

ENVIRONMENTAL EVALUATION OF FACILITIES DEVELOPMENT ACTIONS

Wisconsin Department of Transportation Project Summary - Basic Sheet 1 Revised March 2013

Project ID 1020-00-06 Construction ID To be determined (TBD)	Project Termini IH 94 / USH 12 Interchange	Funding Sources - Check all that apply <input checked="" type="checkbox"/> Federal <input checked="" type="checkbox"/> State <input type="checkbox"/> Local								
Route Designation (if applicable) IH 94 and USH 12 National Highway System (NHS) Route <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Nearest Community Town of Hudson City of Hudson	Estimated Project Cost and Funding Source (state and/or fed). Year of Expenditure (YOE) dollars incl. delivery cost \$ 19.2 million (2014 dollars) Real Estate Acquisition Portion of Estimated Cost \$ 1.0 million (2014 dollars) Utility relocation Portion of Estimated Cost Utility relocation costs to be determined in design								
Project Title IH 94 Hudson Area Interchange Study, USH 12 Interchange										
County St. Croix County		Right of Way Acquisition <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 70%;"></th> <th style="width: 30%;">Acres</th> </tr> <tr> <td>Fee</td> <td>10.4</td> </tr> <tr> <td>TLE</td> <td>*</td> </tr> <tr> <td>PLE</td> <td>*</td> </tr> </table> * Easements to be determined in design		Acres	Fee	10.4	TLE	*	PLE	*
	Acres									
Fee	10.4									
TLE	*									
PLE	*									
Bridge Number(s), if applicable B-55-151 (USH 12 over IH 94)	Scheduled start date (Operational Planning Meeting (OPM), or Scoping Meeting) 2012 (Interchange study start date) 2014 (Project start date) 2025 (Anticipated construction start)									

Functional Classification of Existing Route (FDM 3-5-2)	Urban	Rural
Freeway/Expressway (IH 94)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Principal Arterial (USH 12)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Minor Arterial (CTH U)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Major Collector		<input type="checkbox"/>
Minor Collector		<input type="checkbox"/>
Collector	<input type="checkbox"/>	
Local	<input type="checkbox"/>	<input type="checkbox"/>
No Functional Class	<input type="checkbox"/>	<input type="checkbox"/>

WisDOT Project Classification (FDM 3-5-2)	
Resurfacing	<input type="checkbox"/>
Pavement Replacement	<input type="checkbox"/>
Reconditioning	<input type="checkbox"/>
Expansion	<input checked="" type="checkbox"/>
Bridge Rehabilitation	<input type="checkbox"/>
Bridge Replacement	<input type="checkbox"/>
A "Majors" Project (there are both state & federal majors)	<input type="checkbox"/>
SHRM	<input type="checkbox"/>
Reconstruction	<input type="checkbox"/>
Preventive Maintenance	<input type="checkbox"/>
Safety	<input type="checkbox"/>
Other, Describe (Interchange Preservation)	<input checked="" type="checkbox"/>

☐ FHWA Categorical Exclusion, Type 2c

☒ FHWA Environmental Assessment. No significant Impacts Indicated by Initial Assessment.

Bruce Danner SRF Consulting Group 4/2/2015 Sr. Assoc.
 (Signature) (Company/Org.) (Date) (Title)

 (Signature) (Date) (Title)
 (Director, Bureau of Technical Services)

 (Signature) (Company/Org.) (Date) (Title)

 (Signature) (Date) (Title)
 (☐ Region ☐ Aeronautics ☐ Rails & Harbors)

 (Signature) (Date) (Title)
 (☐ 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:

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

B Has potential to significantly affect the quality of the human environment ☐ Environmental Impact Statement (EIS) Required

 (Signature) (Company/Org.) (Date) (Title)

 (Signature) (Date) (Title)
 (Director, Bureau of Technical Services)

 (Signature) (Company/Org.) (Date) (Title)

 (Signature) (Date) (Title)
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Table of Contents

Basic and Factor Sheets

Project Summary – Basic Sheet 1	1
Purpose and Need – Basic Sheet 2	3
Agency and Tribal Coordination – Basic Sheet 3	18
Environmental Factors Matrix – Basic Sheet 4	20
Alternatives Comparison Matrix – Basic Sheet 5	25
Traffic Summary Matrix – Basic Sheet 6	27
EIS Significance Criteria – Basic Sheet 7	29
Environmental Commitments – Basic Sheet 8	30
Factor Sheet A-1 – General Economics Evaluation	33
Factor Sheet A-2 – Business Evaluation	34
Factor Sheet A-3 – Agricultural Evaluation	37
Factor Sheet B-1 – Community or Residential Evaluation	40
Factor Sheet C-1 – Wetlands Evaluation	42
Factor Sheet D-2 – Construction Stage Sound Quality Evaluation	46
Factor Sheet D-3 – Traffic Noise Evaluation	48
Factor Sheet D-4 – Hazardous Substances or Contamination Evaluation	55

Appendices

Appendix A:	Alternative Selection Report
Appendix B:	Figures
Appendix C:	Agency Correspondence
Appendix D:	Section 106 Documentation
Appendix E:	Indirect Effects Pre-Screening Worksheet
Appendix F:	Cumulative Impacts Pre-Screening Worksheet
Appendix G:	Agricultural Impact Statement (AIS)
Appendix H:	Environmental Justice
Appendix I:	Mobile Source Air Toxics (MSAT) Analysis

Purpose and Need - Basic Sheet 2

1. Purpose and Need

The purpose of the Interstate Highway (IH) 94 / U.S. Highway (USH) 12 Interchange Project is to officially map proposed improvements to the IH 94 / USH 12 interchange in order to address the following three needs:

- Interchange preservation
- Operations and mobility
- Land use / transportation planning and coordination

The Wisconsin Department of Transportation (WisDOT) would pursue official mapping and preservation of the IH 94 / USH 12 interchange through Wisconsin State Statute 84.295. Wis. Stat. 84.295 is a long-term official mapping and planning tool available to WisDOT to help protect and preserve right-of-way for future transportation needs. This proactive tool allows WisDOT to address safety, operations, mobility, and capacity issues in advance of impending long-term transportation needs. There is no immediate project or construction dollars programmed for the proposed IH 94 / USH 12 interchange improvements.

Project Location and Setting

Project Location

The IH 94 / USH 12 interchange is located in the Town of Hudson in St. Croix County, Wisconsin. The IH 94 / USH 12 interchange project area includes the IH 94 entrance and exit ramps, as well as USH 12 and County Trunk Highway (CTH) U from the Rodeo Drive / Brakke Drive intersection north of IH 94 to the CTH N intersection south of IH 94.

Project location maps are included in **Figure 1, Appendix B** (area location map); **Figure 2, Appendix B** (project location map); and **Figure 3, Appendix B** (project area map with aerial photography).

Existing Land Uses

Land uses adjacent to the IH 94 / USH 12 interchange consist primarily of commercial land uses with some agricultural and residential land uses in the southeast quadrant of the interchange. Commercial land uses are located in the northeast quadrant of the interchange, with industrial land uses located to east along the north side of I-94. Wetlands and wooded lands are also located within and adjacent to the project area. See **Figure 4, Appendix B** for an existing land use map and **Figure 8, Appendix B** for locations of delineated wetlands.

Existing Roadway Network

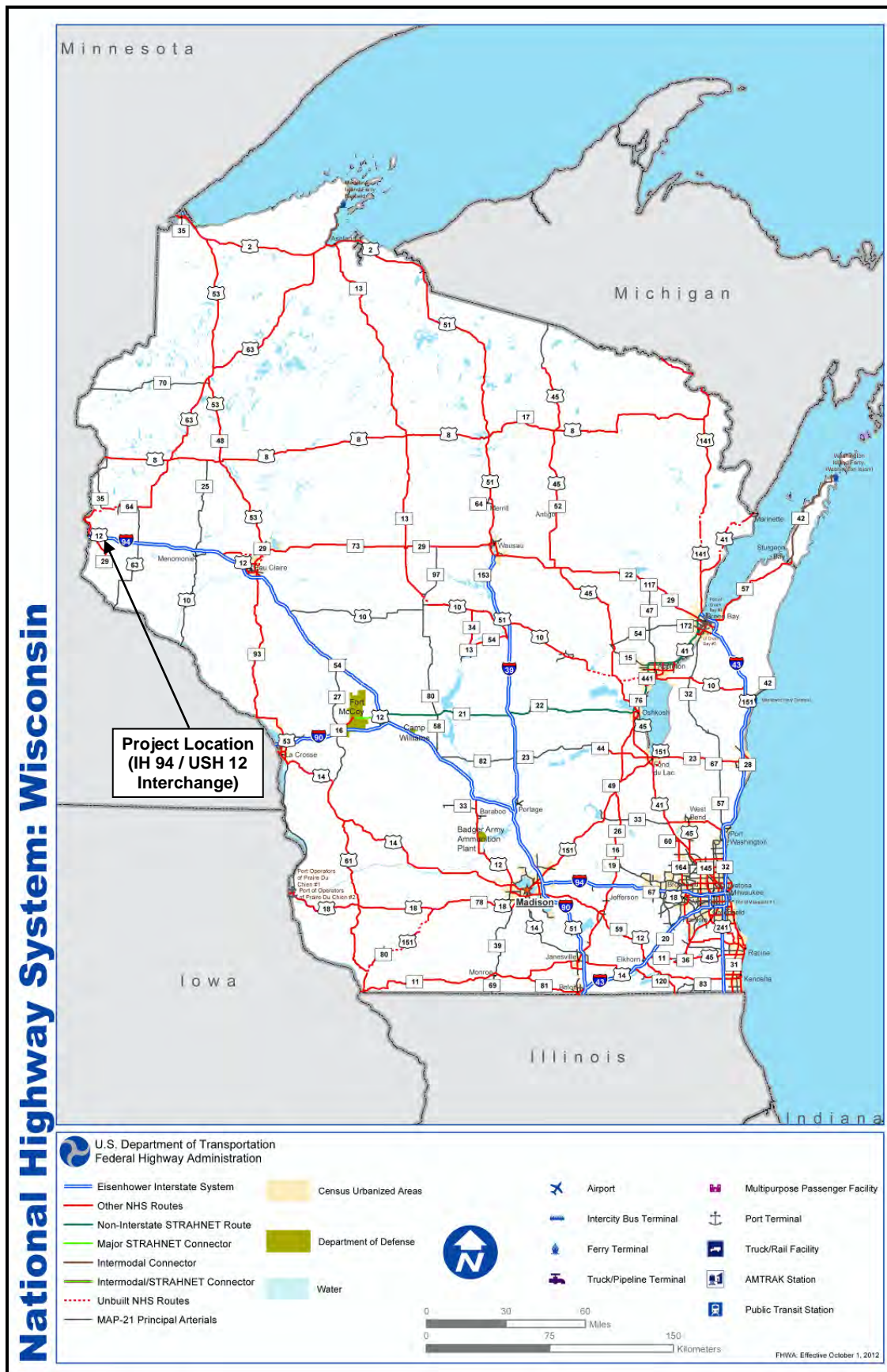
The existing roadway network within the project area includes IH 94, USH 12, and CTH U. IH 94 is an east-west divided principal arterial freeway that is designated as part of the National Highway System (NHS). USH 12 is an east-west principal arterial highway which extends north and west through the project area. USH 12 follows IH 94 west of the IH 94 / USH 12 interchange. CTH U is classified as a minor arterial highway and connects local roads to state and federal highways.

Background Information

Role of IH 94 and USH 12 in the Transportation System

IH 94 and USH 12 are both classified as principal arterial highways and have the primary purpose of providing interstate and interregional mobility. IH 94 currently carries approximately 93,000 ADT near the St. Croix River to approximately 49,000 ADT east of the USH 12 interchange. USH 12 carries approximately 12,200 ADT north of IH 94, whereas CTH U carries approximately 5,000 ADT south of IH 94. IH 94 and USH 12 both function as primary east / west routes through the center of the state and are National Highway System (NHS) routes (see **Exhibit 1**). IH 94 and USH 12 run parallel and concurrent with one another across the State of Wisconsin, from Hudson in the west to Madison in the southeast.

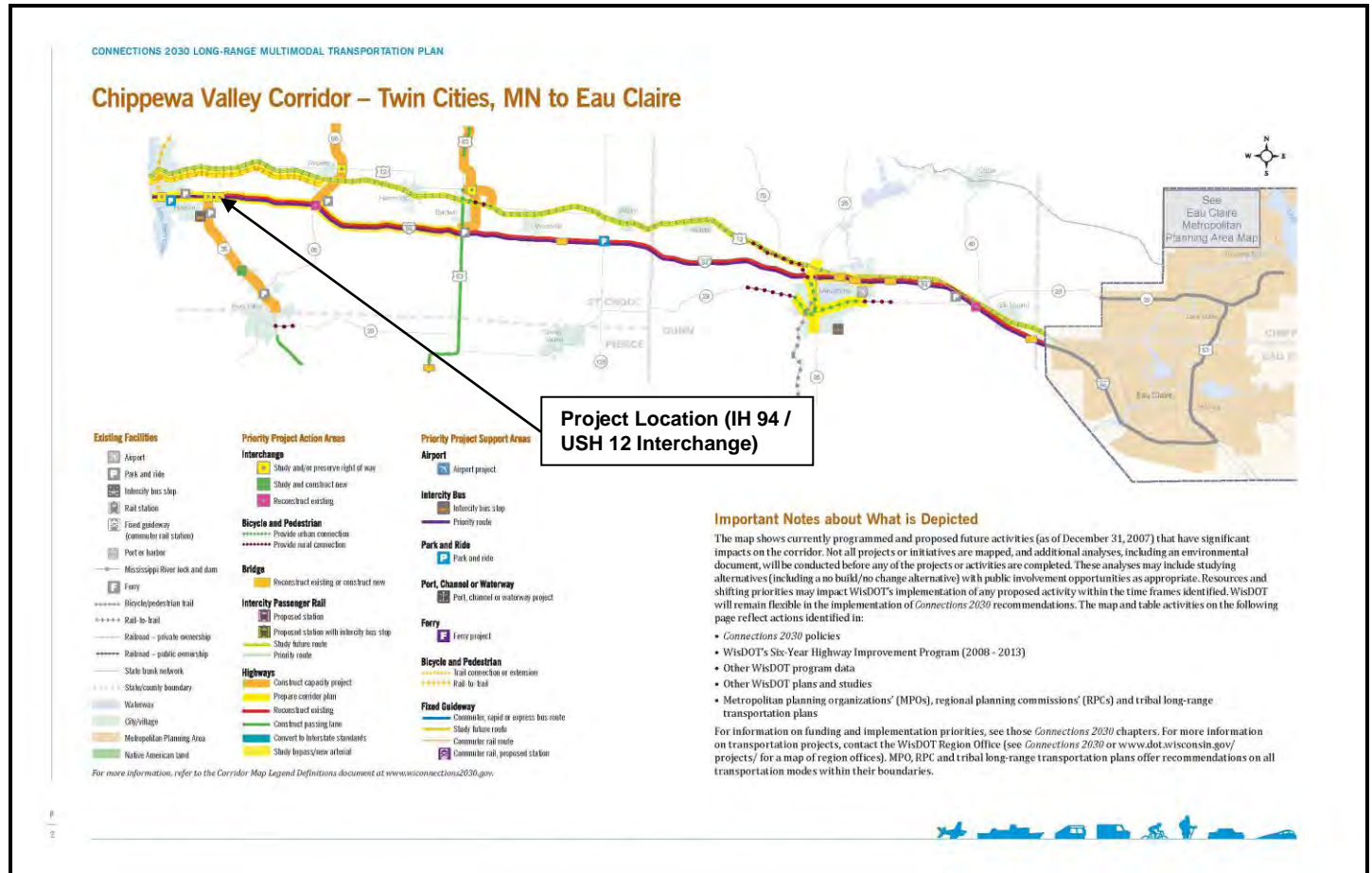
Exhibit 1: Wisconsin National Highway System (NHS) Routes



Source: US Department of Transportation. Federal Highway Administration. National Highway System accessed 2014-11-30 at http://www.fhwa.dot.gov/planning/national_highway_system/

IH 94 is designated as a backbone route in the WisDOT *Connections 2030* Plan. Southeast of Madison, USH 12 is designated as a connector route in the *Connections 2030* Plan. The Wisconsin *Connections 2030* routes provide multimodal system linkages, provide safe, dependable access to and from Wisconsin communities, and encourage regional and statewide economic development. The WisDOT *Connections 2030* Plan places a high priority in protecting highway investments that connect major economic/population centers and carry long-distance, statewide, and multi-state traffic. The Proposed Action is located along the 80-mile Chippewa Valley Corridor, which extends from the Minneapolis-St. Paul (Twin Cities) region in Minnesota to Eau Claire, Wisconsin as shown in **Exhibit 2** below.

Exhibit 2: Chippewa Valley Corridor (Twin Cities, MN to Eau Claire)



Source: Wisconsin Department of Transportation. *Connections 2030 Plan*. System-Level Priority Corridor Maps. Chippewa Valley Corridor – Twin Cities, MN to Eau Claire accessed 2014-12-01 at <http://www.dot.wi.gov/projects/state/docs/corridor-chippewa.pdf>

The importance of the IH 94 and USH 12 corridors go beyond *Connections 2030* and serving the west central, central, and southeast regions of Wisconsin. These corridors through Wisconsin function as important connecting links for commerce, freight, tourism, and defense between Illinois, Indiana, Michigan, Minnesota, the Dakotas, and beyond. The IH 94 corridor also serves as a significant connecting route to the major east-west STH 29 corridor, an NHS highway that connects eastern Wisconsin (Fox Valley) with the metropolitan areas of Wausau and Eau Claire (Chippewa Valley), and the Minneapolis-St. Paul region of Minnesota. The USH 12 corridor starts in Michigan and runs approximately 2,491 miles west to its terminus in Washington State, which gives it national importance. As stated above, it is a reliever route that runs parallel to and concurrent with portions of IH 94 along its course through the State of Wisconsin.

IH 94 Hudson Area Interchange Study

The IH 94 Hudson Area Interchange Study was initiated by the WisDOT Northwest Region in 2012 and completed in 2014. The purpose of this study was to focus on traffic operations at two interchanges in the Hudson area: the IH 94 / Carmichael Road interchange and the IH 94 / USH 12 interchange. Specifically, the study identified future (2035) operational problems at the IH 94 / USH 12 interchange that would result in traffic queues spilling back from the interchange onto IH 94, affecting operations on the Interstate system.

Logical Termini

The logical terminus for the proposed action is the IH 94 / USH 12 interchange. Project study limits along IH 94 extend from approximately 2,300 feet west of the IH 94 / USH 12 interchange to approximately 2,300 feet east of the interchange. Project study limits along USH 12 and CTH U extend from the Brakke Drive / Rodeo Drive intersection north of IH 94 to the CTH N intersection south of IH 94.

The IH 94 Hudson Area Interchange Study identified intersection improvements that would be needed in the future at the CTH U / CTH N intersection, south of the IH 94 / USH 12 interchange. These intersection improvements are needed to accommodate future traffic volumes on CTH U and CTH N as a result of growth within the project area, and are not connected to any of the proposed improvements identified for the IH 94 / USH 12 interchange. Alternatives considered as part of the proposed action terminate the CTH U / CTH N intersection.

Purpose of the Proposed Action

The purpose of the Proposed Action is to officially map roadway enhancements at the IH 94 / USH 12 interchange that will provide for long-term operational and mobility improvements.

Need for the Proposed Action

The need for the Proposed Action can be divided into the following three components:

- Interchange preservation
- Operations and mobility
- Land use / transportation planning and coordination

Interchange Preservation

There is a need to identify and preserve locations for future improvements at the IH 94 / USH 12 interchange. Without proactive interchange preservation, local development could occur on land needed for future interchange improvements. If this local development were to occur, the range of future options to avoid undesirable social, economic, and environmental (SEE) consequences would be diminished. For example, right of way and relocation costs could be greatly reduced by averting development in areas that have been mapped for interchange preservation. If not mapped for interchange preservation, options that would avoid local development could subsequently result in substantial impacts to natural resources such as floodplains, wetlands, streams, public lands, and wildlife habitat, or impacts to historic and archaeological sites. Conversely, options to avoid impacts to natural and cultural resources would likely result in substantial right of way impacts to local development, homes, businesses and farms. Through the implementation of Wis. Stat. 84.295, right of way preservation would help protect and preserve the IH 94 / USH 12 interchange through a proactive, rather than a reactive, management approach.

Operations and Mobility

St. Croix County and the communities surrounding the IH-94 / USH 12 interchange are growing rapidly. According to the St. Croix County *2012-2035 Comprehensive Plan* (Adopted November 5, 2012)¹, St. Croix County is expected to experience an approximately 63 percent in population growth between 2010 and 2030, the City of Hudson is expected to experience an approximately 81 percent increase in population, and the Town of Hudson is expected to experience an approximately 80 percent increase in population. This population growth will result in an increase in travel demand on project area roadways, including the IH 94 / USH 12 interchange. Average daily traffic volumes on IH 94 and USH 12 are projected to increase by approximately 62 percent to 96 percent from existing (2012) to future (2035) No Build conditions (see **Table 1**).

¹ St. Croix County, Wisconsin 2012-2035 Comprehensive Plan. Adopted November 5, 2012. Population & Demographics. Volume 2-2 accessed at http://www.co.saint-croix.wi.us/index.asp?Type=B_BASIC&SEC={193869EB-C649-48C6-A778-A6026605796B}.

Table 1: Average Daily Traffic Volumes – Existing (2012) and Year 2035

Location	Average Daily Traffic Volumes (VPD)		
	Existing (Year 2012)	Year 2035 No Build	Percent Increase
USH 12			
North of IH 94	15,000	29,400	96%
CTH U			
South of IH 94	5,000	16,300	226%
IH 94			
West of USH 12	52,400	85,000	62%
East of USH 12	39,200	64,600	65%

VPD = vehicles per day

A traffic operations analysis was completed for the a.m. and p.m. peak hours at the IH-94 / USH 12 ramp terminal intersections to determine how traffic operates at these locations under existing (2012) and future (2035) No Build Alternative conditions. The analysis results identify a Level of Service (LOS), which indicates how well an intersection is operating. The LOS results are based on average delay per vehicle. Intersections are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS A through C is generally perceived to be acceptable to drivers. LOS D and LOS E indicate that an intersection is operating at, or very near, its capacity and that drivers experience considerable delays. LOS F indicates an intersection where demand exceeds capacity and drivers experience substantial delays.

Operations analysis results for the IH-94 / USH 12 ramp terminal intersections are shown below in **Table 2**. The existing IH 94 / USH 12 interchange is unable to support future traffic demands, as poor levels of service (LOS E) are expected during the a.m. and p.m. peak periods under the future No Build Alternative. Indeed, the p.m. peak hour traffic volumes at the IH 94 / USH 12 interchange are forecast to grow to a point that the eastbound ramp intersection will not provide enough capacity to prevent traffic queues from backing up on the exit ramp into the eastbound IH 94 auxiliary lane. Once this happens, traffic operations on eastbound IH-94 are also expected to deteriorate, operating at an unacceptable LOS F to the west of the IH 94 / USH 12 interchange.

Table 2: Existing (2012) and Year 2035 No Build LOS Results

Location	AM Peak Hour LOS		PM Peak Hour LOS	
	Existing (Year 2012)	Year 2035 No Build ⁽¹⁾	Existing (Year 2012)	Year 2035 No Build ⁽¹⁾
USH 12 / Westbound IH 94 Ramps Intersection	A	E	A	C
USH 12 / Eastbound IH 94 Ramps Intersection	B	E	C	E

⁽¹⁾ Level of service results under the future (2035) no build condition assumes a traffic signal at the north ramp terminal intersection.

In addition to the effects of increasing traffic volumes, there are two other considerations that affect existing and future traffic operations at the IH-94 / USH 12 interchange:

- The IH 94 / USH 12 interchange currently supports a large amount of heavy trucks. Approximately 10 to 20 percent of the total traffic at the IH-94 / USH 12 interchange is heavy trucks. A truck stop / gas station is located in the northeast quadrant of the interchange, and this business attracts numerous trips (heavy trucks and passenger vehicles) to and from the Interstate. The existing grades at the eastbound ramp intersection make it difficult for large trucks to accelerate when stopped at the ramp intersection. The additional time needed for heavy trucks to accelerate and clear through the east ramp intersection contribute to the delays and traffic queues at this location.
- The southeast quadrant of the IH-94 / USH 12 interchange is currently undeveloped. Other quadrants of the IH 94 / USH 12 interchange are developed in commercial uses, with additional development anticipated. According to the St. Croix County 2012-2035 Comprehensive Plan², land adjacent to the IH 94 / USH 12 interchange is planned for future commercial uses. Reserve capacity is needed at the interchange to accommodate traffic generated by future development that will use this interchange as access to IH 94.

² St. Croix County, Wisconsin 2012-2035 Comprehensive Plan. Adopted November 5, 2012. St. Croix County Future Land Use Map 2035 accessed at http://www.co.saint-croix.wi.us/index.asp?Type=B_BASIC&SEC={193869EB-C649-48C6-A778-A6026605796B}.

Land Use / Transportation Planning and Coordination

Local land development has the potential to influence the future functionality of the IH 94 / USH 12 interchange. Existing land uses adjacent to the IH 94 / USH 12 interchange include commercial, industrial, and agricultural uses. Residential uses are located south of the interchange near the CTH U / CTH N intersection, and east of the interchange between IH 94 and CTH N. Land development pressure could gradually convert some areas to more intensive uses, particularly undeveloped or developing areas in the northwest and southeast quadrants of the IH 94 / USH 12 interchange.

Official mapping provides certainty to property owners and local communities regarding the future rights of way necessary for IH 94 / USH 12 improvements. Mapping allows landowners, the public, businesses, and local agencies to plan their future in ways that are compatible with anticipated transportation improvements. Through planning and coordination, disruptions to property owners and costly relocations would be minimized. Without the planning framework that official mapping provides, local units of government lack the knowledge needed to adequately plan land use that is compatible with the future transportation needs of the corridor.

2. Summary of Alternatives

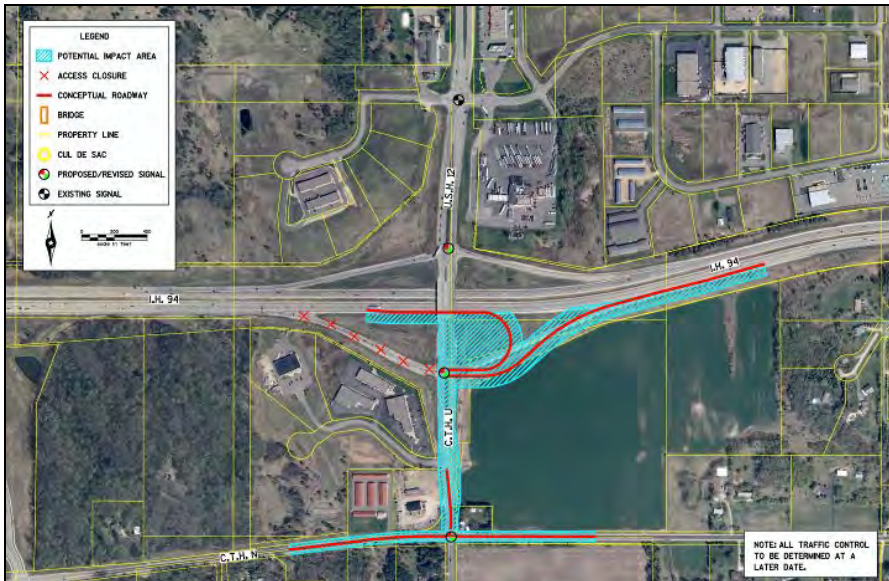
Interchange Concepts – I-94 Hudson Area Interchange Study

Seven different interchange concepts were evaluated for the IH 94 / USH 12 interchange as part of the I-94 Hudson Area Interchange Study (Interchange Study), ranging from intersection improvements at the ramp terminal intersections to a full diamond interchange with loops in the different quadrants of the IH 94 / USH 12 interchange. These concepts were evaluated based on their ability to address traffic operations problems, impacts on heavy truck operations, and impacts to properties surrounding the IH 94 / USH 12 interchange. A detailed discussion of the seven interchange concepts considered for the IH 94 / USH 12 interchange as part of the Interchange Study is included in the Alternatives Selection Report (ASR) in **Appendix A**, and is summarized below.



