which identifies timing and staging of the project's erosion control measures. The ECIP must be submitted to the WisDNR and to WisDOT 14 days prior to the preconstruction conference (Trans401.08(1)) and must be approved by WisDOT before implementation.

6. **Identify the temporary and permanent erosion control measures to be utilized on the project. Consult the FDM, Chapter 10, and the Products Acceptability List (PAL).**

- ☒ Minimize the amount of land exposed at one time
- ☒ Temporary seeding
- ☒ Silt fence
- ☒ Ditch checks
- ☒ Erosion or turf reinforcement mat
- ☒ Ditch or slope sodding
- ☒ Soil stabilizer
- ☒ Inlet protection
- ☐ Turbidity barriers
- ☐ Temporary settling basin
- ☒ Mulching
- ☒ Other - Describe _____
- ☒ Detention basin
- ☒ Vegetative swales
- ☐ Pave haul roads
- ☒ Dust abatement
- ☒ Rip rap
- ☒ Buffer strips
- ☐ Dewatering – Describe method
- ☐ Silt screen
- ☐ Temporary diversion channel
- ☒ Permanent seeding