Concept A (Intersection Improvements):

Concept A proposes construction of additional turn lanes at the ramp terminal intersections and other roadway improvements that do not impact the USH 12 bridge over IH 94 or the existing interchange configuration. Concept A would not require additional highway right-of-way.



Concept B (Partial Diamond with Loop):

Concept B proposes construction of an eastbound IH 94 to USH 12 / CTH U loop ramp in the southeast quadrant of the interchange. This loop helps to reduce conflicts at the south ramp intersection while providing an easier maneuver to USH 12 and CTH U for the large amount of trucks that use the interchange. Under Concept B, the ramp in the southwest quadrant of the interchange would be removed. Concept B would not require widening of the USH 12 bridge over IH 94.



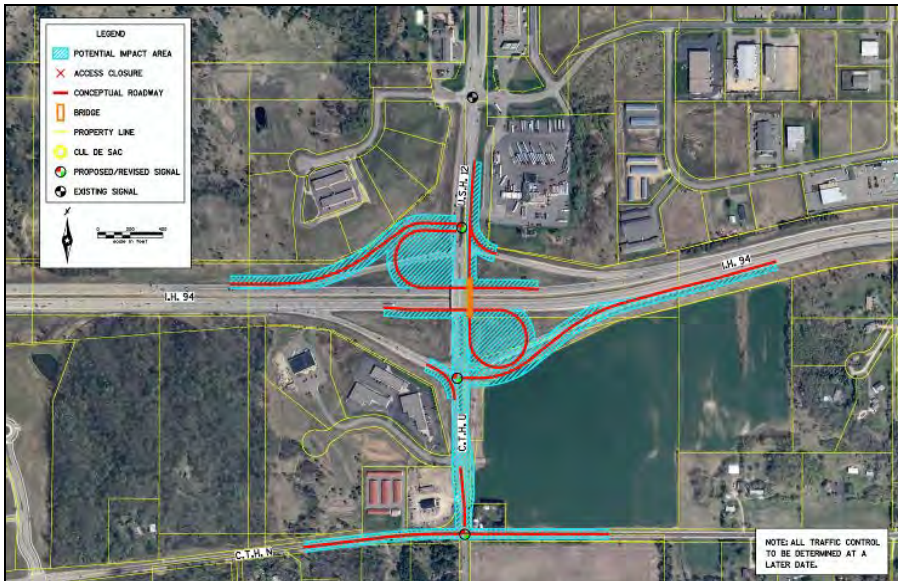
Concept C (Full Diamond with Loop):

Concept C proposes construction of an eastbound IH 94 to USH 12 / CTH U loop ramp in the southeast quadrant of the interchange. Under Concept C, the existing ramp in the southwest quadrant of the interchange would be maintained for eastbound IH 94 to southbound CTH U traffic. This reduces the traffic conflicts at the south ramp intersection. Concept C does not require widening of the USH 12 bridge over IH 94.



Concept D (Full Diamond with Loop):

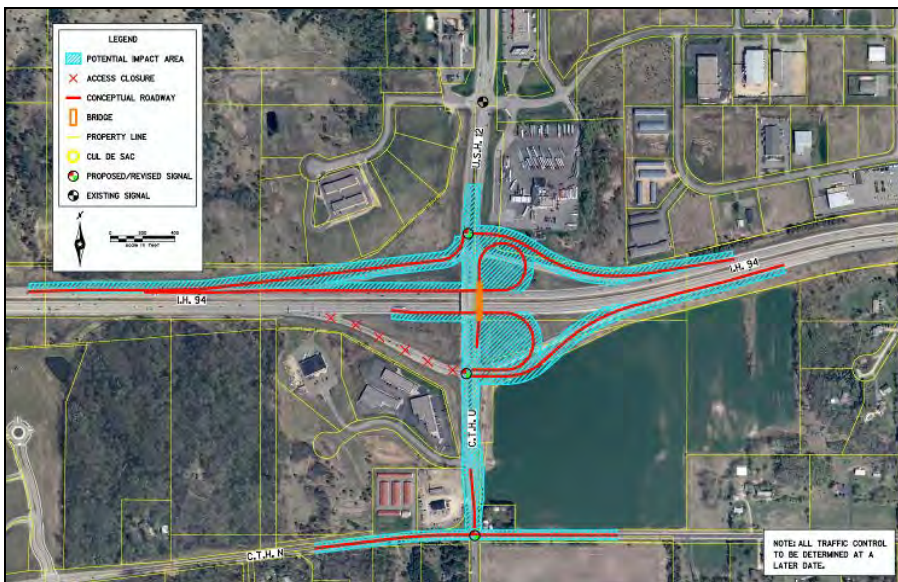
Concept D proposes construction of an eastbound IH 94 to USH 12 / CTH U loop ramp in the southeast quadrant of the interchange, and maintains the existing ramp in the southwest quadrant of the interchange. Concept D allows the eastbound IH 94 to northbound USH 12 loop ramp in the southeast quadrant to be a free flow movement for eastbound to northbound traffic. Concept D would require the widening of the USH 12 bridge over IH 94.



Concept E

(Full Diamond with Two Loops):

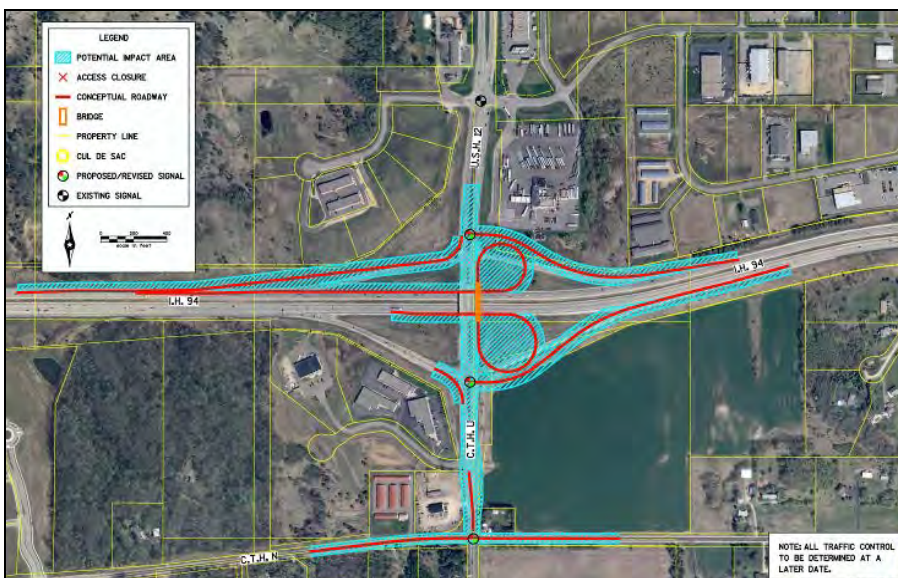
Concept E proposes construction of an eastbound IH 94 to USH 12 / CTH U loop ramp in the southeast quadrant of the interchange, maintains the existing ramp in the southwest quadrant of the interchange, and adds a westbound IH 94 to southbound CTH U loop ramp in the northwest quadrant of the interchange. This concept minimizes conflicts at the north ramp intersection and provides the most reserve capacity for future traffic. Concept E would require the widening of the USH 12 bridge over IH 94.



Concept F

(Partial Diamond with Two Loops):

Concept F proposes construction of an eastbound IH 94 to USH 12 / CTH U loop ramp in the southeast quadrant of the interchange, and provides a northbound USH 12 / CTH U to westbound IH 94 loop ramp in the northeast quadrant of the interchange to minimize conflict at the north ramp intersection. Concept F would remove the existing ramp in the southwest quadrant of the IH 94 / USH 12 interchange. Concept F would also require the widening of the USH 12 bridge over IH 94.



Concept G

(Full Diamond with Two Loops):

Concept G proposes construction of an eastbound IH 94 to USH 12 / CTH U loop ramp in the southeast quadrant of the interchange and maintains the existing ramp in the southwest quadrant of the interchange. Concept G also provides a northbound USH 12 / CTH U to westbound IH 94 loop ramp in the northeast quadrant of the interchange to minimize conflicts at the north ramp intersection. Concept G would require the widening of the USH 12 bridge over IH 94.

Five of the IH 94 / USH 12 interchange concepts were dismissed from further consideration as part of the Interchange Study as described below (see also the ASR in **Appendix A**). Two of the concepts, Concept D (full diamond with loop) and Concept E (full diamond with two loops) were identified for further evaluation as Build Alternatives in this Environmental Assessment.

- Concept A would not improve traffic operations at the IH 94 / USH 12 interchange compared to the other interchange concepts considered. With Concept A, the south ramp terminal intersection would operate near capacity (LOS D) during the p.m. peak hour under future (2035) conditions. All other concepts considered for the IH 94 / USH 12 interchange would provide acceptable peak hour traffic operations (LOS C or better) at the ramp terminal intersections under future (2035) conditions.
- Concepts B and F would require a two-lane exit loop in the southeast quadrant in order to achieve acceptable operations at the IH 94 / USH 12 interchange. A two-lane exit loop is a non-standard design.
- Concept C does not fully address heavy truck issues at the IH 94 / USH 12 interchange. Under Concept C, eastbound IH 94 to northbound USH 12 traffic would turn right at the south ramp traffic signal into existing travel lanes on the USH 12 bridge. This could create potential operational issues on the loop ramp as a result of the additional time required for heavy trucks to accelerate from a stopped condition.
- Concept G creates a weave on the USH 12 bridge between the northbound USH 12 to westbound IH 94 and the eastbound IH 94 to northbound USH 12 movements. This could result in potential issues on USH 12 within the interchange area.

No Build Alternative

The No Build Alternative would include continued maintenance of the existing interchange. A traffic signal would be constructed at the westbound IH 94 / USH 12 ramp terminal intersection on the north side of the interchange under the No Build Alternative. Official mapping of interchange improvements needed to address operational problems would not occur. As shown above in **Table 2**, ramp terminal intersections at the IH 94 / USH 12 interchange are expected to operate at unacceptable levels of service under future (2035) No Build Alternative conditions. Poor intersection operations under the No Build Alternative would result in traffic queues that spill back onto eastbound IH 94, resulting in poor traffic operations on the Interstate.

The No Build Alternative does not meet the purpose and need for the project; however, it serves as a baseline for a comparison of impacts related to the preferred alternative.

Build Alternatives

Two of the concepts identified in the I-94 Hudson Area Interchange Study (Concept D and Concept E) were identified for further evaluation as Build Alternatives in this Environmental Assessment. Both of these interchange designs utilize a standard diamond interchange configuration with loops in one or more of the interchange quadrants. The evaluation of the two IH 94 / USH 12 interchange Build Alternatives is described below.

Build Alternative 1 (Full Diamond with Loop)

Build Alternative 1 proposes construction of an eastbound IH 94 to USH 12 / CTH U loop ramp in the southeast quadrant of the IH 94 / USH 12 interchange and maintains the existing exit ramp in the southwest quadrant of the interchange for the eastbound IH 94 to southbound CTH U movement. Under Build Alternative 1, the eastbound IH 94 to northbound USH 12 loop ramp in the southeast quadrant bypasses the south ramp terminal intersection and allows for a free flow movement for eastbound to northbound traffic. The USH 12 bridge would be widened to provide for an additional northbound USH 12 travel lane that would extend to the north to the USH 12 / Rodeo Drive / Brakke Drive intersection. The entrance ramp to eastbound IH 94 would be reconstructed to the south of its existing alignment to accommodate the loop ramp in the southeast quadrant of the interchange. Build Alternative 1 is illustrated in **Figure 5, Appendix A**.

Build Alternative 1 would address the purpose and need of the project. Ramp terminal intersections are projected to operate at an acceptable LOS C or better under future (2035) conditions with Build Alternative 1. Build Alternative 1 addresses considerations related to heavy trucks by providing a free-flow movement from eastbound IH 94 to northbound USH 12. Under Build Alternative 1, all vehicles, including heavy trucks, would exit eastbound IH 94 using the loop ramp and continue into the additional lane on northbound IH 94 without stopping at the south ramp terminal intersection. Build Alternative 1 would require right of way acquisition in the southeast quadrant of the interchange to accommodate the proposed loop ramp and entrance ramp to eastbound IH 94.

Build Alternative 1 was not identified as the Preferred Alternative because it does not provide for additional reserve capacity to accommodate future traffic growth beyond year 2035. The southeast quadrant of the IH 94 / USH 12 interchange is currently undeveloped and is in agricultural uses. This quadrant of the IH 94 / USH 12 interchange is planned for future commercial uses as described in the St. Croix County Comprehensive Plan. Commercial land uses are also planned along the south side of IH 94 between the State Trunk Highway (STH) 35 and USH 12 interchanges. Residential land uses are planned south of CTH N and to the west of the IH 94 / USH 12 interchange. Additional traffic destined to areas south of the interchange from westbound IH 94 could result in operational problems at the north ramp terminal intersection, and result in traffic queues that could extend along the exit ramp onto westbound IH 94.

Build Alternative 2 (Full Diamond with Two Loops) (Preferred Alternative)

Build Alternative 2 proposes construction of an eastbound IH 94 to USH 12 / CTH U loop ramp in the southeast quadrant of the interchange and maintains the existing exit ramp in the southwest quadrant of the interchange for the eastbound IH 94 to southbound CTH U movement. The USH 12 bridge over IH 94 would be widened to accommodate the loop ramp from eastbound IH 94, and a proposed additional lane along northbound USH 12 to the Rodeo Drive / Brakke Drive intersection. The entrance ramp to eastbound IH 94 would be reconstructed to the south of its existing alignment to accommodate the loop ramp in the southeast quadrant of the interchange.

In addition, Build Alternative 2 also proposes construction of a loop ramp in the northwest quadrant of the IH 94 / USH 12 interchange for the westbound IH 94 to southbound CTH U movement. The entrance ramp to westbound IH 94 would be reconstructed to the north of its existing alignment to accommodate the loop ramp in the southeast quadrant of the interchange. The existing exit ramp in the northeast quadrant of the interchange would be maintained to accommodate the westbound IH 94 to northbound USH 12 movement. Build Alternative 2 is illustrated in **Figure 6, Appendix A**.

Build Alternative 2 was identified as the Preferred Alternative and is described in greater detail below (see Basic Sheet 2, Item 3 – Description of Proposed Action).

3. Description of Proposed Action (Preferred Alternative – Build Alternative 2)

Build Alternative 2 was identified as the Preferred Alternative because it best addresses the purpose and need for the Proposed Action. As shown in Table 3 below, the ramp terminal intersections are projected to operate at an acceptable LOS B during the a.m. and p.m. peak hours under the Preferred Alternative (Build Alternative 2). The Preferred Alternative (Build Alternative 2) addresses concerns regarding heavy trucks by providing a free-flow movement from eastbound IH 94 to northbound USH 12. In addition, accommodating the loop ramp in the northwest quadrant of the interchange provides the most reserve capacity to accommodate future traffic growth compared to other Build Alternatives. Under the Preferred Alternative (Build Alternative 2), proposed improvements could be implemented in phases. The loop ramp in the southeast quadrant of the interchange and widening of the USH 12 bridge would be constructed first. The second phase of IH 94 / USH 12 interchange improvements would include construction of the loop ramp in the northwest quadrant of the interchange. This second phase would be implemented when warranted by traffic volumes and operational needs at the IH 94 / USH 12 interchange.

Table 3: Year 2035 No Build and Preferred Alternative LOS Results

Location	AM Peak Hour LOS		PM Peak Hour LOS	
	Year 2035 No Build Alt. ⁽¹⁾	Year 2035 Preferred Alt. (Build Alt. 2)	Year 2035 No Build Alt. ⁽¹⁾	Year 2035 Preferred Alt. (Build Alt. 2)
USH 12 / Westbound IH 94 Ramps Intersection	C	B	B	B
USH 12 / Eastbound IH 94 Ramps Intersection	E	B	E	B

⁽¹⁾ Assumes a traffic signal is constructed at the westbound IH 94 / USH 12 ramp terminal intersection under the No Build Alternative.

The Preferred Alternative (Build Alternative 2) proposes official mapping of the IH 94 / USH 12 interchange as a full diamond with loop ramps in the northwest and southeast quadrants of the interchange. Additional details of the Preferred Alternative design are summarized below. The Preferred Alternative preliminary design is illustrated in **Figure 7, Appendix A**.

- The Preferred Alternative includes free flow loop ramp in the southeast quadrant of the IH 94 / USH 12 interchange for the eastbound IH 94 to northbound USH 12 movement.

- The Preferred Alternative requires widening the USH 12 bridge over IH 94 to accommodate an additional lane for the eastbound IH 94 to northbound USH 12 movement, and well as to accommodate pedestrian / bicycle facilities.
- The Preferred Alternative includes an additional lane along northbound USH 12 from the loop ramp in the southeast quadrant through the north ramp terminal intersection to Rodeo / Brakke Drive. This additional lane transitions into a right turn lane at the Rodeo Drive / Brakke Drive intersection,
- The Preferred Alternative includes a loop ramp in the northwest quadrant of the IH 94 / USH 12 interchange for the westbound IH 94 to southbound CTH U movement.
- The existing entrance ramps to eastbound and westbound IH 94 to accommodate the loop ramps in the southeast and northwest quadrants of the interchange would be relocated under the Preferred Alternative, and new ramp terminal intersections would be constructed at the locations of the entrance ramps to eastbound and westbound IH 94.
- The Preferred Alternative includes reconstruction of USH 12 from the USH 12 bridge over IH 94 north to the westbound IH 94 entrance ramp.
- The Preferred Alternative includes reconstruction of CTH U from the USH 12 bridge over IH 94 south to the CTH N intersection. CTH U would be constructed as a four-lane, divided roadway transitioning down to a two-lane roadway with dedicated turn lanes at the CTH N intersection, similar to its existing configuration.
- Wisconsin Administrative Code Chapter Trans 75 (Bikeways and Sidewalks in Highway Projects) requires the inclusion of bikeways and sidewalks in all new highway construction and reconstruction funded using state and federal funds (Trans 75.02). There are no off-road existing bicycle or pedestrian facilities along the project segment of USH 12 and CTH U between Rodeo Drive / Brakke Drive and CTH N. As such, a bicycle and pedestrian facility would be constructed along both sides of USH 12 / CTH U from the Rodeo Drive / Brakke Drive intersection to the CTH N intersection as part of the Proposed Action.

As described above, the Proposed Action includes officially mapping the proposed IH 94 / USH 12 interchange improvements. Official mapping under §84.295(10) provides WisDOT with the authority to purchase officially mapped lands as right-of-way; therefore, the completion of this Environmental Assessment will enhance the validity of the Preferred Alternative identification and serve as a link between the planning and preservation process and future final project design. The Proposed Action does not include immediate programming of construction funds but provides the design flexibility to allow incremental construction phasing and funding over time. Official mapping under §84.295(10) also allows WisDOT to compensate land owners for future right of way needs in advance of construction programming.

4. Construction and Operational Energy Requirements

No Build Alternative

The No Build Alternative would require minimal energy inputs for routine maintenance activities. The existing IH 94 / USH 12 interchange would remain in operation under the No Build Alternative. Operational energy requirements are not anticipated to vary substantially compared to existing conditions. However, as traffic volumes on IH 94, USH 12, and CTH U increase over time, intersection operations are expected to deteriorate and traffic queues will back up onto IH 94, affecting traffic operations on the interstate.

Proposed Action

Current Proposed Action (Official Mapping)

Official mapping of the proposed IH 94 / USH 12 interchange improvements would not require any energy use for construction or operations.

Future Project Construction

The energy requirements for future construction of the Proposed Action are greater than the energy requirements of the No Build Alternative. However, the Proposed Action will improve traffic operations at the IH 94 / USH 12 interchange. Over the design life of the Proposed Action, savings in operational energy due to traffic operations improvements are anticipated to offset the energy required to construct the project.

5. Land use

Land uses adjacent to the IH 94 / USH 12 interchange consist primarily of commercial land uses with some agricultural and residential land uses in the southeast quadrant of the interchange and some industrial land uses in the northeast quadrant of the interchange. Wetlands and wooded lands are also present within and adjacent to the project area. See **Figure 4, Appendix B** for an existing land use map and **Figure 8, Appendix B** for locations of delineated wetlands.

6. Planning and Zoning

The current Proposed Action (official mapping) and future project construction is consistent with the comprehensive plans and zoning regulations which cover the project area.

St. Croix County Comprehensive Plan (2012)

The St. Croix County Comprehensive Plan emphasizes the importance of a well-maintained and planned transportation system to maintain capacity at or above projected traffic volumes and limit traffic congestion. The Plan also notes that the stretch of IH 94 between Hudson and Eau Claire is the second-most traveled segment of interstate highway in the State of Wisconsin. The Proposed Action is consistent with the goals and objectives laid out in the St. Croix County plan because it would improve traffic operations on IH 94.

Town of Hudson Comprehensive Plan (2006)

The Town of Hudson Comprehensive Plan recognizes that IH 94 supports access to and from their township. The transportation and planning principals laid out in their plan include support of transportation mobility, freight movement, connectivity of the transportation system, transportation safety, and support of recreational transportation uses. The Proposed Action is consistent with the planning principals laid out in the Town of Hudson's plan.

West Central Regional Freeway System (2003)

The West Central Regional Freeway System Study was generated in response to the high rate of urban expansion in western Wisconsin from the Minnesota Twin Cities area. The study reviewed capacity needs on major highways throughout the region including IH 94, and documents the need for increasing capacity on IH 94 to handle long-term traffic and growth needs in St. Croix County.

Zoning Regulations

The Proposed Action is located in the Town of Hudson, which has mapped zoning and ordinances. Zoning within and adjacent to the project area consists of commercial, agricultural-residential, and commercial / light industrial zoning uses. The Proposed Action is consistent with the existing and proposed land uses as well as the current zoning in the project area.

Other Plans

Other local and regional plans which cover the project area include the following:

- *St. Croix County Development Management Plan (2000)* – The St. Croix County Development Management Plan outlines goals, objectives and policies to address existing and future development in unincorporated communities in St. Croix County and notes that IH 94 is a major factor in the development of St. Croix County.
- *St. Croix County Farmland Preservation Plan (2012)* – The St. Croix County Farmland Preservation Plan addresses goals, objectives and policies related to preservation of key farmland within the County. The plan identifies IH 94 and USH 12 as important transportation routes in serving the agricultural community and economy. The Proposed Action does not conflict with the goals of the Farmland Preservation Plan, as all of the surrounding property is zoned for development and is not listed as Farmland Preservation Area.
- *St. Croix County Land and Water Resource Management Plan (2013)* – The St. Croix County Land and Water Resource Management Plan provides a guide to conserve natural resources while supporting sustainable economic and recreational use of these resources. The Proposed Action is consistent with the goals of this plan by addressing stormwater runoff quality and avoidance and minimization of environmental resource impacts.

7. Environmental Justice

How was information obtained about the presence of populations covered by EO 12898?	
<input type="checkbox"/> Windshield Survey	<input type="checkbox"/> Official Plan
<input checked="" type="checkbox"/> US Census Data	<input type="checkbox"/> Survey Questionnaire
<input type="checkbox"/> Real Estate Company	<input type="checkbox"/> WisDOT Real Estate
<input type="checkbox"/> Public Information Meeting	<input type="checkbox"/> Local Government
<input type="checkbox"/> Human Resources Agency Identify agency Identify plan, approval authority and date of approval	
<input type="checkbox"/> Other (Identify)	

A. ☒ No

B. ☐ Yes – Factor Sheet B-4 must be completed

Population and demographic information was obtained from 2010 US Census data and 2008-2012 US Census American Community Survey (ACS) data. US Census information for minority and low income populations within the project area is provided in **Appendix H**.

No minority or low-income populations were identified within the IH 94 / USH 12 interchange project area. The minority population in the Census Blocks surrounding the project and within the Town of Hudson is less than six percent of the total population, which is similar to St. Croix County (5.3%) and less than the City of Hudson (7%) and the State of Wisconsin (16.7%), as based on 2010 Census data for these geographies.

Within the study area, disabled and elderly populations are also lower or approximately equal to the populations in St. Croix County and the State of Wisconsin, as based on the 2008-2012 American Community Survey. Disability data is available for the study area at the Census Tract level. The average share of persons with a disability is four percent in the study area, and is also approximately four percent for the Town of Hudson. The share of this population is higher for the City of Hudson (7.6%), St. Croix County (8.1%), and the State of Wisconsin (10.9%).

Furthermore, according to this dataset, persons age 65 and older represent an average of nine percent in the study area Block Groups and seven percent of the population in the Town of Hudson. Conversely, persons age 65 and older represent 13.8 percent of the total population of the City of Hudson, 10.1 percent throughout St. Croix County, and approximately 13.8 percent of the population of the State of Wisconsin.

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

In addition to previous public meetings held for the *I-94 Corridor Study Report* (2005), which included the IH 94 / USH 12 interchange area, the following meetings have been held for the IH 94 / USH 12 Interchange Project:

Date	Meeting Sponsor (WisDOT, RPC, MPO, etc.)	Type of Meeting (PIM, Public Hearings, etc.)	Location	Approx. # Attendees
8/30/2012	WisDOT	Local Advisory Committee (LAC) Kickoff Meeting	City of Hudson, WI	14
3/28/2013	WisDOT	LAC Meeting	City of Hudson, WI	14
6/12/2013	WisDOT	LAC Meeting	City of Hudson, WI	10
9/17/2013	WisDOT	LAC Meeting	City of Hudson, WI	11

Date	Meeting Sponsor (WisDOT, RPC, MPO, etc.)	Type of Meeting (PIM, Public Hearings, etc.)	Location	Approx. # Attendees
7/1/2014	WisDOT	Public Information Meeting (PIM)	St. Croix County Government Center (City of Hudson, WI)	30
8/20/2014	WisDOT	LAC Meeting	City of Hudson, WI	12

B. Other Methods:

Methods of public involvement used on this project are listed below. These methods will continue to be used during design and construction phases of the project, as well as any other standard communication methods used by WisDOT in place at that time.

- Property owner meetings and personal correspondence (e.g., telephone conversations)
- Project newsletters and direct mailings of meeting notices
- Press releases
- Project website (<http://www.dot.wisconsin.gov/projects/nwregion/94hudson/index.htm>)

In addition to these activities, the WisDOT Project Manager has discussed the Proposed Action with individual land owners surrounding the IH 94 / USH 12 interchange, including landowners in the northwest and southeast quadrants of the interchange (i.e., areas proposed for official mapping and future right of way acquisition).

C. Identify groups that participated in the public involvement process. Include any organizations and special interest groups including but not limited to:

The public involvement plan is inclusive to all business owners, property owners, residents, and population groups in the study area and will not exclude any persons because of income, race, religion, national origin, sex, age, or handicap. No organizations or special interest groups were identified within the study area.

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

An opportunity to request a public hearing will be offered during the public review of this environmental document.

Additional public involvement will occur during the design and construction phases of the project. Additional public meetings will be held, consistent with WisDOT practices in place at that time. Public involvement methods will include (but are not limited to): individual meetings / phone calls / correspondence with property owners and other stakeholders; site visits and meetings with property owners as part of the right of way acquisition process; and coordination with property owners and businesses during construction (e.g., meetings, newsletters, press releases).

A separate public hearing will be held to inform the public of the intent to establish future rights of way locations and widths at the IH 94 / USH 12 interchange, in accordance with Wis. Stat. 84.295.

10. Briefly summarize the results of public involvement:

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

Several individuals provided minor geometric comments regarding the IH 94 / USH 12 interchange, and one individual expressed concern about proposed right of way acquisition in the northwest quadrant of the interchange.

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

The interchange has been designed according to current WisDOT geometric standards. The proposed interchange loops will be designed to a 30 mile per hour (mph) design speed (as opposed to a higher design speed) to minimize the project footprint and potential right of way impacts to adjacent properties. Coordination with property owners will be ongoing as part of the right of way acquisition process. Right of way would be acquired in accordance with Wisconsin State Statutes and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

11. Local / regional / tribal / federal government coordination

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

Unit of Government	Coordination	Coordination Initiation Date	Coordination Completion Date	Comments
MPO, RPC, City, County, Village, Town, etc.	Correspondence Attached Y/N			
St. Croix County	N	8/30/2012 (Kickoff Meeting)	Ongoing	Coordination is ongoing to ensure compatibility of the Proposed Action with comprehensive planning efforts, long range transportation needs, and maintenance of access during construction.
City of Hudson	N	8/30/2012 (Kickoff Meeting)	Ongoing	
Town of Hudson	N	8/30/2012 (Kickoff Meeting)	Ongoing	

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

No issues were identified by units of government during the public involvement process. The Preferred Alternative (full diamond interchange with two loops) received positive feedback and support from attendees at the July 1, 2014 Public Information Meeting.

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

Not applicable.

D. Indicate any unresolved issues or ongoing discussion.

There are no unresolved issues; however, project coordination with St. Croix County, the City of Hudson, and the Town of Hudson will be ongoing throughout the official mapping process and future project construct.

Agency and Tribal Coordination - Basic Sheet 3

	Coordination Required? Y = Yes / N = No	Correspondence Attached? Y = Yes / N = No	
WisDOT			
Regional Real Estate Section	N	N	Coordination with the WisDOT Northwest Region Real Estate Section will be ongoing because the Proposed Action includes official mapping and preservation of the interchange footprint.
Bureau of Aeronautics	N	N	The Proposed Action is not located within five miles of a public use or military airport.
Bureau of Rails & Harbors	N	N	The Proposed Action does not involve a railroad, commercial port, or harbor.
STATE AGENCY			
Natural Resources (DNR)	Y	Y	WDNR provided a response to the initial coordination request in October 2014.
State Historic Preservation Office (SHPO)	Y	Y	Consultation letters were sent to the St. Croix County Historical Society, Native American Tribes, and property owners in August 2014. The Section 106 documentation for the proposed action was approved by SHPO in March 2015. No potentially eligible historic standing structures were identified within the project area. No archaeological resources or burial sites were identified within the project area. See Appendix D .
Agriculture (DATCP)	Y	Y	An Agricultural Impact Notice (AIN) was submitted to DATCP in August 2014. DATCP has determined that an Agricultural Impact Statement (AIS) is required for the proposed action. See correspondence from DATCP in Appendix C . A copy of the AIS is included in Appendix G .
Other	NA	NA	Not applicable. (N/A)
FEDERAL AGENCY			
U.S. Corps of Engineers (USACE)	Y	N	An early coordination letter was submitted to the USACE. No response was received.
U.S. Fish & Wildlife Serv. (USFWS)	Y	Y	An early coordination letter was submitted to the USFWS. The USFWS determined that due to the project location, no federally-listed, proposed, or candidate species or critical habitat would be directly or indirectly affected by the proposed action. See correspondence from USFWS in Appendix C .
Natural Resources Conservation Service (NRCS)	Y	Y	Form AD-1006 was completed in September 2014 and submitted to the NRCS field office in Hudson. The NRCS responded that the project is exempt from the Farmland Protection Policy Act (FPPA) because there are no other viable options. No additional coordination is required with NRCS. See correspondence from NRCS in Appendix C .

	Coordination Required? Y = Yes / N = No	Correspondence Attached? Y = Yes / N = No	
FEDERAL AGENCY			
U.S. National Park Service (NPS)	N	N	Not required. The proposed action does not affect any lands administered by the National Park Service (NPS). The proposed action also does not include Section 4(f) or Section 6(f) involvement.
U.S. Coast Guard (USCG)	N	N	Not required. The proposed action does not cross a navigable waterway.
U.S. Environmental Protection Agency (EPA)	N	N	Coordination with the EPA is not required.
Advisory Council on Historic Preservation (ACHP)	N	N	Coordination with the ACHP is not required. There are no potentially eligible historic or archaeological resources within the study area. See Section 106 documentation in Appendix D .
Other (identify)	NA	NA	N/A
SOVEREIGN NATIONS			
American Indian Tribes	Y	Y	An initial tribal coordination letter was distributed to Native American Tribes August 2014. One response was received from the Lac du Flambeau Band of Lake Superior Chippewa Indians. See correspondence in Appendix D .

Environmental Factors Matrix - Basic Sheet 4

FACTORS	EFFECTS				
	Adverse	Benefit	None Identified	Factor Sheet Attached	
A. ECONOMIC FACTORS					
A-1 General Economics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>There will be temporary traffic delays during project construction. Traffic operations improvements will help improve the transportation of goods and services through the IH 94 / USH 12 interchange area. There are no access changes as a result of the Proposed Action. See attached Factor Sheet A-1.</p> <p>Commitments made to maintain traffic during project construction. See Basic Sheet 8.</p>
A-2 Business	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Right of way acquisition would be required from nine business properties and undeveloped commercial properties within the project area. Short-term traffic delays associated with construction may have temporary adverse effects on businesses in the project area; however the Proposed Action is not anticipated to have long-term adverse effects on businesses in the project area. Beneficial effects include improved traffic operations within the IH 94 / USH 12 interchange area. See attached Factor Sheet A-2.</p> <p>Commitments made for business. See Basic Sheet 8.</p>
A-3 Agriculture	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>An estimated 5.5 acres of cropland from two property owners would be directly converted to right-of-way as part of the Proposed Action. The conversions are in the southeast quadrant of the IH 94 / USH 12 interchange and along the east side of CTH U. The Proposed Action would not alter access or impact viability of farming operations. The agricultural land takings are from an area which is planned for future commercial land uses. Other potential adverse effects include temporary delays during project construction for the movement of agricultural equipment and goods through the IH 94 / USH 12 interchange area. See attached Factor Sheet A-3 and the Agricultural Impact Statement in Appendix G.</p> <p>Commitments made for agriculture. See Basic Sheet 8.</p>
B. SOCIAL/CULTURAL FACTORS					
B-1 Community or Residential	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>No residential communities or neighborhoods would be directly affected by the Proposed Action. A small strip taking would be required from one residential property in the northeast quadrant of the CTH U / CTH N intersection. All right of way acquisitions will be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended.</p>

FACTORS	EFFECTS				
	Adverse	Benefit	None Identified	Factor Sheet Attached	
B. SOCIAL/CULTURAL FACTORS					
B-1 Community or Residential (continued)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Adverse effects to the residents surrounding the project area include temporary traffic delays during project construction. The delays would be short-lived in nature and project special provisions would be used to limit inconveniences to residents and other users of the IH 94 / USH 12 interchange. Temporary construction impacts would be outweighed by long-term benefits to traffic operations. See attached Factor Sheet B-1.</p> <p>Commitments made for community and residential. See Basic Sheet 8.</p>
B-2 Indirect Effects	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The project would not result in any indirect effects. See the indirect effects pre-screening worksheet in Appendix E .
B-3 Cumulative Effects	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The project would not result in any cumulative effects. See the cumulative effects pre-screening worksheet in Appendix F .
B-4 Environmental Justice	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No minority or low-income populations have been identified within the project area (see US Census data in Appendix H). Therefore, in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23, no further environmental justice analysis is required.
For B-5 through B-7, if any of these resources are present on the project, contact your REC.					
B-5 Historic Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Four parcels within the area of potential effect (APE) contain structures that are at least 40 years of age or older. Historic standing structures within the project area have been substantially altered and/or do not possess adequate historical or architectural features to be potentially eligible for the National Register of Historic Places (NRHP). See Section 106 documentation in Appendix D .
B-6 Archaeological/Burial Sites	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No archaeological or burial sites were identified within the project area. See Section 106 documentation in Appendix D .
B-7 Tribal Coordination/ Consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The Lac du Flambeau Band of Lake Superior Chippewa Indians responded to the initial tribal coordination letter. See correspondence in Appendix D . No specific issues or concerns were identified.
B-8 Section 4(f) and 6(f) or Other Unique Areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no Section 4(f) or Section 6(f) resources within the project area.

FACTORS	EFFECTS				
	Adverse	Benefit	None Identified	Factor Sheet Attached	
B. SOCIAL/CULTURAL FACTORS					
B-9 Aesthetics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Because the proposed action includes reconstruction of an existing interchange, it will not alter the overall visual character of the landscape.
C. NATURAL RESOURCE FACTORS					
C-1 Wetlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Less than 0.1 acre of wetlands would be impacted as part of the Proposed Action. See attached Factor Sheet C-1 and Figure 8, Appendix B . Commitments made for wetlands. See Basic Sheet 8.
C-2 Rivers, Streams and Floodplains	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no rivers, streams, or floodplains within the project area.
C-3 Lakes or Other Open Water	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no lakes or other open waters within the project area.
C-4 Groundwater, Wells, and Springs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no known groundwater recharge areas, groundwater discharge areas, wellhead protection areas, or springs within the project area.
C-5 Upland Wildlife and Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No high quality upland corridors or communities are present in the project area.
C-6 Coastal Zones	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No coastal zones are present within the project area.
C-7 Threatened and Endangered Species	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A review of the Wisconsin Natural Heritage Inventory (NHI) and other records was completed in October 2014. WDNR concluded that no endangered resources or suitable habitat that could be affected by the proposed action are known or likely to occur within the project area. See correspondence from WDNR in Appendix C . No federally-listed, proposed, or candidate species or critical habitat would be directly or indirectly affected by the proposed action. See correspondence from USFWS in Appendix C .
D. PHYSICAL FACTORS					
D-1 Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Non-Attainment Areas</u> The project is not located in a county designated non-attainment or maintenance for ozone.

FACTORS	EFFECTS			
	Adverse	Benefit	None Identified	Factor Sheet Attached
D. PHYSICAL FACTORS				
D-1 Air Quality (continued)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p><u>Carbon Monoxide (CO)</u></p> <p>NR 411 was repealed by the Wisconsin Legislature. Indirect source permits are no longer required as of March 22, 2012.</p> <p>Localized CO concentrations are influenced by the number of vehicles present on a roadway, the travel speeds of those vehicles, the proximity of receptors to the roadway, and wind direction. CO emissions tend to be higher at lower vehicle speeds, and are highest for idling vehicles. The traffic operations analysis performed for the Proposed Action indicates that the IH 94 / USH 12 ramp terminal intersections are expected to operate at LOS B. This suggests that minimal congestion will be present at these intersections and major queuing of idling of vehicles will not be present. Therefore, the conditions necessary to result in high concentrations of CO at sites near the project area are not likely to occur.</p> <p><u>Mobile Source Air Toxics (MSATs)</u></p> <p>Refer to the Mobile Source Air Toxics (MSAT) analysis in Appendix I.</p>
D-2 Construction Stage Sound Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>WisDOT Standard Specifications 107.8(6) and 108.7.1 would apply. See attached Factor Sheet D-2.</p> <p>Commitments made for construction sound levels. See Basic Sheet 8.</p>
D-3 Traffic Noise	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>The proposed project meets the definition of a Type 1 Project. A traffic noise analysis was completed. Noise abatement measures were determined to be neither feasible nor reasonable. See attached Factor Sheet D-3 and Figure 7 in Appendix B.</p>
D-4 Hazardous Substances or Contamination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>A Phase 1 Hazardous Materials Assessment was completed for the Proposed Action. Partial right of way acquisition (i.e., strip takings) is anticipated at four of the identified in the Phase 1 Assessment. Two of these properties were identified for further investigation. Additional studies will be completed to determine the extent of any contamination and the need for any remediation. See Factor Sheet D-4.</p>

FACTORS	EFFECTS				
	Adverse	Benefit	None Identified	Factor Sheet Attached	
D. PHYSICAL FACTORS					
D-4 Hazardous Substances or Contamination (continued)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>An asbestos inspection of the USH 12 bridge over IH 94 (B-55-0151) was conducted on July 29, 2014. Asbestos-containing material is not present on this structure.</p> <p>Commitments made for hazardous substances. See Basic Sheet 8.</p>
D-5 Stormwater	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>The Proposed Action would be designed to meet Trans 401 stormwater standards in place at the time of design. A Stormwater Management Plan will be developed in coordination with the WDNR to reduce or minimize runoff effects from construction of the Proposed Action.</p> <p>Commitments made for stormwater. See Basic Sheet 8.</p>
D-6 Erosion Control and Sediment Control	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Standard WisDOT erosion control methods would be used during construction. Temporary and permanent erosion control measures may include, but are not limited to: minimizing the amount of land exposed at one time, temporary seed, mulch, silt fencing, erosion mats, or other standard WisDOT best management practices in place at the time of construction.</p> <p>Construction site erosion and sediment control would be part of the project's design and construction as set forth in Trans 401 Wis. Adm. Code and the WisDOT/WDNR Cooperative Agreement. An Erosion Control Implementation Plan (ECIP) would be prepared by the contractor and approved by WisDOT prior to construction.</p> <p>Commitments made for erosion control. See Basic Sheet 8.</p>
E. OTHER FACTORS					
E-1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Alternatives Comparison Matrix - Basic Sheet 5

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	IH 94 / USH 12 Interchange Alternatives		
		No Build Alternative	Build Alt. 1 (Full Diamond with Loop)	Build Alt. 2 (Preferred Alternative – Full Diamond with Two Loops)
Project Length (approximate)	Miles	0 miles	1.9 miles	2.8 miles
Preliminary Cost Estimate (YOE) (Year 2014 dollars)				
Construction ⁽¹⁾	Million \$	\$ 0.2 ⁽³⁾	\$ 10.3	\$ 18.2 <ul style="list-style-type: none"> • Phase 1: \$ 10.3 • Phase 2: \$ 7.9
Real Estate ^{(1),(2)}	Million \$	\$ 0	\$ 0.6	\$ 1.0 <ul style="list-style-type: none"> • Phase 1: \$ 0.6 • Phase 2: \$ 0.4
Total	Million \$	\$ 0.2	\$ 10.9	\$ 19.2 <ul style="list-style-type: none"> • Phase 1: \$ 10.9 • Phase 2: \$ 8.3
Land Conversions				
Wetland Area Converted to ROW	Acres	0 acres	Less than 0.1 acres	Less than 0.1 acres
Upland Habitat Area Converted to ROW	Acres	0 acres	0 acres	0 acres
Other Area Converted to ROW	Acres	0 acres	6.1 acres	10.4 acres
Total Area Converted to ROW	Acres	0 acres	6.1 acres	10.4 acres
Real Estate				
Number of Farms Affected	Number	0	1	1
Total Area Required From Farm Operations (approximate)	Acres	0 acres	5.9 acres	5.9 acres
AIS Required	Yes / No	No	Yes	Yes
Farmland Rating	Score	0	N/A ⁽⁴⁾	N/A ⁽⁴⁾
Total Buildings Required	Number	0	0	0
Housing Units Required	Number	0	0	0
Commercial Units Required	Number	0	0	0
Other Buildings or Structures Required	Number and Type	0	0	0

ENVIRONMENTAL ISSUES/IMPACTS	UNIT of MEASURE	IH 94 / USH 12 Interchange Alternatives		
		No Build Alternative	Build Alt. 1 (Full Diamond with Loop)	Build Alt. 2 (Preferred Alternative – Full Diamond Two with Loops)
Environmental Issues / Impacts				
Indirect Effects	Yes / No	No	No	No
Cumulative Effects	Yes / No	No	No	No
Environmental Justice Populations	Yes / No	No	No	No
Historic Properties	Number	0	0	0
Archeological Sites	Number	0	0	0
Burial Site Protection (authorization required)	Yes / No	No	No	No
106 MOA Required	Yes / No	No	No	No
4(f) Evaluation Required	Yes / No	No	No	No
6(f) Land Conversion Required	Yes / No	No	No	No
Flood Plain	Yes / No	No	No	No
Total Wetlands Filled	Acres	0 acres	Less than 0.1 acre	Less than 0.1 acre
Stream Crossings	Number	0	0	0
Endangered Species	Yes / No	No	No	No
Air Quality Permit Required	Yes / No	No	No	No
Design Year Noise Sensitive Receptors				
No Impact	Number	14	N/A	14
Impacted	Number	2	N/A	2
Contaminated Sites	Number	2	2	2

- (1) Phase 1 proposes construction of the loop ramp in the southeast quadrant of the interchange and widening of the USH 12 bridge. Phase 2 proposes construction of the loop ramp in the northwest quadrant of the interchange. This second phase would be implemented when warranted by traffic volumes and operational needs at the IH 94 / USH 12 interchange.
- (2) Real Estate estimates are rounded to the nearest hundred thousand dollars. Estimates assume a right of way cost of approximately \$100,000 per acre based on information provided by the WisDOT Northwest Region Real Estate Section.
- (3) Includes the construction cost estimate for installation of a traffic signal at the westbound IH 94 / USH 12 ramp terminal intersection under the No Build Alternative.
- (4) The NRCS determined that this project is exempt from FPPA because there are no other viable options. See correspondence in **Appendix C**.

Traffic Summary Matrix - Basic Sheet 6

	IH 94 / USH 12 Interchange Alternatives		
	No Build Alternative	Build Alt. 1 (Full Diamond with Loop)	Build Alt. 2 (Preferred Alternative – Full Diamond with Two Loops)
TRAFFIC VOLUMES			
Existing ADT Yr. 2012	IH 94 W of USH 12: 52,400 USH 12 N of IH 94: 15,000	IH 94 W of USH 12: 52,400 USH 12 N of IH 94: 15,000	IH 94 W of USH 12: 52,400 USH 12 N of IH 94: 15,000
Const. Yr. ADT Yr. 2025	IH 94 W of USH 12: 69,000 USH 12 N of IH 94: 21,400	IH 94 W of USH 12: 69,000 USH 12 N of IH 94: 21,400	IH 94 W of USH 12: 69,000 USH 12 N of IH 94: 21,400
Const. Plus 10 Yr. ADT Yr. 2035	See design year ADT	See design year ADT	See design year ADT
Design Yr. ADT Yr. 2035	IH 94 W of USH 12: 85,000 USH 12 N of IH 94: 29,400	IH 94 W of USH 12: 85,000 USH 12 N of IH 94: 29,400	IH 94 W of USH 12: 85,000 USH 12 N of IH 94: 29,400
DHV Yr. 2035	IH 94 W of USH 12: 7,250 USH 12 N of IH 94: 3,470	IH 94 W of USH 12: 7,250 USH 12 N of IH 94: 3,470	IH 94 W of USH 12: 7,250 USH 12 N of IH 94: 3,470
TRAFFIC FACTORS			
K _[30/100/200] (%) *	See P below.	See P below.	See P below.
D (%)	IH 94 W of USH 12: 61/39 USH 12 N of IH 94: 64/36	IH 94 W of USH 12: 61/39 USH 12 N of IH 94: 64/36	IH 94 W of USH 12: 61/39 USH 12 N of IH 94: 64/36
Design Year T (% of ADT)	IH 94 W of USH 12: N/A USH 12 N of IH 94: N/A	IH 94 W of USH 12: N/A USH 12 N of IH 94: N/A	IH 94 W of USH 12: N/A USH 12 N of IH 94: N/A
T (% of DHV)	IH 94 W of USH 12: 15.4 USH 12 N of IH 94: 6.0	IH 94 W of USH 12: 15.4 USH 12 N of IH 94: 6.0	IH 94 W of USH 12: 15.4 USH 12 N of IH 94: 6.0
Level of Service	Intersection of USH 12 / WB IH 94 Ramps: E Intersection of USH 12 / EB IH 94 Ramps: E	Intersection of USH 12 / WB IH 94 Ramps: C Intersection of USH 12 / EB IH 94 Ramps: B	Intersection of USH 12 / WB IH 94 Ramps: B Intersection of USH 12 / EB IH 94 Ramps: B
SPEEDS			
Existing Posted	IH 94: 65 mph USH 12: 45 mph CTH U: 45 mph	IH 94: 65 mph USH 12: 45 mph CTH U: 45 mph	IH 94: 65 mph USH 12: 45 mph CTH U: 45 mph
Future Posted	IH 94: 65 mph USH 12: 45 mph CTH U: 45 mph	IH 94: 65 mph USH 12: 45 mph CTH U: 45 mph	IH 94: 65 mph USH 12: 45 mph CTH U: 45 mph
Design Year Project Design Speed	IH 94: 70 mph USH 12: 50 mph CTH U: 50 mph	IH 94: 70 mph USH 12: 50 mph CTH U: 50 mph	IH 94: 70 mph USH 12: 50 mph CTH U: 50 mph

	IH 94 / USH 12 Interchange Alternatives		
	No Build Alternative	Build Alt. 1 (Full Diamond with Loop)	Build Alt. 2 (Preferred Alternative – Full Diamond with Two Loops)
OTHER (specify)			
P (% of ADT)	IH 94 W of USH 12: 8.5% USH 12 N of IH 94: 11.8%	IH 94 W of USH 12: 8.5% USH 12 N of IH 94: 11.8%	IH 94 W of USH 12: 8.5% USH 12 N of IH 94: 11.8%
K (% OF ADT)	IH 94 W of USH 12: N/A USH 12 N of IH 94: N/A	IH 94 W of USH 12: N/A USH 12 N of IH 94: N/A	IH 94 W of USH 12: N/A USH 12 N of IH 94: N/A

ADT = Average Daily Traffic

DHV = Design Hourly Volume

K _[30/100/200] : K₃₀ = Interstate, K₁₀₀ = Rural, K₂₀₀ = Urban, % = ADT in DHV

D = % DHV in predominate direction of travel

T = Trucks

P = % ADT in peak hour

K₈ = % ADT occurring in the average of the 8 highest consecutive hours of traffic on an average day (required only if CO analysis required per NR 411.)

* The weekday PM peak hour was used for design and analysis.

EIS Significance Criteria - Basic Sheet 7

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.

Environmental Commitments - Basic Sheet 8

ATTACH A COPY OF THIS PAGE TO THE DESIGN STUDY REPORT AND THE PSE SUBMITTAL PACKAGE

Factors	Commitments
A-1 General Economics	<p>Commitments Made</p> <p>WisDOT will develop contract special provisions requiring the contractor to maintain through, local, and emergency traffic through the project area during construction in order to maintain access to businesses and regional commercial traffic and to minimize delays.</p> <p>WisDOT's Project Manager will ensure fulfillment of this commitment.</p>
A-2 Business	<p>Commitments Made</p> <p>WisDOT will develop contract special provisions requiring the contractor to maintain access to businesses during project construction, as well as other standard WisDOT best management practices in order to limit inconveniences to businesses and minimize delays.</p> <p>WisDOT's Project Manager will ensure fulfillment of this commitment.</p>
A-3 Agriculture	<p>Commitments Made</p> <p>WisDOT will develop contract special provisions requiring the contractor to maintain traffic through the project area during construction in order to maintain access to agricultural areas and agricultural related businesses while minimizing delays. Any required closures at the USH 12 bridge over IH 94 will be temporary in nature, and will be timed to ensure agricultural equipment has access across IH 94 during planting and harvesting seasons.</p> <p>WisDOT's Project Manager will ensure fulfillment of this commitment.</p>
B-1 Community or Residential	<p>Commitments Made</p> <p>WisDOT will develop contract special provisions requiring the contractor to maintain through, local, and emergency traffic through the project area during construction in order to maintain access to residences and minimize delays.</p> <p>WisDOT's Project Manager will ensure fulfillment of this commitment.</p>
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	No Commitments Needed
B-6 Archaeological Sites	No Commitments Needed
B-7 Tribal Coordination/Consultation	No Commitments Needed
B-8 Section 4(f) and 6(f) or Other Unique Areas	No Commitments Needed
B-9 Aesthetics	No Commitments Needed

Factors	Commitments
C-1 Wetlands	<p>Commitments Made</p> <p>Construction of the Proposed Action is anticipated to result in less than 0.1 acre of wetland impacts. An updated wetland delineation will be completed during design and prior to construction. Coordination will take place with the WDNR and the USACE to obtain concurrence and jurisdiction determinations (if necessary) prior to project construction. Any necessary permits or other agency regulatory review, concurrence, and/or approvals will also be obtained prior to beginning work at the site or disturbing or altering wetlands. Any wetland permit and/or agency requirements will be reflected in the project plans and contract special provisions.</p> <p>During design, additional strategies will be evaluated to further minimize wetland impacts and will be reflected in the project plans.</p> <p>WisDOT's Project Manager and WisDOT's Regional Environmental Coordinator will ensure fulfillment of this commitment.</p>
C-2 Rivers, Streams & Floodplains	Not Applicable
C-3 Lakes or other Open Water	Not Applicable
C-4 Groundwater, Wells and Springs	Not Applicable
C-5 Upland Wildlife and Habitat	No Commitments Needed
C-6 Coastal Zones	Not Applicable
C-7 Threatened and Endangered Species	Not Applicable
D-1 Air Quality	No Commitments Needed
D-2 Construction Stage Sound Quality	<p>Commitments Made</p> <p>WisDOT Standard Specifications 107.8(6) and 108.7.1 will apply.</p> <p>WisDOT's Project Manager will ensure fulfillment of this commitment.</p>
D-3 Traffic Noise	No Commitments Needed
D-4 Hazardous Substances or Contamination	<p>Commitments Made</p> <p>Two contaminated sites have been identified in the Phase 1 Hazardous Materials Investigation that may impact construction of the Proposed Action. Further investigation of these two sites will be completed prior to construction. At a minimum, a Phase 2 Hazardous Materials Investigation will be conducted for the property in the northeast quadrant of the IH 94 / USH 12 interchange to determine the extent of any petroleum contamination within highway right of way.</p> <p>A review of current agency records and databases will be completed during design to update the Phase 1 Hazardous Materials Investigation to ensure no new information is available. Phase 2 Hazardous Materials Investigations will be conducted at any additional sites that may impact construction activities.</p>

Factors	Commitments
D-4 Hazardous Substances or Contamination (continued)	<p>No asbestos was found on the existing USH 12 / CTH U structure over IH 94 (B-55-0151). A copy of the bridge asbestos inspection report is available from the WisDOT Northwest Region office. A special provision for Notice to Contractor, Notification of Demolition and/or Renovation (STSP #107-125) will be included with the project and the contractor will be required to complete the Notification of Demolition and/or Renovation (DNR Form 4500-113) for widening of the existing structure.</p> <p>WisDOT's Project Manager will ensure fulfillment of this commitment.</p>
D-5 Storm water	<p>Commitments Made</p> <p>The Proposed Action will be designed to meet Wisconsin Administrative Code Chapter Trans 401 stormwater standards in place at the time of design. A Stormwater Management Plan will be developed and incorporated into the project design. Best management practices will be identified in coordination with the WDNR to reduce or minimize stormwater runoff effects.</p> <p>WisDOT's Project Manager will ensure fulfillment of this commitment.</p>
D-6 Erosion Control	<p>Commitments Made</p> <p>Construction site erosion and sediment control will follow Wisconsin Administrative Code Chapter Trans 401 and WisDOT / WDNR Cooperative Agreement requirements in place at the time of design and construction. An Erosion Control Implementation Plan (ECIP) would be prepared for review by WDNR and approval by WisDOT prior to construction. Detailed erosion control measures will be during design.</p> <p>WisDOT's Project Manager and the Contractor will ensure fulfillment of this commitment.</p>
E Other	

GENERAL ECONOMICS EVALUATION

Wisconsin Department of Transportation

Factor Sheet A-1

Alternative Build Alternative 2: Full Diamond with Two Loops	Total Length of Center Line of Existing Roadway: 1.4 mi Length of This Alternative: 2.8 mi.
Preferred <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> None Identified	

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

Economic Activity	Description
a. Agriculture	Agriculture is a prominent land use in St. Croix County and employs approximately 2.5% of the county's workforce with forestry, fishing and hunting, and mining included. A portion of the land adjacent to the IH 94 / USH 12 interchange is in agricultural land use.
b. Retail business	Retail businesses make up one of the top ten employers in St. Croix County. General retail employs approximately 10.7% of the county workforce. Retail centers and retail businesses are present near the IH 94 / USH 12 interchange.
c. Wholesale business	No wholesale businesses exist directly adjacent to the project area, but the industry employs approximately 2.9% of the county workforce.
d. Heavy industry	Manufacturing employs approximately 18.9% of St. Croix County's workforce. Manufacturing is the county's second largest work sector and the county's largest workforce sector in terms of total payroll.
e. Light industry	See item d above. Statistics for light industry and heavy industry are grouped under "Manufacturing;" therefore, light industry statistics are not available separate from heavy industry.
f. Tourism	Although the tourism industry is not a top ten employment sector in St. Croix County, tourism resources make the St. Croix County area more attractive to visitors who bring money into the local economy. It also makes the area more attractive to residents and people seeking employment in St. Croix County.
g. Recreation	See item f above. Information regarding recreational statistics was not available separate from tourism. Resources such as the St. Croix River, Willow River State Park, public hunting lands, and snowmobile trails draw visitors to the area. No recreational resources are located within or immediately adjacent to the project area.
h. Forestry	Information regarding forestry statistics was not available separate from agriculture. Woodlands are not a predominant land use in the area, but are present throughout the county. Productive forest lands are located northwest of the project area.
i. Service, Health, & Education	There is a high concentration of service, health, and education (29.2%) related jobs in St. Croix County. The education and health industry is the largest employer in the county. No schools or health facilities are located within the project area.

Note: Data is based on 2008-2012 American Community Survey 5-Year Estimates and the State of Wisconsin Department of Workforce Development 2013 St. Croix County Workforce Profile.

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:

The Proposed Action would provide the economic advantage of improved traffic operations in the project area. Economic disadvantages of the Proposed Action include partial right of way acquisitions in the northwest and southeast quadrants of the IH 94 / USH 12 interchange and along CTH U between IH 94 and CTH N, as well as temporary traffic delays related to construction activities. No businesses would be relocated as a result of the Proposed Action.

The Proposed Action would better serve businesses and industries on a regional, state, and local level. The benefits to the users of the IH 94 / USH 12 interchange include improved traffic operations and mobility. The long-term economic advantages outweigh any potential short-term economic disadvantages.

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: _____
☐ Decrease, describe: _____

Factor Sheet A-2

Alternative Build Alternative 2: Full Diamond with Two Loops	Total Length of Center Line of Existing Roadway: 1.4 mi Length of This Alternative: 2.8 mi
Preferred <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> None identified	

1. Is a Conceptual Stage Relocation Plan attached to this document?☐ Yes☒ No - (Explain) _____

A Conceptual Stage Relocation Plan is not required for the Proposed Action. The Proposed Action does not require any business or residential relocations.

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

Businesses located directly adjacent to the IH 94 / USH 12 interchange include business office/professional, retail (e.g., gas station), restaurant, and industrial businesses. There are several undeveloped parcels located adjacent to the IH 94 / USH 12 interchange. Land adjacent to the interchange is planned for future commercial uses as described in the St. Croix County *2012-2035 Comprehensive Plan*. No known near-term developments are planned within the project area.

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

The primary mode of transportation in the project area is vehicular traffic (automobiles and trucks) on IH 94, USH 12, and CTH U. IH 94 and USH 12 carries a large volume of truck traffic. Approximately 10 to 20 percent of the total traffic at the IH-94 / USH 12 interchange is heavy trucks. There are no existing bicycle and pedestrian facilities within the project area, although bicycling and walking can be accommodated along the existing shoulders on USH 12 and CTH U. There is no public mass transit service in the project area.

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.

Right of way acquisition would be required from five parcels adjacent to the IH 94 / USH 12 interchange containing active businesses as well as from undeveloped parcels planned for future commercial development. Right of way acquisition would not impact the viability of existing businesses. Right of way acquisition would also not limit the ability for future planned development to occur on undeveloped parcels; however, property acquired for right of way would reduce the total amount of land available for development. No businesses would be relocated with the Proposed Action.

There may be traffic delays during project construction, including delays to traffic destined to / from businesses within the project area. These delays would be temporary in nature. Contract special provisions would be used to limit inconveniences to businesses during construction, including maintaining access throughout construction and business signage. There are no changes in access to any businesses with the Proposed Action.

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.

Businesses within the project area will benefit from improvements in traffic operations as a result of the Proposed Action. There may be delays to traffic destined to / from area businesses during project construction. These delays would be temporary in nature. Contract special provisions would be used to limit inconveniences to businesses during project construction. Access to businesses would be maintained during project construction. There are no business relocations or changes in access to businesses as a result of the Proposed Action.

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

No changes in employment are anticipated at businesses adjacent to the IH 94 / USH 12 interchange as a result of the Proposed Action. No businesses would be relocated as a result of the Proposed Action, and access will be maintained to businesses during and following project construction.

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

The purpose of the Proposed Action is to officially map roadway enhancements at the IH 94 / USH 12 interchange that will provide for long-term operational and mobility improvements. The Proposed Action is not anticipated to create or displace any businesses or jobs.

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.

Not applicable. Displacement of business owners or employees is not anticipated.

Questions 8 through 13 are not applicable as there are no business relocations with the Proposed Action.

8. Is Special Relocation Assistance Needed?

☒ No

☐ Yes – Describe special relocation needs.

Not applicable. Special relocation assistance is not needed. The Proposed Action does not require any business relocations.

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:

Not applicable.

10. Describe the business relocation potential in the community:

A. Total number of available business buildings in the community. _____

Not applicable.

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).

Number of available and comparable type business buildings in the price range of _____

Number of available and comparable type business buildings in the price range of _____

Number of available and comparable type business buildings in the price range of _____

Not applicable.

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:

Not applicable. The Proposed Action does not require any business relocations. Right of way acquisition (i.e., strip takings) from businesses adjacent to the IH 94 / USH 12 interchange will be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended.

☐ 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:

Not applicable. The Proposed Action does not require any business relocations.

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:

No business relocations are required. Additional adverse effects to businesses other than those discussed above are not anticipated.

Factor Sheet A-3

Alternative Build Alternative 2: Full Diamond with Two Loops	Total Length of Center Line of Existing Roadway: 1.4 mi. Length of This Alternative: 2.8 mi.
Preferred <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	5.5	0	5.5
Woodland	0	0	0
Land of undetermined or other use (e.g., wetlands, yards, roads, etc.)	0	0	0
Totals	5.5	0	5.5

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

Acreage to be Acquired	Number of Farm Operations
Less than 1 acre	1
1 acre to 5 acres	0
More than 5 acres	1

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 – NRCS responded that the project is exempt from FPPA because there are no other viable options. See correspondence from NRCS in Appendix C.
- ☐ The Site Assessment Criteria Score (Part VI of the form) is less than 60 points for this project alternative.
Date Form AD-1006 completed. _____
 - ☐ The Site Assessment Criteria Score is 60 points or greater.
Date Form AD-1006 completed. _____

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. Describe _____
- ☒ 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

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)

Questions 7 through 16 were not completed as an AIN was prepared for the Proposed Action.

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

☐ Does Not Apply.

☐ Applies – Discuss.

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:

COMMUNITY OR RESIDENTIAL EVALUATION

Wisconsin Department of Transportation

Factor Sheet B-1

Alternative Build Alternative 2: Full Diamond with Two Loops	Total Length of Center Line of Existing Roadway: 1.4 mi Length of This Alternative: 2.8 mi
Preferred <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> None identified	

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

Name of Community/Neighborhood: Town of Hudson	
Incorporated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Total Population: 8,461 (Source: 2010 US Census)	
Demographic Characteristics for the Town of Hudson in St. Croix County, Wisconsin	
Census Year 2010	% of Population
Minority	4.3%
60 years of age or older	10.0%
Individuals below poverty level	1.4%
Owner occupied housing	92.9%
Renter occupied housing	7.1%
Workforce commuting by automobile	93.0%
Workforce commuting by public transportation	0.5%

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

Existing modes of transportation consist primarily of automobile and truck traffic. IH 94, USH 12, and CTH U carry commuters traveling to and from homes and businesses in western Wisconsin and the Twin Cities in Minnesota, as well as high volumes of truck traffic (10-20% of average daily traffic). School bus service exists through the project area. Other modes of transportation include biking and walking along USH 12 / CTH U. There is no public mass transit service in the project area.

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:

Construction of the Proposed Action would result in short term temporary impacts to the existing modes of transportation; however, no detours are anticipated and access to residences and businesses would be maintained throughout construction. The Proposed Action would improve mobility and operations of automobile and truck traffic along IH 94, USH 12, and CTH U. There are no proposed changes to school bus service or other modes of transportation as a result of the Proposed Action.

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

Existing and future land uses have been considered as part of the alternatives development for the Proposed Action.

The pattern of development that is anticipated to occur in the project area with the Proposed Action would most likely be similar to the current pace and type occurring now. The project is not anticipated to have an effect on existing or planned land uses.

Land use conversions and development in the areas surrounding the Proposed Action would occur in a manner that is consistent with local and regional comprehensive plans. Some commercial development is anticipated in the northwest and southeast quadrants of the IH 94 / USH 12 interchange based on the official St. Croix County zoning map; however, future development will also be influenced by land costs, regulatory approvals, and economic conditions.

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

Construction of the Proposed Action may result in temporary delays for local and through traffic. Coordination would take place with emergency services, school bus services, postal services, garbage pickup, and other public services as necessary prior to and during project construction. The contract special provisions will be required to maintain emergency and access routes during construction. After construction, emergency and public services will return to preconstruction conditions through the project.

Some utilities may require relocation as a result of the Proposed Action; temporary disruptions during relocation of utilities may occur. Coordination would take place with the utility companies and local property owners if necessary to minimize disruptions in service.

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 Proposed Action would require partial right of way acquisitions along CTH U south of the IH 94 / USH 12 interchange. Access to adjacent properties would be maintained. There are no existing bicycle or pedestrian facilities within the project area. The Proposed Action includes bicycle and pedestrian facilities along USH 12 / CTH U between Rodeo Drive / Brakke Drive and CTH N.

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:

The Proposed Action will not affect a community or neighborhood facility.

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

No factors have been identified as important or controversial.

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

Community Sensitive Design considerations will be evaluated during design following standard WisDOT practices in place at that time.

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.

Questions 11 through 18 are not applicable and are not included in this document. The Proposed Action does not require the acquisition of any residential buildings. No relocations are required.

WETLANDS EVALUATION

(9/2013)

Wisconsin Department of Transportation

Factor Sheet C-1

Alternative Build Alternative 2: Full Diamond with Two Loops	Total Length of Center Line of Existing Roadway: 1.4 mi. Length of This Alternative: 2.8 mi.
Preferred <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> None identified	

1. Describe Wetlands:

The current Proposed Action proposes official mapping of IH 94 / USH 12 interchange improvements. No wetlands would be impacted as a result of official mapping activities. An updated wetland delineation would be completed during design, prior to project construction. Final wetland impacts would be identified at that time and appropriate mitigation measures would be identified, consistent with regulatory requirements in place at that time.

	Wetland 1		Wetland 2		Wetland 3		Wetland 4		Wetland 5	
Name (if known) or wetland number ⁽¹⁾	W-1		W-2		W-3		W-4		W16	
County	St. Croix		St. Croix		St. Croix		St. Croix		St. Croix	
Location (Section-Township-Range)	Sec. 28, T29N, R19W		Sec. 33, T29N, R19W		Sec. 33, T29N, R19W		Sec. 33, T29N, R19W		Sec. 27, T29N, R19W	
Location (Latitude)	44.96671 N		44.96309 N		44.96145 N		44.96222 N		44.96460 N	
Location (Longitude)	-92.68054 W		-92.68343 W		-92.68064 W		-92.68077 W		-92.67812 W	
Location Map	See Figure 8.		See Figure 8.		See Figure 8.		See Figure 8.		See Figure 8.	
Wetland Type(s) ⁽²⁾	SM		SS		M		SM		SS / M	
Wetland Loss ⁽³⁾	310 SF (0.007 acre)		0 acre		415 SF (0.01 acre)		1678 SF (0.039 acre)		0 acre	
Wetland is: (Check all that apply) ⁽⁴⁾	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
• Isolated from stream, lake or other surface water body	X		X		X		X		X	
• Not contiguous (in contact with) a stream, lake, or other water body, but within 100-year floodplain		X		X		X		X		X
• If adjacent or contiguous, identify stream, lake or water body	N/A		N/A		N/A		N/A		N/A	

⁽¹⁾ Wetland numbering from the project wetland delineation report.

⁽²⁾ Wetland types specified in the "WisDOT FDM 24-5 Attachment 10.2 Wetland Type Correspondence Table"

⁽³⁾ See **Figure 8, Appendix B**. Wetland impacts based on preliminary design construction limits.

⁽⁴⁾ Wetlands are not contiguous to streams, lakes or other water bodies; therefore Factor Sheet C-2, Rivers, Streams and Floodplains Impact Evaluation and Factor Sheet C-3, Lake or Water Body Impact Evaluation were not completed.

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:

As noted above, the current Proposed Action proposes official mapping of IH 94 / USH 12 interchange improvements. No wetlands would be impacted as a result of official mapping. It is anticipated that future project construction would include excavation for the proposed interchange improvements, placement of fill for roadway embankments, and culvert reconstruction.

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

The wetland areas provide some terrestrial and aquatic habitats for permanent, migratory, and seasonal uses for a diversity of species. Resident species include raccoons, opossums, skunks, rabbits, frogs, turtles, songbirds, raptors, and various other small mammals, amphibians and reptiles. Seasonal residents and migratory wildlife within the project area include songbirds, waterfowl, and raptors.

5. Federal Highway Administration (FHWA) Wetland Policy:

The current Proposed Action is official mapping, which would not result in wetland impacts. An updated wetland delineation would be completed during design and coordination would take place with the WDNR to obtain concurrence prior to project construction. It is anticipated that the Statewide Wetland Finding would apply to this project.

- ☐ 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

Erosion Control Evaluation

Standard WisDOT erosion control methods would be used during construction. Temporary and permanent erosion control measures may include, but are not limited to: minimizing the amount of land exposed at one time, temporary seed, mulch, silt fencing, erosion mats, or other standard WisDOT best management practices in place at the time of project construction. Construction site erosion and sediment control would be part of the project's design and construction as set forth in Trans 401 and the WisDOT/WDNR Cooperative Agreement. An Erosion Control Implementation Plan (ECIP) would be prepared by the contractor and approved by WisDOT prior to project construction.

Stormwater Evaluation

The Proposed Action would be designed to meet Trans 401 stormwater standards in place at the time of design. A Stormwater Management Plan will be developed in coordination with the WDNR to reduce or minimize the runoff effects from construction of the Proposed Action.

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

The current Proposed Action is official mapping, which would not result in wetland impacts; therefore, jurisdictional determinations have not been requested from the USACE. Prior to project construction, an updated wetland delineation would be completed and coordination would take place with the WDNR and the USACE to obtain concurrence and jurisdiction determinations (if necessary). Any necessary permits or other agency regulatory review, concurrence, and/or approvals would also be obtained prior to beginning work at the site or disturbing or altering wetlands. Any wetland permit and/or agency requirements would be reflected in the plans and contract special provisions.

- ☐ 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: 0.056 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 (*expires 12/31/17*), 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]

The type of GP or LOP required for the Proposed Action will be identified during design based on regulatory and permitting requirements in place at that time.

8. Wisconsin Department of Natural Resources Coordination - Section 401 Water Quality Certification

- ☐ DNR has provided concurrence on the project wetland delineation. Received on: (Date)
☒ Other- Explain

The current Proposed Action is official mapping, which would not result in wetland impacts. An updated wetland delineation would be completed during design. Coordination would take place with the WDNR and the USACE at that time to obtain concurrence and jurisdiction determinations (if necessary) prior to project construction. Any necessary permits or other agency regulatory review, concurrence, and/or approvals would also be obtained prior to beginning work at the site or disturbing or altering wetlands. Any wetland permit and/or agency requirements would be reflected in the plans and contract special provisions.

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 – no navigable waters of the United States are located within or adjacent to the project.
☐ Section 10 Waters
☐ **Reporting GP** [GP-003-WI (*expires 12/31/17*)]
☐ **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]

Avoidance and minimization measures include maintaining the proposed IH 94 / USH 12 interchange improvements within existing highway right of way to the extent feasible. Wetland avoidance and impact minimization will be evaluated during design, and may include the use of steeper slopes, minimizing profile changes, or other best management practices in place at that time.

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.:
2. Indicate the total area of wetlands avoided:
Acres:

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

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).

Compensation for unavoidable wetland loss will be determined during design following completion of an updated wetland delineation.

	Type	Acre(s) Loss	Ratio	Compensation Type and Acreage	
				On-site	DOT Mitigation Bank site
RPF(N)	Riparian wetland (wooded)				
RPF(D)	Degraded riparian wetland (wooded)				
RPE(N)	Riparian wetland (emergent)				
RPE(D)	Degraded riparian wetland (emergent)				
M(N)	Wet and sedge meadows, wet prairie, vernal pools, fens				
M(D)	Degraded meadow	0.01	TBD		TBD
SM	Shallow marsh	0.046	TBD		TBD
DM	Deep marsh				
AB(N)	Aquatic bed				
AB(D)	Degraded aquatic bed				
SS	Shrub Swamp, shrub carr, alder thicket				
WS(N)	Wooded swamp				
WS(D)	Degraded wooded swamp				
Bog	Open and forested bogs				

D = Degraded; N = Non-degraded

TBD = Replacement ratios and compensation type and acreage to be determined based on mitigation requirements in place at the time of design and project construction.

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:

Not applicable. It is anticipated that any wetland mitigation required for the Proposed Action will be provided through the use of a WisDOT mitigation bank. Compensation for unavoidable wetland loss would be determined during design once an updated wetland delineation has been completed and wetland impacts have been calculated.

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

Initial coordination was completed with WDNR. WDNR noted that unavoidable wetland impacts must be mitigated for in accordance with the DOT/DNR Cooperative Agreement and the Wisconsin Department of Transportation Wetland Mitigation Banking Technical Guideline (see agency correspondence in **Appendix C**). A project initiation letter was provided to USACE. No response was received.

Coordination will continue with WDNR and USACE with completion of wetland delineation updates and during design. WisDOT will coordinate with WDNR and USACE to obtain the appropriate wetland permits, water quality certifications, and final concurrence prior to construction of the Proposed Action.

CONSTRUCTION STAGE SOUND QUALITY EVALUATION

Wisconsin Department of Transportation

Factor Sheet D-2

Alternative Build Alternative 2: Full Diamond with Two Loops	Total Length of Center Line of Existing Roadway: 1.4 mi. Length of This Alternative: 2.8 mi.
Preferred <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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:**

Modeled receptors in the project area are identified in **Figure 9, Appendix B**. Receptors that represent residences, schools, libraries, or other noise sensitive areas are shown in Table 1.

**TABLE 1
NOISE SENSITIVE RECEPTORS NEAR THE PROPOSED ACTION
NUMBER OF PERSONS POTENTIALLY AFFECTED**

Modeled Receptor ⁽¹⁾	Land Use	Number of residences represented by receptor	Number of Persons Potentially Affected ⁽²⁾
R13	Residential	1	4
R14	Residential	1	4
R15	Residential	1	4
R16	Residential	1	4
R17	Residential	1	4
R18	Residential	1	4
TOTAL		6	24

⁽¹⁾ See Factor Sheet D-3 for modeled receptor locations.

⁽²⁾ Assumes each residence includes a family of 4.

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 (see Table 2). However, typical noise levels may occur in the 75 to 95 dBA range at a distance of 50 feet.

**TABLE 2
CONSTRUCTION EQUIPMENT SOUND LEVELS**

Distance from Construction Site (feet)	Range of Typical Noise Levels (dBA) ⁽¹⁾
25	82-102
50	75-95
100	69-89
200	63-83
300	59-79
400	57-77
500	55-75
1,000	49-69

⁽¹⁾ Point sources = 6 dBA reduction per doubling of distance.

Source: EPA and WisDOT.

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:

To reduce the potential impact of construction noise, the special provisions for this project will require that motorized equipment shall be operated in compliance with all applicable local, state, and federal laws and regulations relating to noise levels permissible within and adjacent to the project construction site. All motorized construction equipment will be required to have mufflers constructed in accordance with the equipment manufacturer's specifications or a system of equivalent noise reducing capacity. It will also be required that mufflers and exhaust systems be maintained in good working condition, free from leaks and holes.

TRAFFIC NOISE EVALUATION

Wisconsin Department of Transportation

Factor Sheet D-3

Alternative Build Alternative 2: Full Diamond with Two Loops	Total Length of Center Line of Existing Roadway: 1.4 mi. Length of This Alternative: 2.8 mi.
Preferred <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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.

The proposed action includes alteration of the vertical alignment of USH 12, and the addition and relocation of interchange ramps in the northwest and southeast quadrants of the IH 94 / USH 12 interchange. Therefore, the proposed action meets the definition of a Type I project as described in 23 CFR 772.5.

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. A receptor location map must be included with this document.

Modeled Receptor Locations

See attached receptor location map (**Figure 9, Appendix B**).

Traffic Noise Modeling

Existing (year 2012) and future (year 2035) Build Alternative sound levels were predicted using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM), Version 2.5 (February 2004) (Serial # 65265).

Existing Sound Levels (Field Measurements)

Existing sound levels were monitored at three representative receptor sites adjacent to the proposed construction area which was chosen to represent areas of outdoor human activity. Noise monitoring locations are described below in Table 1 and illustrated in **Figure 9, Appendix B**. Daytime sound levels were monitored in September 2014. Sound levels were measured using a Bruel & Kjaer Type 2238 Mediator integrating sound level meter. Sound levels were monitored at each location for a measurement period of 30 minutes. The field measurement results are presented below in Table 1.

**TABLE 1
FIELD MEASUREMENT SUMMARY TABLE**

Receptor Identification	Location Description	Measurement Time		Leq ¹
		Start	End	
R1	102 Rodeo Drive, restaurant patio facing IH 94	1:00 pm	1:35 pm	65.6
R4	625 Commerce Drive, back of building facing IH 94	12:06 pm	12:36 pm	73.2
R13	672 Gilbert Road, residential backyard facing CTH N	1:55 pm	2:25 pm	52.8

The purpose of the field measurements is to validate the noise model runs used to predict existing sound levels for the proposed action. A discrepancy equal to or less than 3 dBA between predicted levels and field measurements is considered acceptable for noise model validation. Results of field measurements are compared to sound levels predicted by the noise model in Table 2. A positive difference indicates that the field measurements were greater than the sound levels predicted by the model. A negative difference indicates that the field measurements were less than the sound levels predicted by the model.

**TABLE 2
MODEL VALIDATION**

Receptor Identification	Measured Leq (dBA)	Modeled Leq (dBA)	Difference (dBA) (Measured-Modeled)
R1	65.6	62.2	-3.4
R4	73.2	70.5	-2.7
R13	52.8	57.5	4.7

As shown in Table 2, modeled traffic noise levels varied from 3.4 dBA (L_{eq}) below field measurements at Receptor R1 to 4.7 dBA (L_{10}) above field measurements at Receptor R13 using classified traffic counted during the measurement periods (e.g., cars, medium trucks, heavy trucks). The speeds used for the model predictions were posted speeds (e.g., 65 miles per hour [mph] for IH 94). Although the discrepancy between field measurements and predicted levels was greater than 3 dBA (L_{eq}) at the measured receptor locations, it was determined that it was best to use the prediction model without corrections. It is considered better to over predict uncorrected traffic noise levels, which yield a worst-case scenario, than to under predict noise levels when determining traffic noise impacts and mitigation effectiveness.

- C. Identify sensitive receptors, e.g., schools, libraries, hospitals, residences, etc. potentially affected by traffic sound:

See attached receptor location map (**Figure 9, Appendix B**).

Sensitive receptors within the project area potentially affected by traffic sound primarily include residences and commercial sites.

Six residential receptors (Receptors R13-R18) are located in the southeast quadrant of the IH 94 / USH 12 interchange and in the southwest quadrant of the USH 12 / CTH N intersection. As such, these modeled noise levels were compared to Federal Activity Category B (see Table 5). Residential receptors were modeled halfway between the property right of way line facing IH 94 and the residence.

Commercial/office uses are located on the north side of IH 94 and in the southwest quadrant of the IH 94/USH 12 interchange. As such, these modeled noise levels were compared to Federal Activity Category E (see Table 5). If the commercial/office property had an area designated for outdoor activity (e.g., patios, benches, outdoor dining areas), then the modeled receptor was placed at this location. If no area of frequent outdoor use was identified, the modeled receptor point was placed at the entrance of the commercial/office building closest to IH 94 or USH 12, depending on which roadway was closer (i.e., approximately 10 feet from the façade of the building).

Two industrial buildings were modeled in the project area (Receptors R3 and R6). While industrial land uses are not subject to Federal Noise Abatement Criteria, modeled noise levels are reported below in Table 5.

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.

A traffic noise impact for Type I projects are described in Chapter 23, Section 30 of the WisDOT Facilities Development Manual (FDM) (Noise Impact Determination). A traffic noise impact occurs for a Type I project when the predicted equivalent sound levels at a receptor or common use area approach or exceed the Noise Level Criteria (NLC) for any Land Use Category listed in Table 3 applicable in the study area, or, when predicted future sound levels exceed existing levels by 15 dBA or more. "Approach" is defined as 1 dBA less than the NLC for the applicable Land Use Category.

The Noise Level Criteria (NLC) is approached or exceeded at two modeled receptor locations with the future Build Alternative. Existing and projected sound levels are tabulated in Table 4.

**TABLE 3
NOISE LEVEL CRITERIA (NLC) FOR CONSIDERING BARRIERS**

Land Use Category	Leq(h) ¹ (dBA) (Evaluation Location)	Description of Land Use Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ²	67 (Exterior)	Residential
C ²	67 (Exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, recreation areas, schools, Section 4(f) sites, television studios, trails, and trail crossings
D ³	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools, and television studios
E ²	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), warehousing.
G	--	Undeveloped lands that are not permitted.

¹ "Leq" means the equivalent steady-state sound level, which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same period. "Leq(h)" means the hourly value of Leq.

² Includes undeveloped lands permitted for this activity category or publicly-owned recreation lands formally designated in a public agency's Master Plan.

³ Use of interior noise levels shall be limited to situations where a determination has been made that exterior abatement measures will not be feasible and reasonable and after exhausting all outdoor mitigation options.

**TABLE 4
EXISTING AND FUTURE SOUND LEVELS**

Receptor Location or Site Identification (See attached map)	Distance from C/L of Near Lane to Receptor in feet (ft.)	Number of Families or People Typical of this Receptor Site	Sound Level L_{eq}^1 (dBA)			Impact Evaluation		
			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)
R1 (C)	502 ⁴	1	72	65	61	4	-7	No
R2 (C)	543 ⁴	3	72	66	60	5	-7	No
R3 (I)	528 ⁴	1	N/A ⁶	63	60	2	N/A ⁶	N/A ⁶
R4 (C)	145 ⁴	1	72	71	69	2	-1	Yes
R5 (C)	242 ⁴	1	72	67	66	2	-5	No
R6 (I)	170 ⁴	1	N/A ⁶	70	68	2	N/A ⁶	N/A ⁶
R7 (C)	304 ⁴	1	72	67	66	2	-5	No
R8 (C)	395 ⁵	1	72	66	64	1	-6	No
R9 (C)	196 ⁵	1	72	63	61	2	-9	No
R10 (C)	515 ⁵	1	72	64	62	1	-9	No
R11 (C)	147 ⁵	1	72	65	61	4	-7	No
R12 (C)	355 ⁵	1	72	60	57	3	-12	No
R13 (R)	225 ⁵	1	67	61	57	3	-6	No
R14 (R)	42 ⁵	1	67	72	69	3	5	Yes
R15 (R)	538 ⁴	1	67	60	58	2	-7	No
R16 (R)	343 ⁴	1	67	65	63	2	-2	No
R17 (R)	367 ⁴	1	67	65	62	2	-3	No
R18 (R)	561 ⁴	1	67	61	59	2	-6	No

(C) = Commercial

(R) = Residential

(I) = Industrial

⁴ Distance from C/L of near lane of IH 94 (Preferred Alternative).

⁵ Distance from C/L of near lane of USH 12/CTH N (Preferred Alternative).

⁶ Not applicable – industrial land uses are not subject to Federal Noise Abatement Criteria.

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:

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). Yes = Impact, No = No Impact.

Noise Abatement Measures

23 CFR 772.15(c) describes noise abatement measures that are to be considered when a traffic noise impact has been identified with a Type I highway project. These noise abatement measures include:

- Traffic management measures, including, but not limited to, traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
- Alteration of horizontal and vertical alignments.
- Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise.
- Construction of noise barriers, including acquisition of property rights, either within or outside the highway right of way. Landscaping is not a viable noise abatement measure.
- Noise insulation of Activity Category D land use facilities listed in Table 4 (auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios). There are no land uses that fall under Activity Category D within the project area.

Because mitigation techniques on this project are not feasible and reasonable as described below, noise abatement is not proposed.

Traffic Control Measures

Traffic control measures include such items as prohibition of certain vehicle types (usually trucks) and time-use restrictions for certain vehicle types (usually trucks). These measures are not feasible or reasonable because they would be incompatible with the purpose and need for the proposed action, and inconsistent with the function of the IH 94 corridor as a principal arterial route.

Buffer Zones

Buffer zones are undeveloped, open spaces adjacent to a roadway corridor. Land uses adjacent to the project corridor consist of primarily commercial/industrial and agricultural uses. Because of the amount of land needed and because existing development already borders the IH 94/USH 12, creating a buffer zone is not practical, feasible, or reasonable. See below for a discussion of information for local officials and setback distances.

Noise Barriers

WisDOT's policies and procedures for evaluating noise barrier feasibility and reasonableness are set forth in Chapter 23 of the FDM and in Wisconsin Administrative Rules TRANS 405. The factors for determining noise barrier feasibility and reasonableness as described in the WisDOT noise policy are summarized below.

Noise Barrier Feasibility

Noise barrier feasibility is determined based on a consideration of two factors: 1) acoustic feasibility and 2) engineering feasibility (FDM 23-35-10).

- **Acoustic feasibility:** For a noise abatement measure to be feasible, a minimum of one (1) impacted receptor or common use area shall achieve a 5 dBA reduction.
- **Engineering feasibility:** Other factors that must be considered include safety, barrier height, topography, drainage, utilities, and maintenance of the abatement measure, maintenance access to adjacent properties, and access to adjacent properties.

The feasibility of noise barrier construction is sometimes dependent on design details that are not known until the final design phase of the project. For the purpose of this traffic noise analysis, it was assumed that noise barriers were feasible with respect to engineering feasibility/constructability considerations. It was also assumed that utilities located within existing right of way could be relocated to accommodate modeled noise barriers, and existing and proposed drainage could be maintained. All modeled noise barriers were located within existing and/or proposed right of way limits.

Noise Barrier Reasonableness

Noise barrier reasonableness decisions are based on a consideration of three reasonableness factors: 1) noise reduction design goal, 2) cost effectiveness, and 3) the viewpoint of benefited residents and property owners.

- **Noise reduction design goal:** To make a reasonableness determination, a noise barrier shall be designed (horizontal and vertical location) such that a minimum of one (1) receptor or common use area achieves the WisDOT noise reduction design goal of 9 dBA.
- **Cost effectiveness:** For a noise barrier to be reasonable, the total cost may not exceed \$30,000 per benefited receptor. In order to assess cost effectiveness, at least one benefited receptor behind the noise barrier must meet the noise reduction design goal described above (i.e., achieve the noise reduction design goal of 9 dBA). A noise barrier shall reduce noise levels by a minimum of 8 dBA for a receptor or common use area to be considered as benefited for the purposes of determining reasonableness.

The cost of a noise wall is calculated using the total noise wall area multiplied by \$18 per square foot. If the noise wall is placed on top of a berm, the cost of borrow, if required, is calculated using the latest borrow costs available.

Local participation and viewpoint of benefited receptors

When a noise barrier has been determined feasible and reasonable (i.e., meets noise reduction design goal and cost effectiveness), a determination of whether or not the abatement measure is likely to be incorporated into the project shall occur. The determination of “likely to be incorporated” is done through at least one public information meeting and a vote of the benefited receptors.

For a proposed noise barrier project to be considered for construction, WisDOT must receive a vote of support for the project from a simple majority of all votes cast by the owners or residents of the benefited receptors. A benefited receptor is defined as a receptor or common use area adjacent to a proposed noise wall that receives a noise reduction equal to or greater than 8 dBA. Input received from benefited receptors is expressed in a vote as follows:

- For each benefited receptor that is an owner-occupied residence, the owner shall have one vote
- For each benefited receptor that is not an owner-occupied residence, the owner shall have one vote and one resident shall have one vote

Noise Barrier Analysis Results

Noise barriers were evaluated at all modeled receptor locations that are predicted to approach or exceed Federal Noise Level Criteria (NLC). None of the modeled receptor locations are projected to experience a substantial increase in modeled noise levels from existing to future Build conditions (i.e., when predicted future sound levels exceed existing levels by 15 dBA or more). TNM was used to determine traffic noise reductions provided by various noise barrier lengths and heights. The locations of modeled noise barriers are illustrated in **Figure 9, Appendix B**. Noise barrier cost-effectiveness results are tabulated in Table 5 (Summary of Noise Abatement Analysis). The modeled noise barriers would not meet WisDOT’s reasonableness criteria (i.e., noise barrier cost effectiveness), and are therefore not proposed as discussed below.

- **Barrier 1: Northeast quadrant of IH 94/USH 12 interchange (Receptor R4)**

An approximately 1,200 foot long noise barrier was evaluated in the northeast quadrant of the IH 94/USH 12 interchange. The modeled barrier was located within existing highway right of way. A 20-foot tall noise barrier would result in a 9 dBA noise reduction for Receptor R4, which meets the 9 dBA noise reduction design goal. One benefited receptor representing a commercial business (Receptor R4) is located adjacent to the modeled noise barrier. The total estimated cost to construct the noise barrier would be \$475,200. The cost effectiveness of modeled Barrier 1 is \$475,200 per benefited receptor, which exceeds the WisDOT cost effectiveness threshold of \$30,000 per benefited receptor. Therefore, modeled Barrier 1 is not considered reasonable and is not proposed.

- **Barrier 2: East side of CTH U between CTH N and IH 94 (Receptor R14)**

An approximately 400 foot long noise barrier was evaluated along the east side of CTH U between CTH N and IH 94. The modeled barrier was located within existing right of way limits along the east side of CTH U. A 20-foot tall noise barrier would result in an 8 dBA noise reduction, which does not meet the 9 dBA WisDOT noise reduction design goal. Therefore, modeled Barrier 2 is not considered reasonable and is not proposed.

**TABLE 5
SUMMARY OF NOISE ABATEMENT ANALYSIS**

Modeled Noise Barrier	Height (feet)	Length (feet)	Estimated Barrier Cost (\$18/sf) ⁽¹⁾	# of Benefited Receptors ⁽²⁾	Noise Reduction (dBA)	Estimated Cost per Benefited Receptor	Is modeled barrier feasible and reasonable?	If no, reason why?
Barrier 1 (commercial)	20	1,200	\$475,200	1	9	\$475,200	No	Modeled barrier does not meet WisDOT C/E threshold of \$30,000.
Barrier 2 (residential)	20	400	\$158,400	1	8	N/A ⁽²⁾	No	Modeled barrier does not meet WisDOT design goal of 9 dBA reduction at one receptor

C/E = cost effectiveness

⁽¹⁾ Estimated barrier cost includes noise wall cost (\$18/sf) Does not include estimated costs to accommodate any necessary utility relocations.

⁽²⁾ A noise barrier shall reduce noise levels by a minimum of 8 dBA for a receptor or common use are to be considered as benefited for the purposes of determining reasonableness.

Sound Level Information for Local Officials

Undeveloped lands that are not permitted are located in the southeast quadrant of the IH 94/USH 12 interchange. 23 CFR 772.17 requires that information be provided to local official related to future traffic noise impacts on currently undeveloped lands. The purpose of this is to promote compatibility between future development and anticipated highway sound levels and to avoid future traffic noise impacts on undeveloped lands not currently permitted.

Traffic noise levels were modeled at representative receptor locations at incremental setback distances along IH 94 under future (2035) Build Alternative conditions (e.g., 100 feet, 200 feet, 300 feet, etc. from the centerline of eastbound IH 94). This analysis was based on existing topography in the project area, and assumed no intervening barriers or structures between the modeled receptor locations and IH 94. Results of the setback distance noise modeling analysis are tabulated in Table 6.

**TABLE 6
SOUND LEVEL INFORMATION TO LOCAL OFFICIALS – SETBACK DISTANCES**

Distance from centerline of eastbound IH 94	Future Sound Level (dBA, Leq)
100 feet	73
200 feet	69
300 feet	67
400 feet	66
500 feet	63

In an effort to prevent future traffic noise impacts on currently undeveloped lands adjacent to the project, the 66 dBA (Leq) setback distance along eastbound IH 94 would be between 400 and 500 feet for residential land uses. The 71 dBA (Leq) setback distance along eastbound IH 94 would be between 100 feet and 200 feet for commercial land uses.

HAZARDOUS SUBSTANCES OR CONTAMINATION EVALUATION

Wisconsin Department of Transportation

Factor Sheet D-4

Alternative Build Alternative 2: Full Diamond with Two Loops	Total Length of Center Line of Existing Roadway: 1.4 mi. Length of This Alternative: 2.8 mi.
Preferred <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> None Identified	

1. Briefly describe the results of the Phase 1 Hazardous Materials Assessment for this alternative. Do not use property identifiers (owner name, address or business name):

Site Reference #	Land Use of Concern (Past or Present)	Contaminants of Concern	Phase 1 Recommendations	Phase 2 Recommended?
				Y/N
3a	Veterinary Clinic	Hazardous wastes	Not an environmental release site. Site is located outside of project limits.	N
3b	Manufacturing	Steel and aluminum	Not an environmental release site. Site is located outside of project limits.	N
3c	Gas Station	Diesel fuel	Information on the Wisconsin BRRS website indicated piping and a pump associated with a UST was relocated. No detections or insignificant contamination was identified in an environmental assessment report. The BRRS listing indicated "No Action Required". A Phase 2 Environmental Assessment Report also found no detects or insignificant contamination. Site is located outside of project limits.	N
3d	Bank	None / Unknown	No environmental release reported at site. Site is located outside of project limits.	N
3e	Construction service and supply store	Ignitable hazardous wastes, fuel oil	No environmental release reported at site. Site is located outside of project limits.	N
4a	Sanitation	Ignitable hazardous wastes, halogenated solvent wastes	No environmental release reported at site. Site is located outside of project limits.	N
4b	Adhesive and primer sales	Ignitable hazardous wastes, methyl ethyl ketone	No environmental release reported at site. Site is located outside of project limits.	N
5	Restaurant	None / Unknown	No environmental release reported at site. Unlikely to impact project.	N
6	Waterworks product distribution	Ignitable hazardous wastes, halogenated solvent wastes, mercury, benzene, and methyl ethyl ketone	No environmental release reported at site. Unlikely to impact project.	N
7	Child care facility	None / Unknown	No environmental release reported at site. Unlikely to impact project.	N
10	Insulation sales	Hazardous wastes	No environmental release reported at site. Unlikely to impact project.	N
11	Gas station / truck stop	Ignitable hazardous wastes, fuel oil	Potential exists to encounter soil and/or groundwater contamination during project construction activities. A Phase 2 Investigation including soil borings is recommended within the USH 12 right of way adjacent to the site.	Y

Site Reference #	Land Use of Concern (Past or Present)	Contaminants of Concern	Phase 1 Recommendations	Phase 2 Recommended?
				Y/N
20	Highway department site	Diesel fuel	LUST site closed in 1996. Information on the Wisconsin BRRTS website indicated petroleum contamination (diesel fuel) to soil was investigated and the LUST site closed.	TBD
37	Print shop	Ignitable hazardous wastes	No environmental release reported at site. Strip taking required from property along west side of CTH U. Unlikely to impact project.	N

BRRTS = Bureau of Remediation and Redevelopment Tracking System

LUST = Leaking underground storage tank

TBD = To be determined.

2. Were any parcels not included in the Phase 1 assessment?

- ☒ No
☐ Yes - How many:
Why were they not reviewed?

3. Have Phase 2 or 2.5 Assessments been completed? Discuss the results:

Site Reference #	Phase 2/2.5 Recommendations	Remediation Recommended?		Is WisDOT a Responsible Party?	
		Yes	No	Yes	No

Phase 2 or Phase 2.5 Assessments have not been completed. See Item 7 below for a discussion of additional investigations.

4. Describe the results of any additional investigations performed by WisDOT or others: (Include the number of sites investigated, the level of investigation and results for each site).

Not applicable. WisDOT has not performed any additional investigations. There are no known investigations by others. WisDOT will complete any necessary Phase 2 investigations during design.

5. Describe proposed action to avoid hazardous materials contamination:

The Proposed Action utilizes existing highway right of way to the extent feasible. Further avoidance and minimization of hazardous materials contamination will be evaluated following completion of Phase 2 Assessments during design.

6. Describe the remediation and waste management practices to be included in the design for areas where contamination cannot be avoided (e.g., waste handling plan, remediation of contamination, design changes to minimize disturbances):

Reconstruction of USH 12 and CTH U as well as the construction of the proposed ramps and loops will require grading and excavation. Any contamination encountered during project construction will be handled in accordance with WisDOT standard specifications and applicable regulations in place at that time.

7. List any parcels with known contamination, proposed for acquisition:

Site 5

Site 5 is located in the northwest quadrant of the IH 94 / USH 12 interchange. Site 5 is a developed property (commercial uses), including a restaurant. Site 5 is listed in the Wisconsin Environmental System Registry (WI-ESR)

contains information about facilities, information, or persons related to WDNR. No specific releases or other contamination are known to be associated with Site 5.

The Proposed Acquisition is anticipated to require partial right of way acquisition from properties in the northwest quadrant of the IH 94 / USH 12 interchange. There are no reported environmental releases associated with Site 5. No further investigation is warranted for this site.

Site 11

Site 11 is located in the northeast quadrant of the IH 94 / USH 12 interchange. The site is currently in use as a gas station / truck stop. There are several underground storage tanks associated with Site 11. The facility is listed as both an open LUST site and a closed LUST site. Residual soil and groundwater contamination remain associated with the LUST site. Groundwater is at a depth of approximately 15 feet below ground surface on Site 11 and groundwater flow direction is to the west / northwest towards USH 12. Soil contamination exists at the west property line adjacent to USH 12.

The Proposed Action is anticipated to require a partial acquisition (i.e., strip taking) from Site 11 along the westbound IH 94 exit ramp to USH 12. Right of way acquisition along the east side of USH 12 adjacent to Site 11 is not anticipated. The Proposed Action will not impact any of the underground storage tanks associated with Site 11. Because groundwater flow in the project area is from east to the west / northwest, it is possible that some petroleum contamination may have migrated from Site 11 into USH 12 right of way. Therefore, Site 11 is recommended for additional investigation prior to construction. A Phase 2 investigation is recommended to determine the extent of any contamination within USH 12 right of way.

Site 20

Site 20 is located in the northwest quadrant of the CTH U / CTH N intersection. Site 20 is the site of a former St. Croix County Highway Department facility. The site is currently in use as a commercial business (automotive repairs). Information on the WDNR's Bureau of Remediation and Redevelopment Tracking System (BRRTS) website indicated that soil contamination (petroleum, diesel fuel) was present at the site. The LUST site at this property was closed in 1996.

The Proposed Action is anticipated to require partial acquisition (i.e., strip taking) from this property along the west side of CTH U, north of CTH N. Past on past land uses, current uses as an automotive repair business, and past petroleum contamination, Site 20 is recommended for further investigation. While the LUST site at this property is closed, it is possible that some soil contamination may still remain. The need for additional investigations at Site 20 will be determined during design.

Site 37

Site 37 represents commercial land uses in the southwest quadrant of the IH 94 / USH 12 interchange. One of the commercial businesses located at the site is registered as a conditionally exempt small quantity generator of hazardous wastes. The site has no violations listed, and no environmental releases have been reported.

The Proposed Action is anticipated to require partial acquisition (i.e., strip taking) from the commercial properties south of IH 94 and along the west side of CTH U. Based on current land uses and that there are no environmental releases reported, no further investigation is warranted for this site

8. Bridge Projects Only: Has the structure been inspected for the presence of asbestos containing materials (ACMs)?

☐ No - Explain

☒ Yes:

Were regulated ACMs identified?

☒ No

☐ Yes:

State the standard language to be incorporated in the special provisions of the project:

Appendix A

Alternative Selection Report

NR Region Alternative Selection Report

DRAFT: April 14, 2014

FINAL: November 4, 2014

1020-00-06
I-94 Hudson Area Interchange Study

**I-94/Carmichael Road &
I-94/USH 12
Interchanges**

St. Croix County

**Prepared for:
Wisconsin Department of Transportation**



**Prepared by:
SRF Consulting Group**



Table of Contents

Alternative Selection Report.....	1
Executive Summary	2
Milestones*	2
Background	3
Existing Facilities.....	3
Existing Characteristics	3
Purpose.....	3
Need	4
Study Limits.....	5
Alternative Descriptions	5
Interchange Concepts.....	6
Alternative Discussion	8
Carmichael Road Interchange Evaluation	8
USH 12 Interchange Evaluation	9
Evaluation Criteria.....	9
Public Information Meeting.....	10
Carmichael Road.....	10
USH 12.....	11
Findings.....	11
City of Hudson Joint Council/Planning Commission Meeting	11
Recommendations	12
Carmichael Road.....	12
USH 12.....	12
Appendix A: Sub Area Concepts.....	15
Appendix B: Initial Alternative Concepts	16
Appendix C Initial Concept Evaluation Matrices.....	17
Appendix D Refined Alternative Concepts.....	18
Appendix E Refined Concept Evaluation Matrix	19

Appendices

Appendix A: Sub Area Concepts

Appendix B: Initial Alternative Concepts

Appendix C: Initial Concept Evaluation Matrices

Appendix D: Refined Alternative Concepts

Appendix E: Refined Alternative Matrix

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Alternative Selection Report

This Alternative Selection Report (ASR) is intended to cover the background, purpose and need, and the selection of alternatives for further study. At this stage, the signatures and signature page indicate:

1. They are in agreement that a reasonable number of alternatives were considered and evaluated, resulting in the selection of the alternatives that will be carried forward.
2. The 2D layout and concept of the alternatives are acceptable and that further design of the remaining alternatives will need to be completed and reviewed prior to the selection of the preferred alternative, which will occur in future phases of this project.

Executive Summary

Interstate 94 (I-94) has existing interchanges at State Trunk Highway (STH) 35 North, Carmichael Road, STH 35 South, and US Highway (USH) 12 to serve the Hudson area. This study focuses on the two key interchanges at Carmichael Road (CTH A and CTH F) and USH 12. I-94, Carmichael Road, and USH 12 are designated Principal Arterials. With projected growth, intersections at and adjacent to these interchanges are expected to operate at unacceptable levels of service by year 2035. These poor intersection operations are expected to generate traffic queues that spill back onto I-94.

Multiple interchange concepts were developed and analyzed to address traffic operational issues. These concepts for both locations were considered and evaluated in collaboration with Northwest Region Staff and local stakeholders. Alternatives were then dismissed from consideration, resulting in the three concepts (two at Carmichael Road and one at USH 12) to be shared with the public.

A Public Information Meeting (PIM) held on July 1, 2014 at the St. Croix County Government Center. Based on the feedback received at the PIM, a clear recommended alternative at Carmichael Road was not identified. There was support for both options. At the I-94/USH 12 interchange, Concept E, the full diamond interchange with two loops, received positive feedback and support.

A joint City Council/Planning Commission meeting was held at the City of Hudson Council Chambers on September 30, 2014 to help determine the recommended alternative at Carmichael Road. This meeting resulted in the Council and Planning Commission voting unanimously in support of Concept D, the folded AB interchange option.

Based on the operation assessment and the stakeholder feedback, Concept D at Carmichael Road and Concept E at USH 12 are recommended to move forward for future analysis and refinement.

Milestones*

- | | |
|--|--------------------|
| • Draft Alternative Selection Report | April 2014 |
| • Local Officials Meeting | July 1, 2014 |
| • Public Information Meeting | July 1, 2014 |
| • City of Hudson Council/Planning Commission | September 30, 2014 |
| • Final Alternative Selection Report | November, 2014* |
| • Environmental Assessment for USH 12 Only | February 2015* |
| • Official Mapping for USH 12 Only | March 2015* |
| • Public Hearing for USH 12 Only | March 2015* |

* Dates to be confirmed

Background

Existing Facilities

I-94 runs west to east across Wisconsin, connecting states from Montana to Michigan. I-94 is a highway with both state and federal significance. Existing interchanges at STH 35 North, Carmichael Road, STH 35 South, and USH 12 serve the Hudson area. This study focuses on two key interchanges at Carmichael Road and USH 12. I-94, Carmichael Road, and USH 12 are designated Principal Arterials. See Figure 1 below for a map of the study area.

Figure 1: Study Location



Existing Characteristics

The roadway capacity of I-94 varies throughout the project area. To the west of STH 35 (S), I-94 is primarily a six-lane roadway with auxiliary lanes between STH 35 (N) and Carmichael Road. To the east of STH 35 (S), eastbound I-94 is a three-lane roadway and westbound I-94 is a two-lane roadway. Current AADTs on I-94 range from 93,000 at the Wisconsin/Minnesota state line to 49,000 east of USH 12. I-94 has a 65 miles per hour (mph) posted speed limit.

Carmichael Road is an urban six-lane roadway south of the I-94 interchange and an urban four-lane roadway north of the I-94 interchange. Current AADTs on Carmichael Road range from 35,900 south of I-94 to 15,500 north of I-94. The posted speed limit on Carmichael road is 45 mph.

USH 12/CTH U is a rural four-lane roadway north and south of I-94. Current AADTs on USH 12/CTH U range from 5,000 south of I-94 to 12,200 north of I-94. The posted speed limit on USH 12/CTH U is 45 mph.

Purpose

Currently, operational issues are beginning to develop at both key interchanges. Results of the traffic operations analysis indicated that both interchanges will not be able to support future traffic demand and operational issues are expected to develop that will impact I-94 mainline. The purpose of the project is to develop solutions to address interchange traffic operations issues to serve both local and regional traffic needs and prevent future operational issues on I-94.

St. Croix County and the communities surrounding the project area are growing rapidly, with a 72 percent increase in population forecast between year 2008 and 2030, according to the West Central Wisconsin Comprehensive Plan (2008). The existing interchange configurations (Carmichael Road and USH 12) are unable to support future year traffic demand due to the planned development for the area. This area currently supports a large amount of heavy trucks. The current design at each location is unable to support the future demand for both passenger cars and trucks, with poor Levels of Service (LOS) for multiple intersections (see Table 1 below). The results of the operations analysis indicate that both interchange locations will generate traffic queues that spill back on the mainline, causing operational issues on I-94.

Table 1: Existing and Future (2035) No Build Level of Service Results

Location	AM Peak Hour LOS		PM Peak Hour LOS	
	Existing	Year 2035 No Build	Existing	Year 2035 No Build
Carmichael Road				
At Coulee Road/N Frontage Road	B	C	C	F
At Westbound I-94 Ramps	B	C	C	C
At Eastbound I-94 Ramps	B	B	C	E
At Crestview Drive/Stageline Road	C	C	D	F
USH 12				
At Rodeo Circle	B	E	B	B
At Westbound I-94 Ramps	A	E	A	C
At Eastbound I-94 Ramps	B	E	C	E
At CTH N/CTH U	A	F	A	E

Need

Carmichael Road

The specific issues that the selected alternative should address are:

- Existing and future anticipated operational issues associated with future traffic growth. The traffic volumes along Carmichael Road are expected to nearly double north of Coulee Road and South of Crestview Drive. The four intersections in this relatively short length need to accommodate high turning volumes. The traffic volumes using the Carmichael Road Bridge are comparable to any interchange within the Minneapolis/St. Paul urban area.
- The spacing of the existing intersections does not provide enough turn lane length and enough weave distance. Coulee Road is only 350 feet north of the westbound I-94 ramps and Crestview Drive is only 600 feet from the eastbound I-94 ramps.
- The City of Hudson is under pressure to allow more intensive development of lands along Carmichael Road to the north of the interchange. Wal-Mart would like to develop the northeast quadrant of the interchange into a new Supercenter. In addition, the existing golf course ¼ mile north of the interchange has requested the City to allow redevelopment of that property. The current interchange design will not function if those properties redevelop along with other planned growth in the area.

USH 12/CTH U

The specific issues that the selected alternative should address are:

- Existing and future anticipated operational issues associated with future traffic growth. The traffic volumes along USH 12/CTH U are expected to nearly double north of the I-94 interchange and nearly triple on the south side of the I-94 interchange. The existing afternoon/evening peak hour volumes will grow to a point that the existing ramp intersection will not provide enough capacity to prevent traffic queues from backing up into the auxiliary lane, once this happens eastbound I-94 will operate at LOS F.
- The St. Croix County travel demand model is predicting significant traffic growth between this interchange and the City of River Falls. This will max out the capacity of the existing auxiliary lane.
- The grades at the eastbound ramp intersection make it difficult for large trucks to accelerate when stopped at the ramp intersection. The current interchange sees heavy truck usage and this will grow in the future.
- The selected alternative needs to provide reserve capacity to handle redevelopment of vacant/agricultural property that will use this interchange as access to I-94.

Study Limits

The project area begins at the Wisconsin State Line at the St. Croix River and continues east of USH 12 for a total length of six miles (see Figure 1). The study area lies within the City of Hudson and Town of Hudson in St. Croix County.

Alternative Descriptions

This section describes all of the alternatives considered for the project. These consist of local overpass options near Carmichael Road, interchange options for the I-94/Carmichael Road interchange and interchange options for the I-94/USH 12 interchange.

Local Overpass Concepts

A Sub Area Study was conducted that focused on the Carmichael Road area to evaluate travel pattern shifts associated with roadway network changes (traffic volume reductions) in an attempt to improve operations while minimizing the magnitude of improvements at the I-94/Carmichael Road interchange. A total of nine local roadway overpass scenarios were studied as shown in Appendix A. The alignments studied would have varying levels of traffic reduction at the I-94/Carmichael Road interchange, but would also direct traffic into surrounding neighborhoods. A few options were carried forward into additional study with interchange concepts at Carmichael Road. Due to the level of impacts to neighborhoods with limited benefits, the overpass options were not carried forward for further study.

Interchange Concepts

The concepts discussed below were reviewed with local stakeholders, including the City of Hudson, Town of Hudson, and St. Croix County, who provided input and guided the process to evaluate alternatives. These concept alternatives are shown in Appendix B.

Carmichael Road

Concept A – Intersection Improvements

Concept A consists of additional turn lanes at key intersections and other roadway improvements that do not impact the bridge over I-94, the interchange configuration or require right-of-way.

Concept B – Loop with Modified Frontage Roads

Concept B consists of constructing an eastbound I-94 exit loop ramp in the southeast quadrant of the interchange to help reduce conflicts at the south ramp intersection. In addition, the frontage road in the northeast quadrant would be relocated to the north, a new backage road would be constructed in the northwest quadrant and Coulee Road access to Carmichael Road would be modified to a right-in/right-out access. These improvements were considered to improve intersection spacing along Carmichael Road.

Concept C – Loop with Modified Frontage Roads and Westbound I-94 Ramps

Concept C is basically Concept B with a modification to the westbound I-94 ramps. The westbound ramp intersection would be relocated to the north to improve overall intersection spacing along the corridor. This option would require the closure of Coulee Road between 19th Street and Carmichael Road. Primary access for all properties in this location would be provided via the backage road.

Concept D – Folded AB with Modified Frontage Roads

The folded AB interchange option consists of constructing loop ramps in the northeast and southeast quadrants to serve the eastbound I-94 to northbound Carmichael Road traffic and the northbound Carmichael Road to westbound I-94 traffic, respectively. These loops will minimize movement conflicts at both the north and south ramp intersections. The eastbound I-94 on ramp and westbound I-94 off ramp would be relocated to align across from Crestview Drive and Coulee Road, respectively. The frontage road in the northeast quadrant will be relocated to the north and Stageline Road in the southeast quadrant will be relocated one block to the south.

Concept E – Single Point Interchange

The single point interchange option would require a full bridge replacement but would have minimal right-of-way impacts and local access roadways would not be relocated. This concept will combine the two ramp terminal traffic signals into one traffic signal located on the bridge, thus reducing the number of traffic signals along Carmichael Road and will increase intersection spacing.

Concept F – Offset Single Point Interchange

The offset single point interchange option consists of locating the single traffic signal farther north to increase intersection spacing with Crestview Drive and Stageline Road. To accommodate the bridge relocation, the frontage road in the northeast quadrant would be relocated to the north, a new backage road would be constructed in the northwest quadrant and Coulee Road access to Carmichael Road would be modified to a right-in/right-out access.

Concept G – Diverging Diamond Interchange

The diverging diamond concept is a variation on the traditional diamond interchange that converts multi-conflict intersections into more simple conflict intersections. This is accomplished by guiding traffic to the left-side of the roadway through the interchange. These types of interchanges are well suited in situations with a lot of turning vehicles. The Coulee Road access to Carmichael Road would be closed due to the close spacing of the new north ramp intersection. A new backage road would serve as the primary access to Carmichael Road for businesses in the northwest quadrant of the interchange.

USH 12/CTH U

Concept A – Intersection Improvements

Concept A consists of additional turn lanes at the key intersections and other roadway improvements that do not impact the bridge over I-94, the interchange configuration or require right-of-way.

Concept B – Partial Diamond with Loop

Concept B consists of constructing an eastbound I-94 to USH 12/CTH U loop ramp in the southeast quadrant of the interchange to help reduce conflicts at the south ramp intersection while providing an easier maneuver for the large amount of trucks that use this interchange. This option removes the ramp in the southwest quadrant and does not require widening of the bridge over I-94.

Concept C – Full Diamond with Loop

Concept C is similar to Concept B, but maintains the ramp in the southwest quadrant for eastbound to southbound traffic. This reduces the traffic conflicts at the south ramp intersection. This option does not require widening of the bridge over I-94.

Concept D – Full Diamond with Loop

Concept D is similar to Concept C, but allows the eastbound I-94 to northbound USH 12 loop ramp in the southeast quadrant to be a free flow movement for eastbound to northbound traffic which will significantly benefit heavy trucks. This option will require the widening of the bridge over I-94.

Concept E – Full Diamond with Two Loops

Concept E is similar to Concept D, with the addition of a westbound I-94 to southbound CTH U loop ramp in the northwest quadrant. This option minimizes conflict at the north ramp intersection and provides the most reserve capacity for future traffic. This option will require the widening of the bridge over I-94.

Concept F – Partial Diamond with Two Loops

Concept F is similar to Concept B, but provides a northbound USH 12/CTH U to westbound I-94 loop ramp in the northeast quadrant to minimize conflict at the north ramp intersection. This option removes the ramp in the southwest quadrant and requires the widening of the bridge over I-94.

Concept G – Full Diamond with Two Loops

Concept G is similar to Concept D, but provides a northbound USH 12/CTH U to westbound I-94 loop ramp in the northeast quadrant to minimize conflict at the north ramp intersection. This option will require the widening of the bridge over I-94.

Alternative Discussion

The concepts identified in the previous section were evaluated based on future traffic operations, traffic signal spacing, parcel impacts, total acreage of property impacts, and wetland impacts. The results of the Carmichael and USH 12 interchange evaluations are provided in the matrices in Appendix C.

Carmichael Road Interchange Evaluation

Based on the evaluation of the Carmichael Road interchange options, four options were carried forward for further discussion with the stakeholders. These options consisted of:

- Concept B (Loop with modified frontage roads) with Overpass C1
- Concept D (Folded AB with Modified Frontage Roads)
- Concept E (Single Point Interchange)
- Concept G (Diverging Diamond Interchange)

Based on feedback from the stakeholders, Concept B with Overpass C1 was eliminated due to the potential impacts the overpass would have to the residential community north of I-94. Additional discussion with Northwest Region Staff resulted in bringing back Concept F (Offset Single Point Interchange) for further evaluation.

More detailed concepts and a revised evaluation matrix were developed for the four remaining options. These options consisted of:

- Concept D (Folded AB with Modified Frontage Roads)

- Concept E (Single Point Interchange)
- Concept F (Offset Single Point Interchange)
- Concept G (Diverging Diamond Interchange)

These concepts are included in Appendix D and the evaluation matrix is included in Appendix E. Based on this second round of evaluation, Concept D (Folded AB with Modified Frontage Roads) and Concept G (Diverging Diamond Interchange) were recommended for further study because they produce the best intersection operations, provide the best option for pedestrian movements and do not require full bridge replacements. Therefore, Concept D (Folded AB with Modified Frontage Roads) and Concept G (Diverging Diamond Interchange) were recommended to move forward for public involvement activities.

USH 12 Interchange Evaluation

Based on the initial evaluation of the USH 12 interchange options, three options were carried forward for further evaluation. These options consisted of Concept C (Full Diamond with Loop), Concept D (Full Diamond with Loop) and Concept E (Full Diamond with Two Loops).

More detailed concepts were developed for the three remaining options; Concept C (Full Diamond with Loop), Concept D (Full Diamond with Loop) and Concept E (Full Diamond with Two Loops). Based on discussions with Northwest Region Staff, Concept C (Full Diamond with Loop) was eliminated because it did not provide a free flow movement which may cause issues with the amount of trucks that utilize this interchange and Concept D (Full Diamond with Loop) was eliminated because it did not provide the most reserve capacity for traffic growth beyond the horizon year of analysis. Therefore, Concept E (Full Diamond with Two Loops) was recommended to move forward for public involvement activities.

Evaluation Criteria

The initial evaluation of concepts included the following criteria:

Traffic Operations: Traffic operations were modeled for surrounding intersections for both interchange locations. Year 2012 existing conditions, interim year 2025 no build, and year 2035 no build operations were compared to year 2035 build conditions for all concepts. Options that did not achieve acceptable LOS D or better were eliminated from further study, as these options would not meet the purpose and need of the project.

Traffic Signal Spacing: Signal spacing was considered. Corridors with longer distance between signalized intersections tend to operate more efficiently.

Property Impacts: Property impact estimates were based on a rough footprint for each concept. Total number of parcels impacted (including full and partial acquisitions), property type (agricultural, commercial, and residential), and total acres of acquisition. The extent and type of property impacts was considered as a factor in alternatives selection.

Wetland Impacts: Measured in total acres based on the rough footprint representing construction limits, most concepts would have no wetland impact, and two (Carmichael Concepts F and G) would have minimal (0.07 acres) of wetland impacts. Wetland impacts were not generally a selection factor because all concepts had minimal impact.

A second round of evaluation was conducted for the Carmichael Road interchange. The criteria for this evaluation consisted of:

Operational Impacts and Issues: While all second round concepts would provide acceptable LOS, queue lengths were a differentiating factor.

Local Road Impacts: Changes to the local roadway network were considered as a selection criterion. More significant changes to the local system may not score well with local residents and business owners.

Pedestrian Accommodations: Concepts that provide pedestrian crossings at lower speed signalized crossings are preferred.

I-94 Operational Issues: Maintaining acceptable LOS along I-94 is required.

Bridge Needs: Overall bridge impacts were compared between concepts.

Interchange footprint: Overall concept footprint was considered, as a reflection of property impacts as well as impact to the surrounding communities.

Traffic Signal Spacing: Signal spacing was considered. Corridors with longer distance between signalized intersections tend to operate more efficiently.

Impacts to the Walmart TIA: Impacts to the Walmart site were considered as part of the evaluation process.

Public Information Meeting

The following concepts were presented at the Public Information Meeting (PIM) held on July 1, 2014 at the St. Croix County Government Center. A pre-PIM meeting was held with WisDOT staff, followed by a local agency meeting in advance of the PIM.

Carmichael Road

Concept D – Folded AB with Modified Frontage Roads

The folded AB interchange option consists of constructing loop ramps in the northeast and southeast quadrants to serve the eastbound I-94 to northbound Carmichael Road traffic and the northbound Carmichael Road to westbound I-94 traffic, respectively. These loops will minimize movement conflicts at both the north and south ramp intersections. The eastbound I-94 on ramp and westbound I-94 off ramp would be relocated to align across from Crestview Drive and

Coulee Road, respectively. The frontage road in the northeast quadrant will be relocated to the north and Stageline Road in the southeast quadrant will be relocated one block to the south. This concept is the only concept that provides LOS C or better at all four intersections and it provides the most reserve capacity for future development. However, this concept has a large footprint when compared to the other concepts currently under study.

Concept G – Diverging Diamond Interchange

The diverging diamond concept is a variation on the traditional diamond interchange that converts multi-conflict intersections into more simple conflict intersections. This is accomplished by guiding traffic to the left-side of the roadway through the interchange. These types of interchanges are well suited in situations with a majority of the cross-road traffic has origins or destinations related to the freeway and fewer through movements along the cross-road. The Coulee Road access to Carmichael Road would be closed due to the close spacing of the new north ramp intersection. A new backage road would serve as the primary access for businesses in the northwest quadrant of the interchange.

USH 12

Concept E – Full Diamond with Two Loops

Concept E is similar to Concept D, with the addition of a westbound I-94 to southbound CTH U loop ramp in the northwest quadrant. This option minimizes conflict at the north ramp intersection and provides the most reserve capacity for future traffic. This option will require the widening of the bridge over I-94.

Findings

Based on the feedback received at the PIM, a clear recommended alternative at Carmichael Road was not identified. There was support for both Concept D and G. At the I-94/USH 12 interchange, Concept E received positive feedback and support.

Since the Carmichael Road interchange is the main access to I-94 for the City of Hudson, it was suggested that input from the City Council and Planning Commission would be beneficial in determining the recommended alternative at that location.

City of Hudson Joint Council/Planning Commission Meeting

A joint City Council/Planning Commission meeting was held at the City of Hudson Council Chambers on September 30, 2014. WisDOT staff and their consultant presented PIM materials along with feedback received from the PIM. This meeting resulted in the Council and Planning Commission voting unanimously in support of Concept D, the folded AB interchange option since it provides the most reserve capacity for traffic increases beyond the horizon year. In addition, Concept D is the better option for moving traffic along the Carmichael Corridor and does not require access closure of Coulee Road at Carmichael Road.

Recommendations

Based on input received from the project stakeholders, the Public Information Meeting and the City of Hudson joint Council/Planning Commission meeting, the following alternatives are recommended to move forward for future analysis and refinement.

Carmichael Road

Concept D – Folded AB with Modified Frontage Roads

The folded AB interchange option consists of constructing loop ramps in the northeast and southeast quadrants to serve the eastbound I-94 to northbound Carmichael Road traffic and the northbound Carmichael Road to westbound I-94 traffic, respectively. These loops will minimize movement conflicts at both the north and south ramp intersections. The eastbound I-94 on ramp and westbound I-94 off ramp would be relocated to align across from Crestview Drive and Coulee Road, respectively. The frontage road in the northeast quadrant will be relocated to the north and Stageline Road in the southeast quadrant will be relocated one block to the south.

This concept is the only concept that provides LOS C or better at all four intersections and it provides the most reserve capacity for future development. However, this concept has a large footprint when compared to the other concepts currently under study.

USH 12

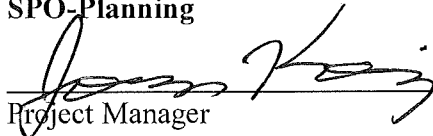
Concept E – Full Diamond with Two Loops

Concept E is similar to Concept D, with the addition of a westbound I-94 to southbound CTH U loop ramp in the northwest quadrant. This option minimizes conflict at the north ramp intersection and provides the most reserve capacity for future traffic. This option will require the widening of the bridge over I-94.

This document is intended to provide documentation of the process by which the preferred alternative was selected, reducing the need to duplicate these efforts when the design/construction phase begins.

By the signatures below, SPO-Planning, PDS, and the Regional Oversight Team of the NW Region, as well as BPD, agree that a reasonable number of and the appropriate alternatives were evaluated resulting in the selection of the preferred alternative. The layout and preliminary design of the preferred alternative is acceptable and meets all desirable design standards unless noted in this document.

SPO-Planning

 11/14/14
Project Manager Date

PDS

PDS Supervisor Date

BPD

Regional Liaison Date

Regional Oversight Team

Approved by ROT on 12/2/14,

NW Regional Director Date JMK

NW Regional Operations Director Date

Appendix A: Sub Area Concepts

Roadway Network Options

0 300 600 900 Feet

Aerial: 2012

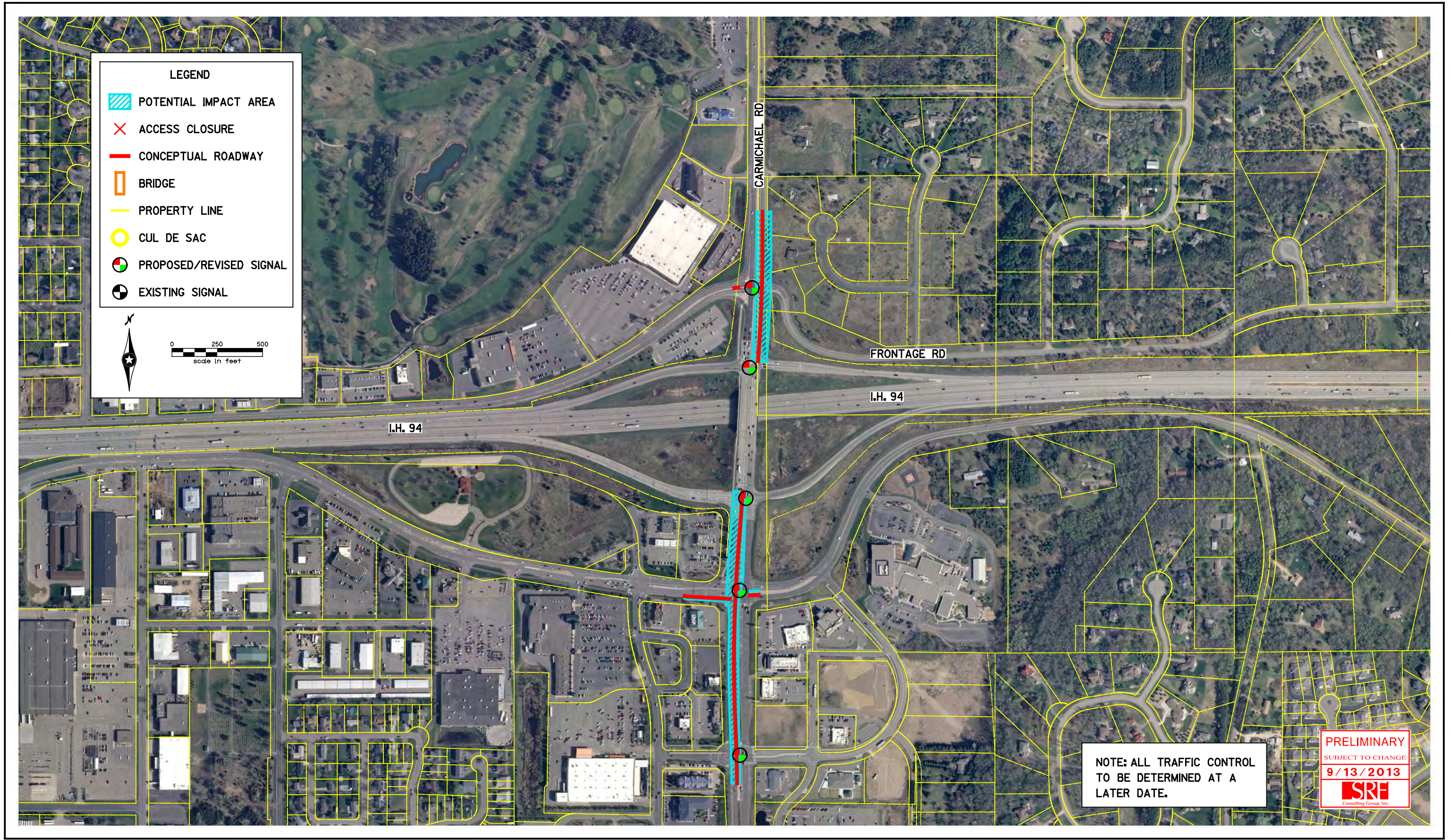
Callouts:

- C2 Assumes D1
- D2 & D3 Assume D1
- B1 is Hanley Rd to Vine St
- B2 is Stage Line Rd to Vine St

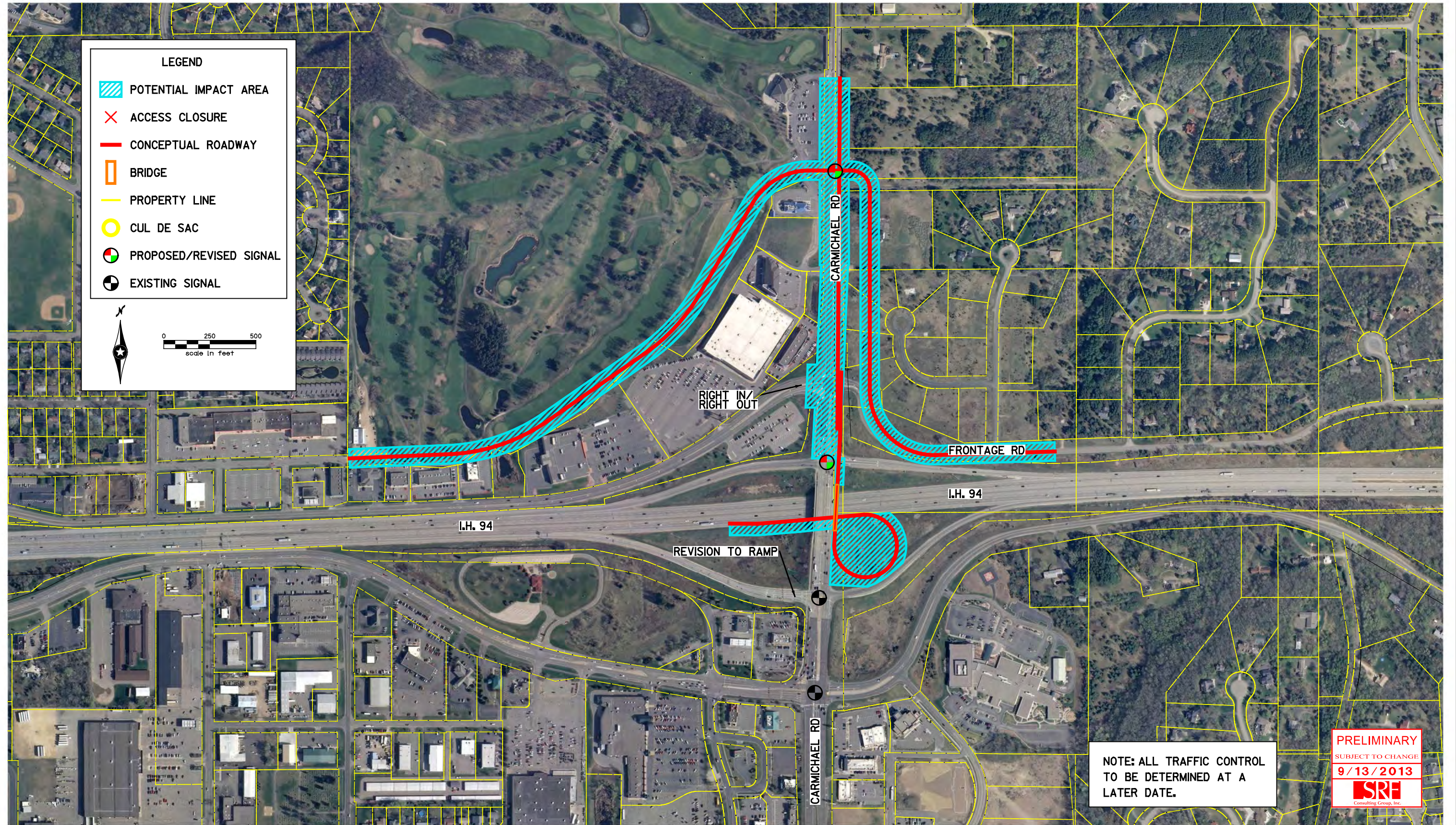
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Appendix B:
Initial Alternative Concepts

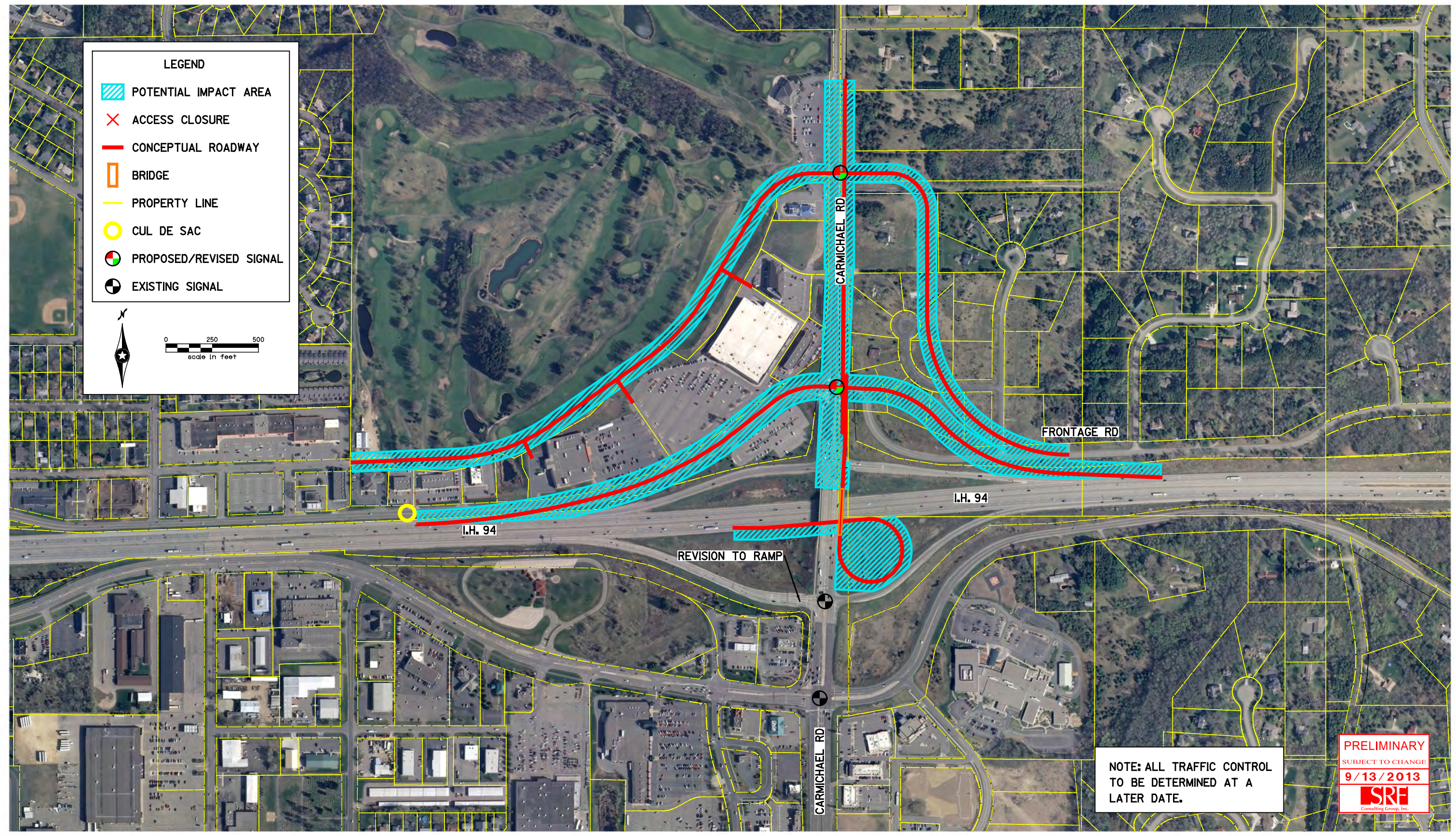
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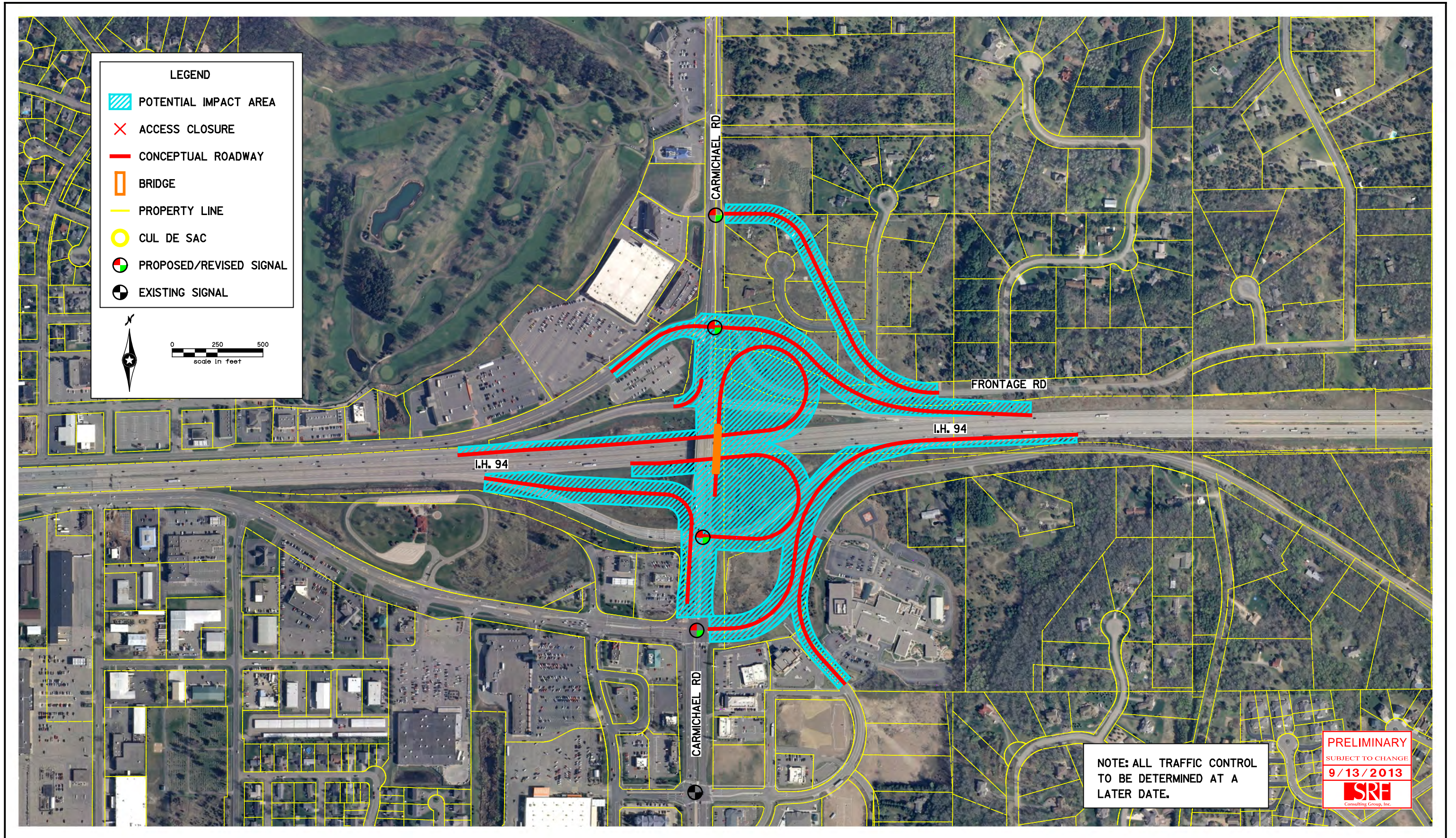
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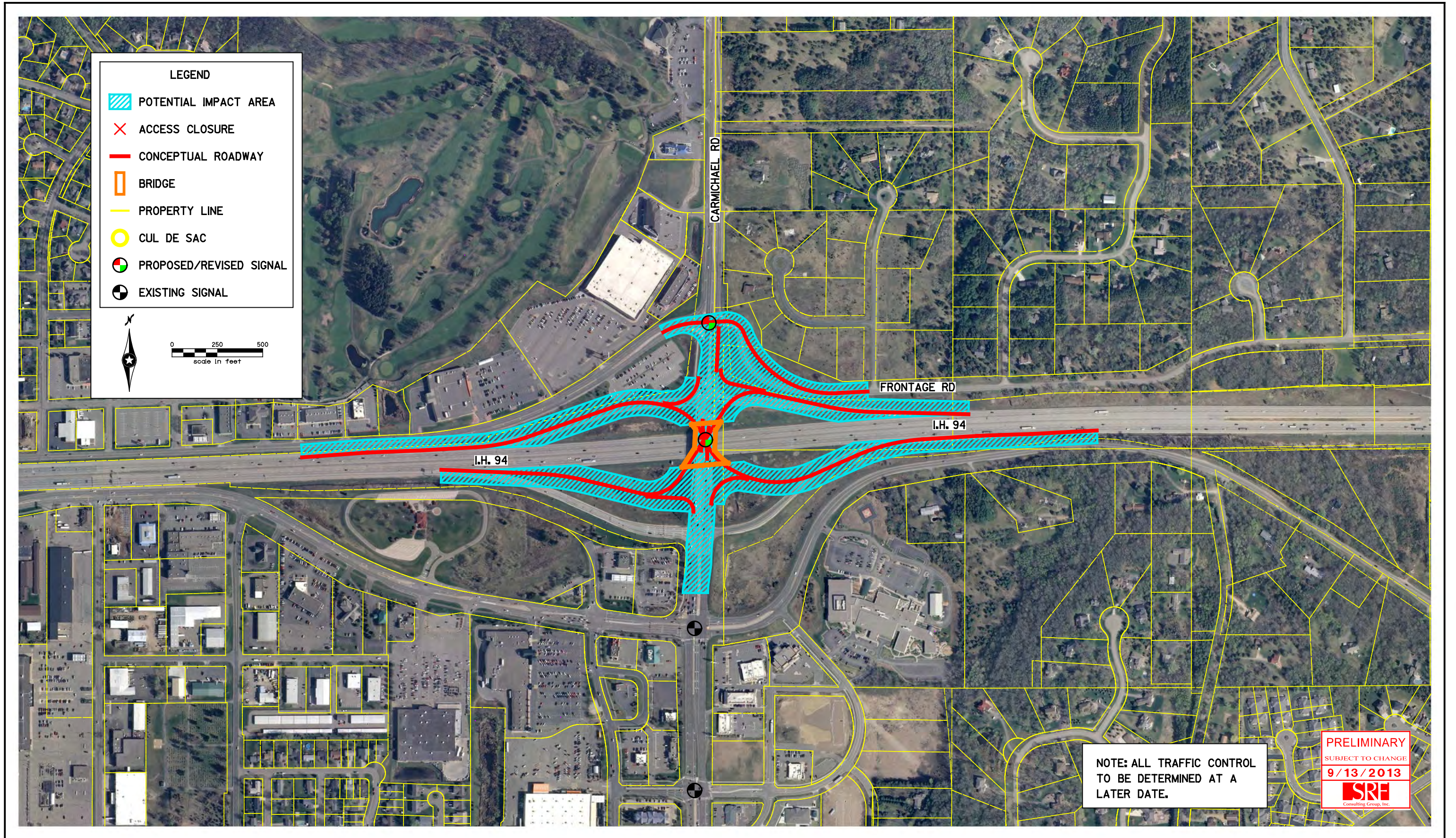
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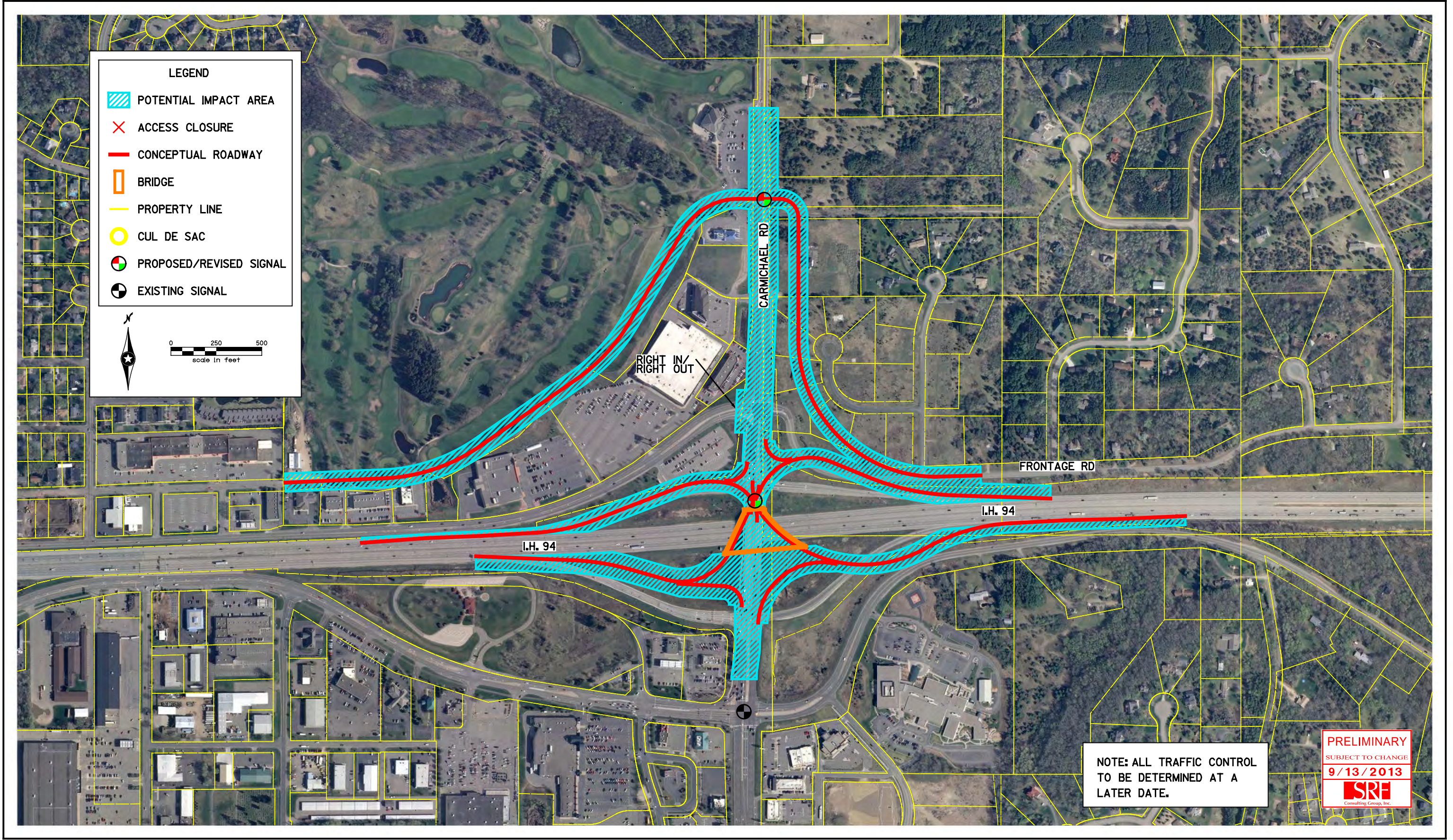
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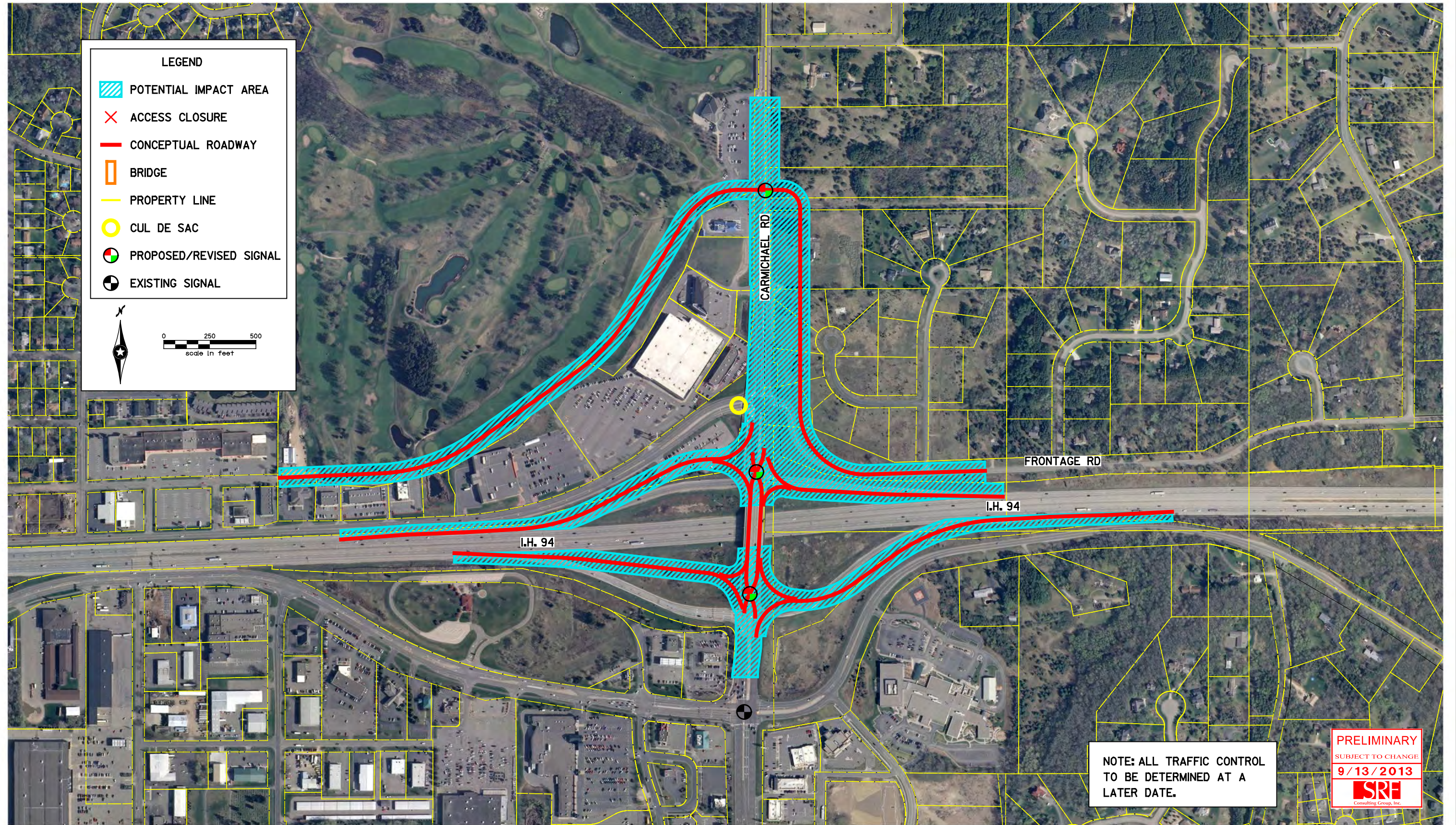
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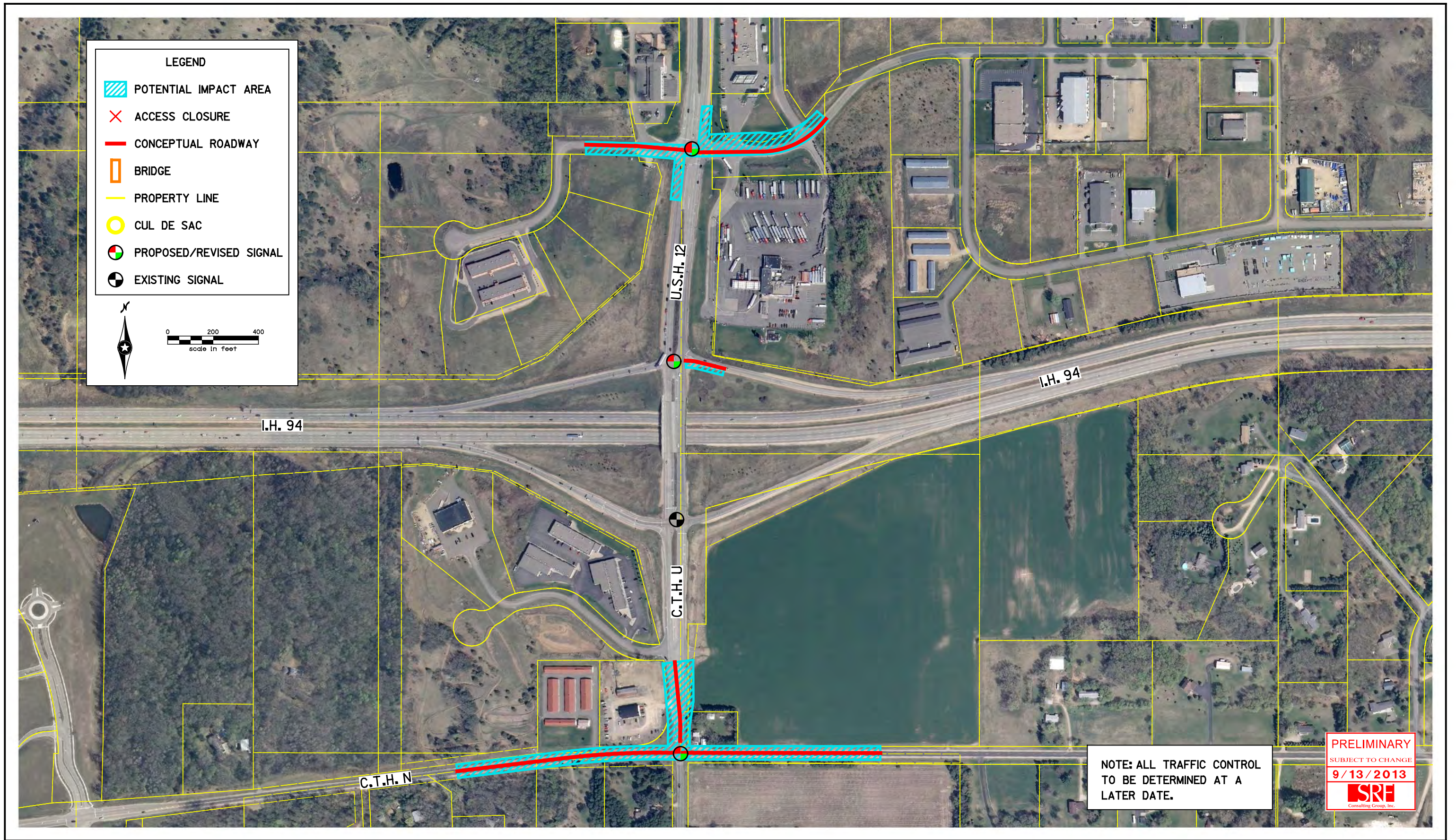
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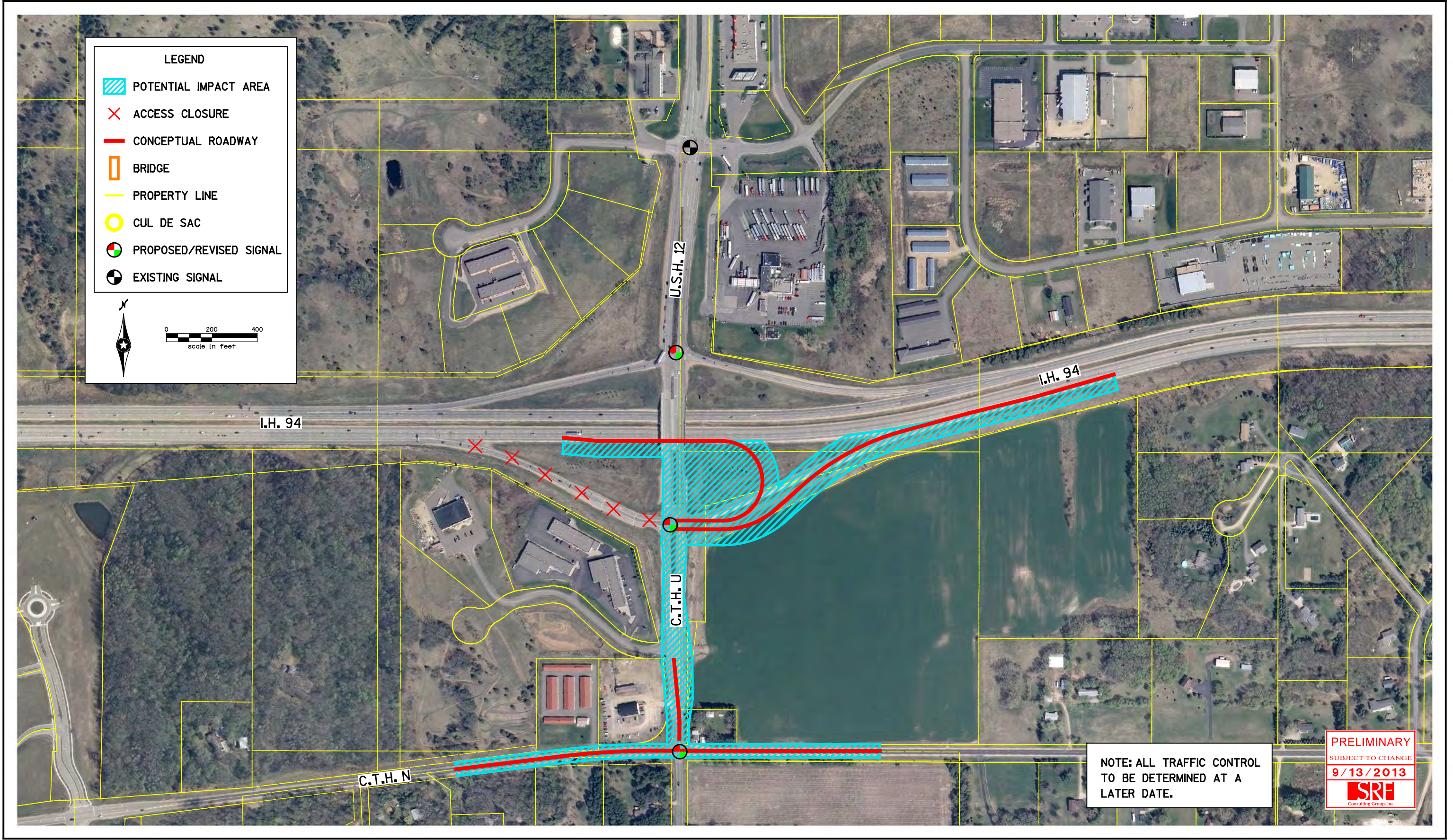
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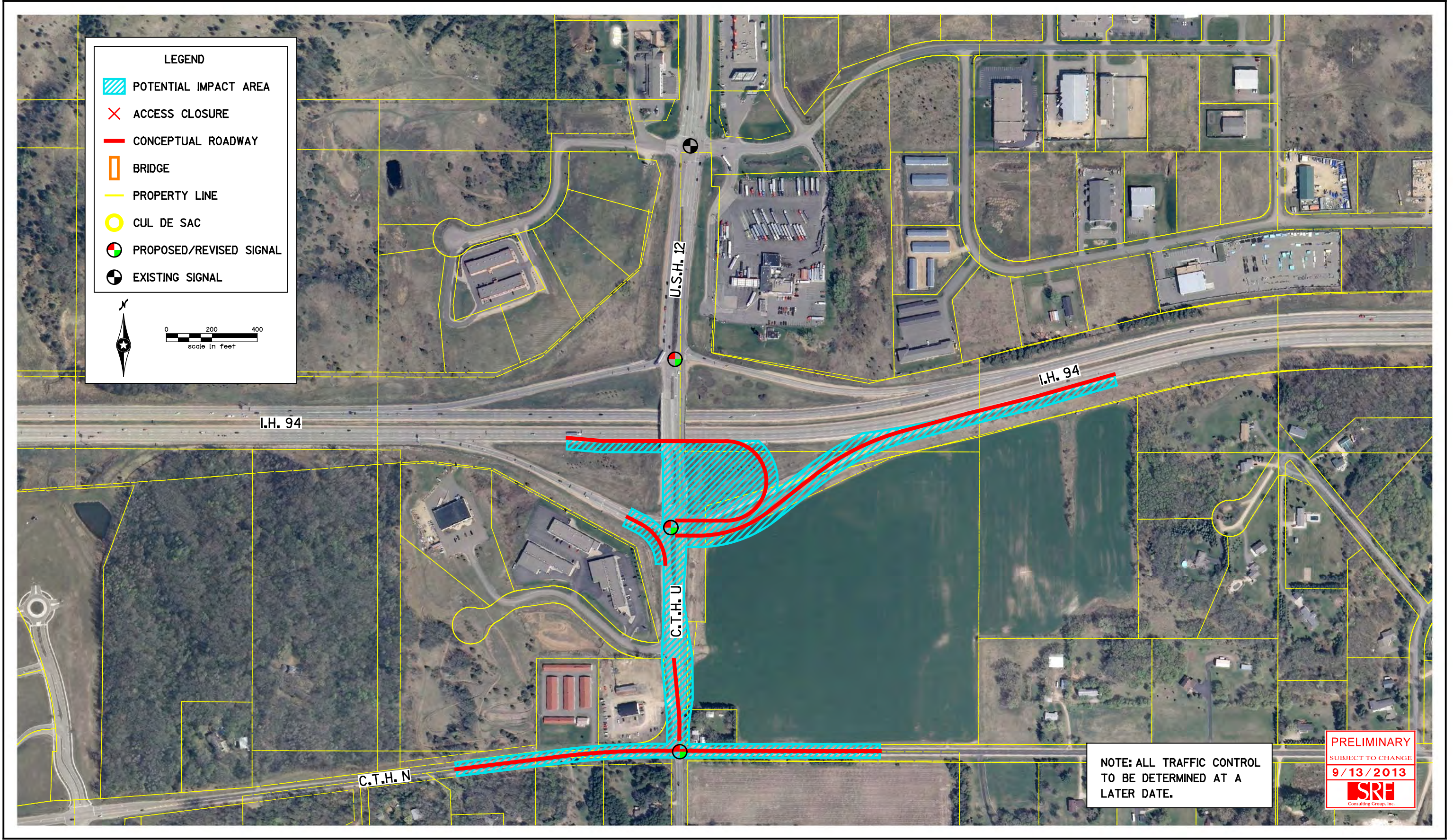
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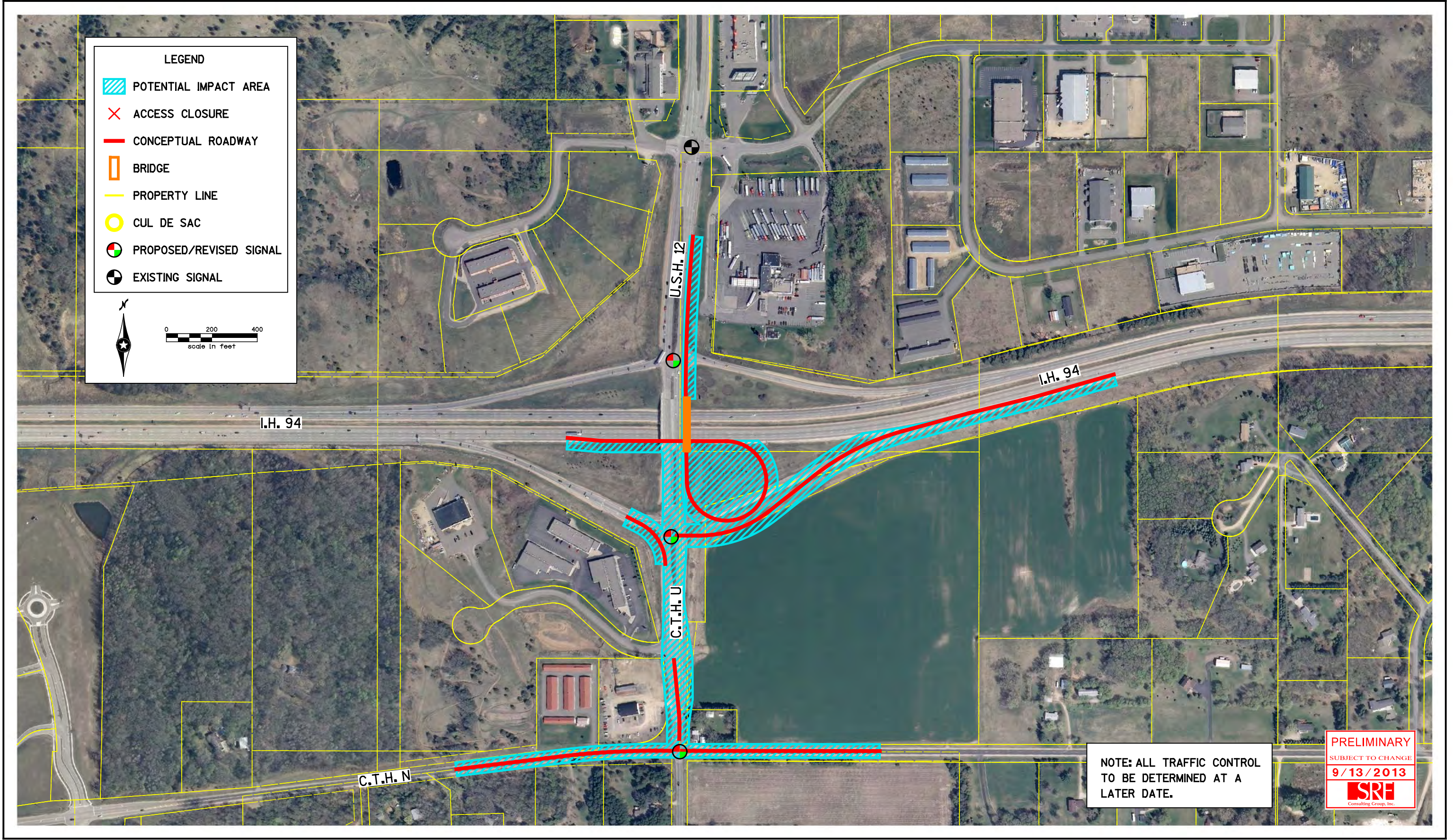


I-94/USH 12 Interchange: Concept C - Full Diamond with Loop

I-94 Hudson Area Interchange Study
Hudson, WI

Job #7824
9/13/2013

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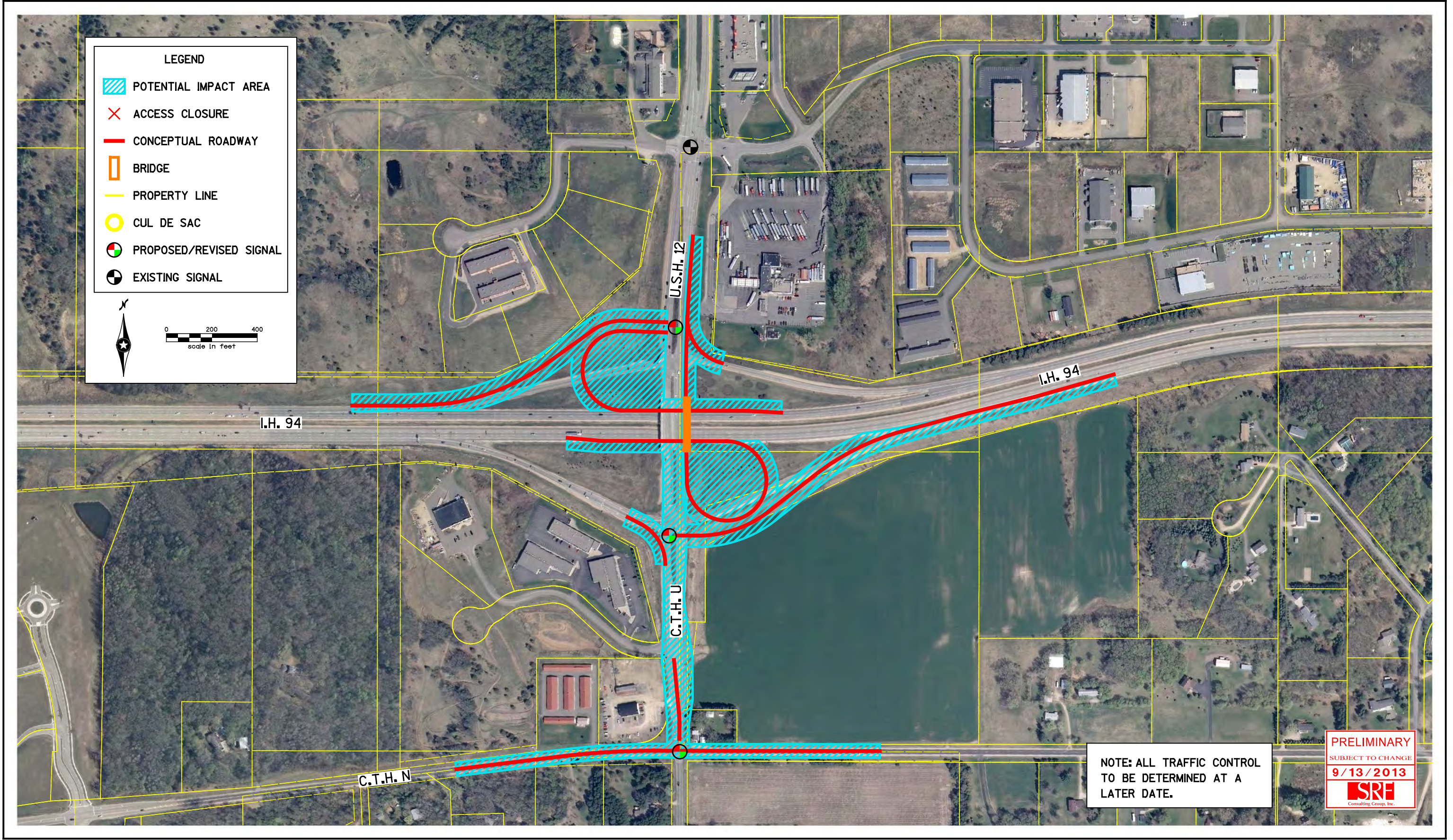


I-94/USH 12 Interchange: Concept D - Full Diamond with Loop

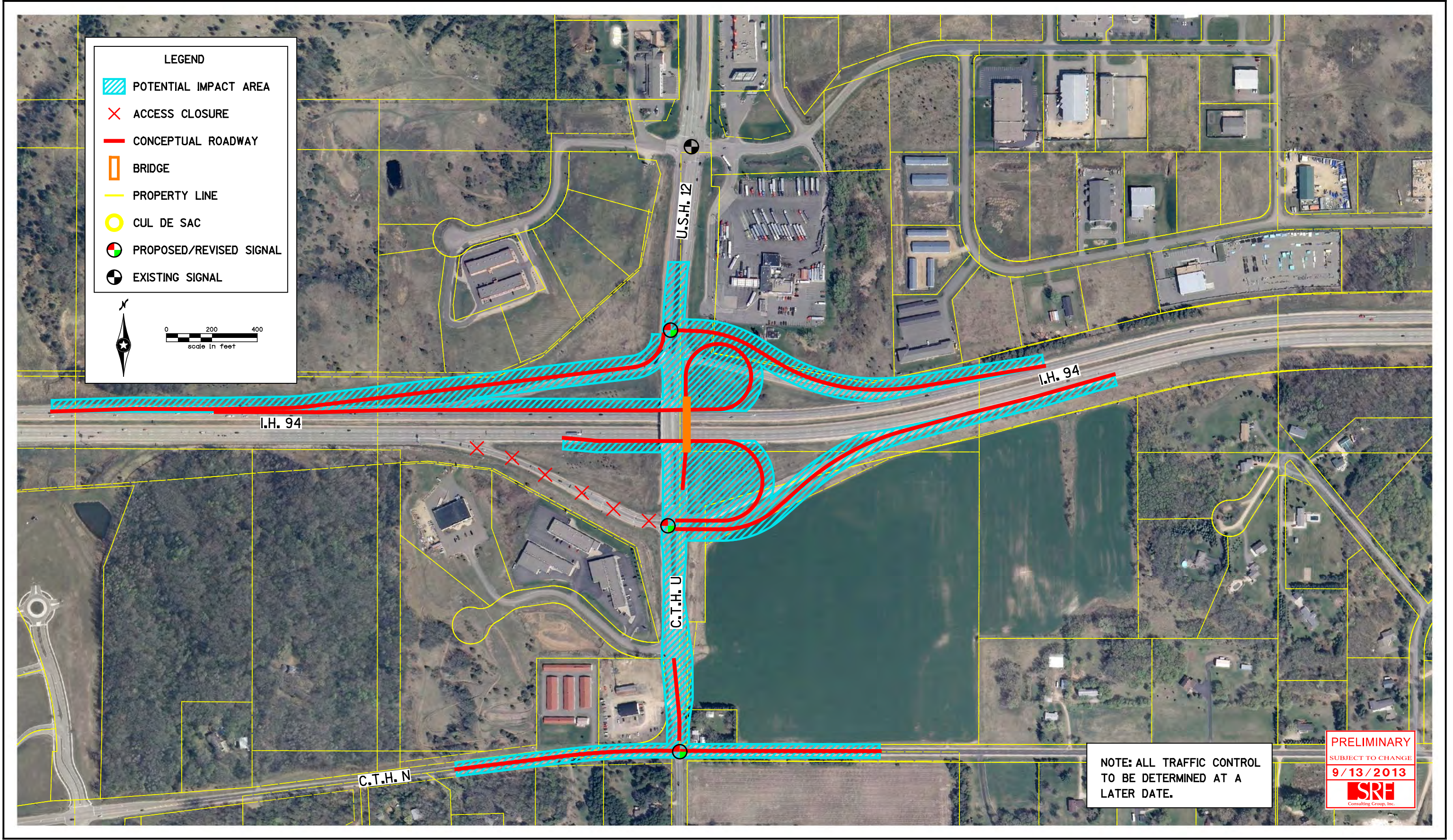
I-94 Hudson Area Interchange Study
Hudson, WI

Job #7824
9/13/2013

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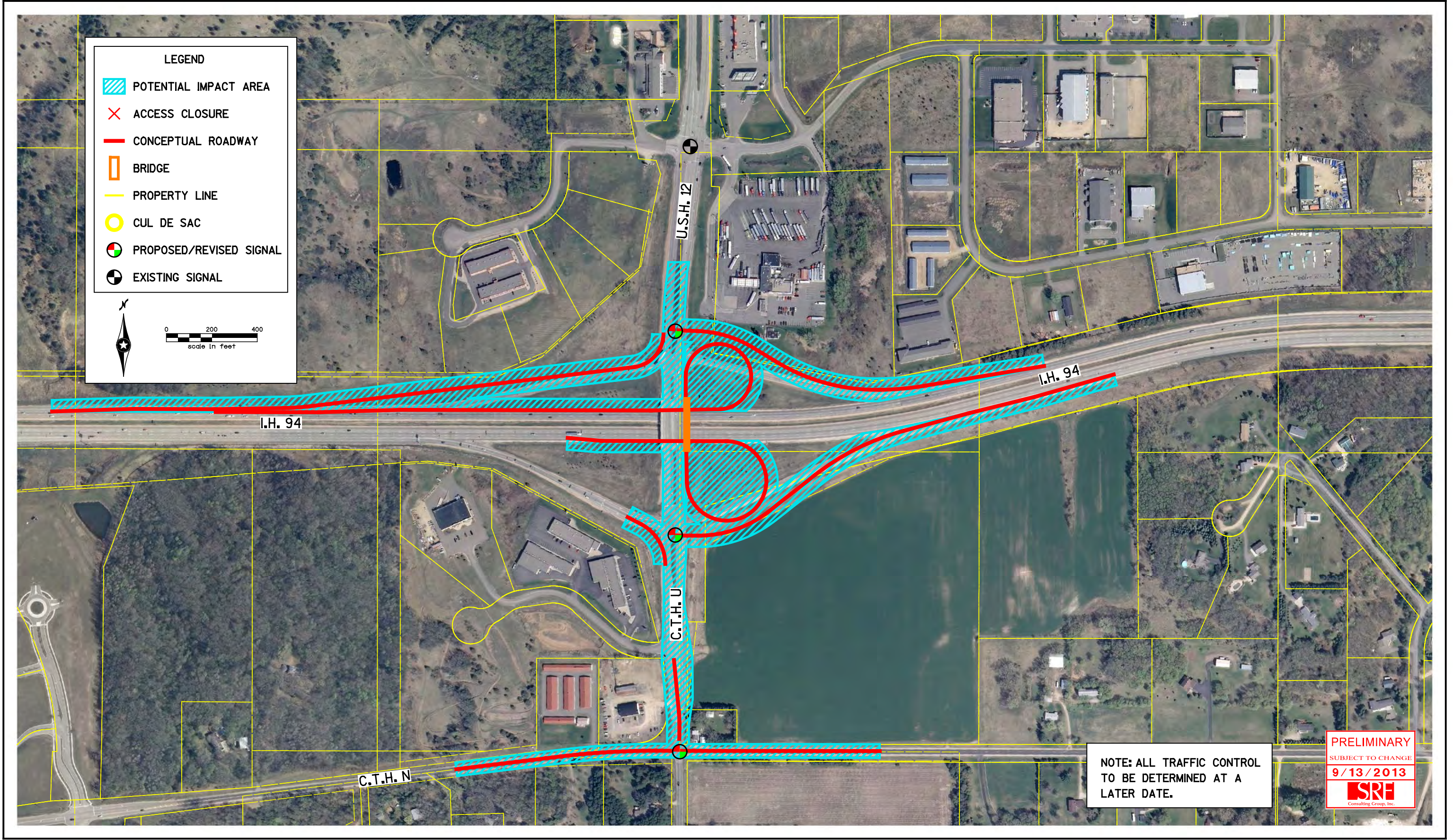


I-94/USH 12 Interchange: Concept F - Partial Diamond with Two Loops

I-94 Hudson Area Interchange Study
Hudson, WI

Job #7824
9/13/2013

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Appendix C
Initial Concept Evaluation Matrices

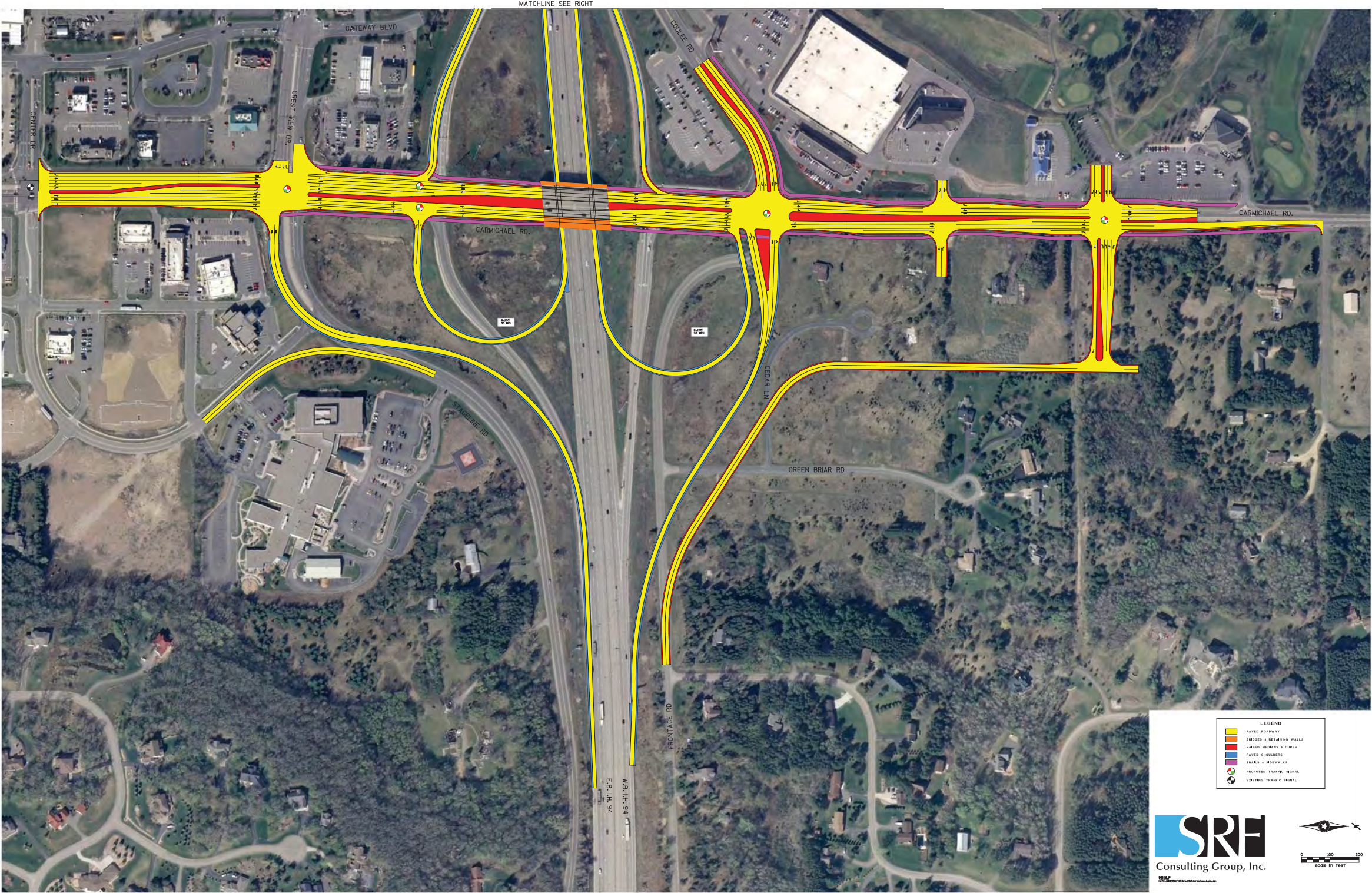
I-94 Hudson Area Interchange Study (Carmichael Road & USH 12) Project I.D. 1020-00-06 Concept Evaluation Matrix															
Carmichael Road															
Interchange Configuration	Description	Year 2035 Intersection LOS				Traffic Signal Spacing	Total Number of Parcels Impacted		Parcels Impacted			Interchange ROW Impacts (Acres)	Interchange Wetland Impacts (Acres)	Carried Forward (Yes/No)	Comment/Reason for Dismissal
		X = AM Peak Hour, (X) = PM Peak Hour							Due to Right-of-Way Needs						
		Carmichael Rd/Coulee Rd/N Frontage Road	Carmichael Rd/WB I-94 Ramps	Carmichael Rd/EB I-94 Ramps	Carmichael Rd/Crestview Dr		Partial	Full	Agricultural	Commercial	Residential				
Year 2012 Existing	Current Diamond Configuration	B (C)	B (C)	B (C)	C (D)	400' - 700'	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Year 2025 No Build	Current Diamond Configuration	C (C)	C (C)	B (C)	C (D)	400' - 700'	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Year 2035 No Build	Current Diamond Configuration	C (F)	C (C)	B (E)	C (F)	400' - 700'	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Unacceptable LOS at the interchange.
	With Overpass B2	(E)	(C)	(E)	(F)	N/A	30	6	8	0	28	14.2	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass C1	(D)	(C)	(E)	(E)	N/A	11	2	0	10	3	1.5	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass B2 and C1	(C)	(C)	(D)	(E)	N/A	41	8	8	10	31	15.6	None Anticipated	No	Unacceptable LOS at the interchange.
Concept A	Intersection Improvements	B (D)	C (C)	B (E)	C (E)	400' - 700'	2	0	0	0	2	0.1	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass B2	(C)	(C)	(E)	(E)	N/A	32	6	8	0	30	14.3	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass C1	(C)	(C)	(D)	(D/E)	N/A	13	2	0	10	5	1.6	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass B2 and C1	(C)	(C)	(C/D)	(D)	N/A	43	8	8	10	33	15.7	None Anticipated	No	Unacceptable LOS at the interchange.
Concept B	Loop with Modified Frontage Roads	B (C)	C (D)	B (C)	C (E)	500' - 1100'	15	5	2	12	6	13.7	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass B2	(C)	(D)	(C)	(D/E)	N/A	45	11	10	12	34	27.9	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass C1	(C)	(C)	(C)	(D/E)	N/A	26	7	2	22	9	15.2	None Anticipated	Yes	Provides accpable LOS C or better at the interchange.
	With Overpass B2 and C1	(C)	(C)	(C)	(D)	N/A	56	13	10	22	37	29.3	None Anticipated	No	Minor incremenal benefit when compared to Concept B with Overpass C1 with approximately twice as many impacts.
Concept C	Loop with Modified Frontage Roads and WB I-94 Ramps	B (C)	C (D)	B (C)	C (E)	500' - 1100'	11	10	2	12	7	17.0	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass B2	(C)	(D)	(C)	(D/E)	N/A	41	16	10	12	35	31.2	None Anticipated	No	Unacceptable LOS at the interchange.
	With Overpass C1	(C)	(C)	(C)	(D/E)	N/A	22	12	2	22	10	18.5	None Anticipated	No	No additional benefit when compared to Concept B with Overpass C1. Significant access modifications for businesses along Coulee Road.
	With Overpass B2 and C1	(C)	(C)	(C)	(D)	N/A	52	18	10	22	38	32.6	None Anticipated	No	Minor incremenal benefit when compared to Concept C with Overpass C1 with approximately twice as many impacts.
Concept D	Folded AB with Modified Frontage Roads	C (C)	A (A)	B (C)	C (C)	500' - 1100'	4	9	0	2	13	5.7	None Anticipated	Yes	Only Concept that provides LOS C at the Carmichael Road/Crestview Drive intersection.
Concept E	Single Point Interchange	B (C)	C (C)		C (D)	600' - 1000'	0	1	0	1	0	1.7	None Anticipated	Yes	Very minimal impacts to parcels and ROW.
Concept F	Offset Single Point Interchange	B (C)	C (C)		C (D)	1000' - 1300'	12	8	0	11	9	12.6	None Anticipated	No	No additional benefit when compared to Concept E with significantly more impacts.
Concept G	Diverging Diamond Interchange	B (B)	B (C)	B (C)	C (D)	600' - 1500'	10	6	2	8	6	15.5	None Anticipated	Yes	Has the potential to maintain the existing bridge over I-94.

I-94 Hudson Area Interchange Study (Carmichael Road & USH 12)
Project I.D. 1020-00-06
Concept Evaluation Matrix

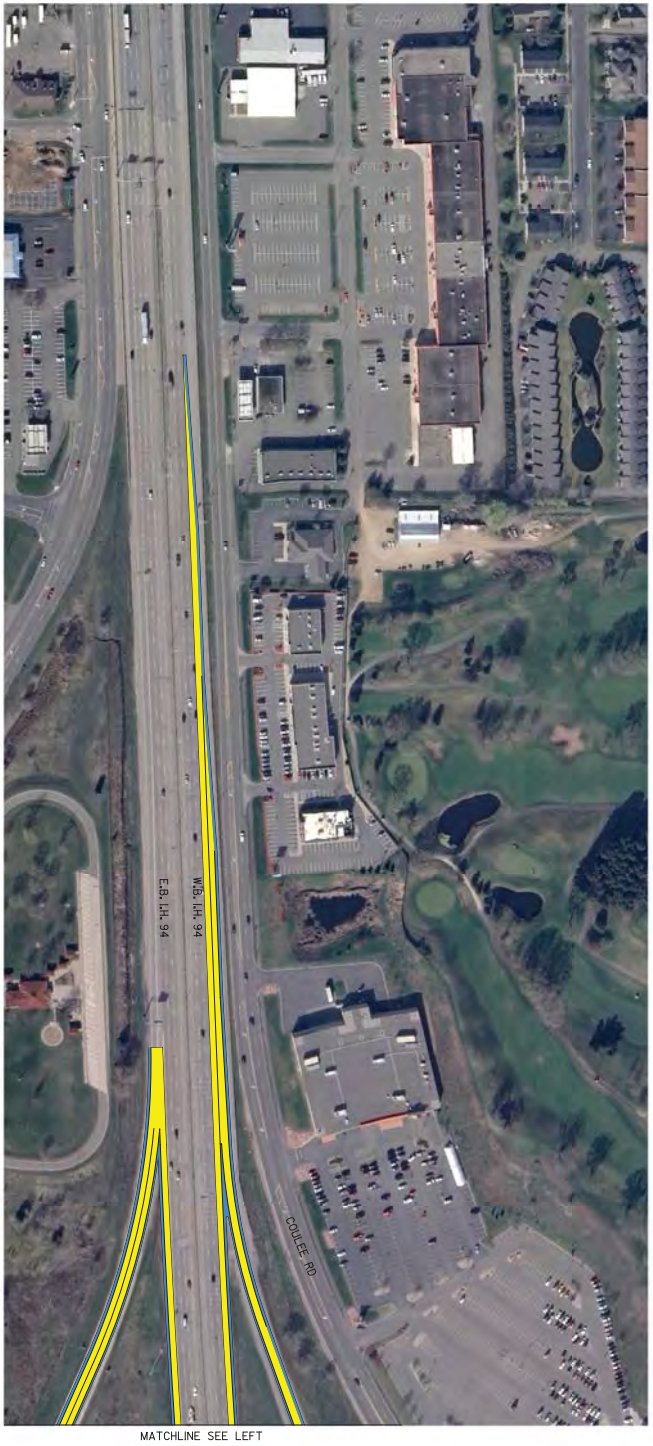
USH 12

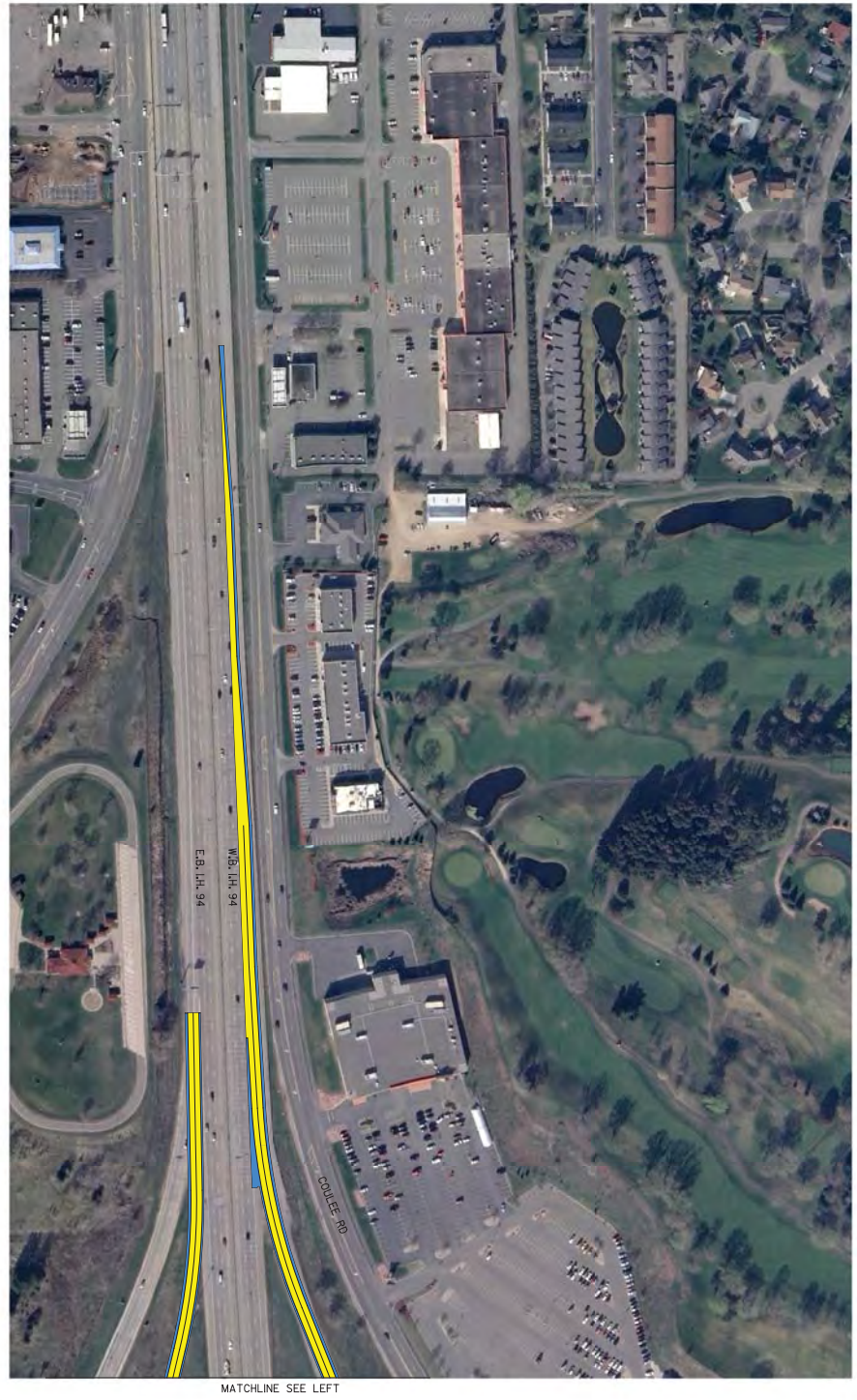
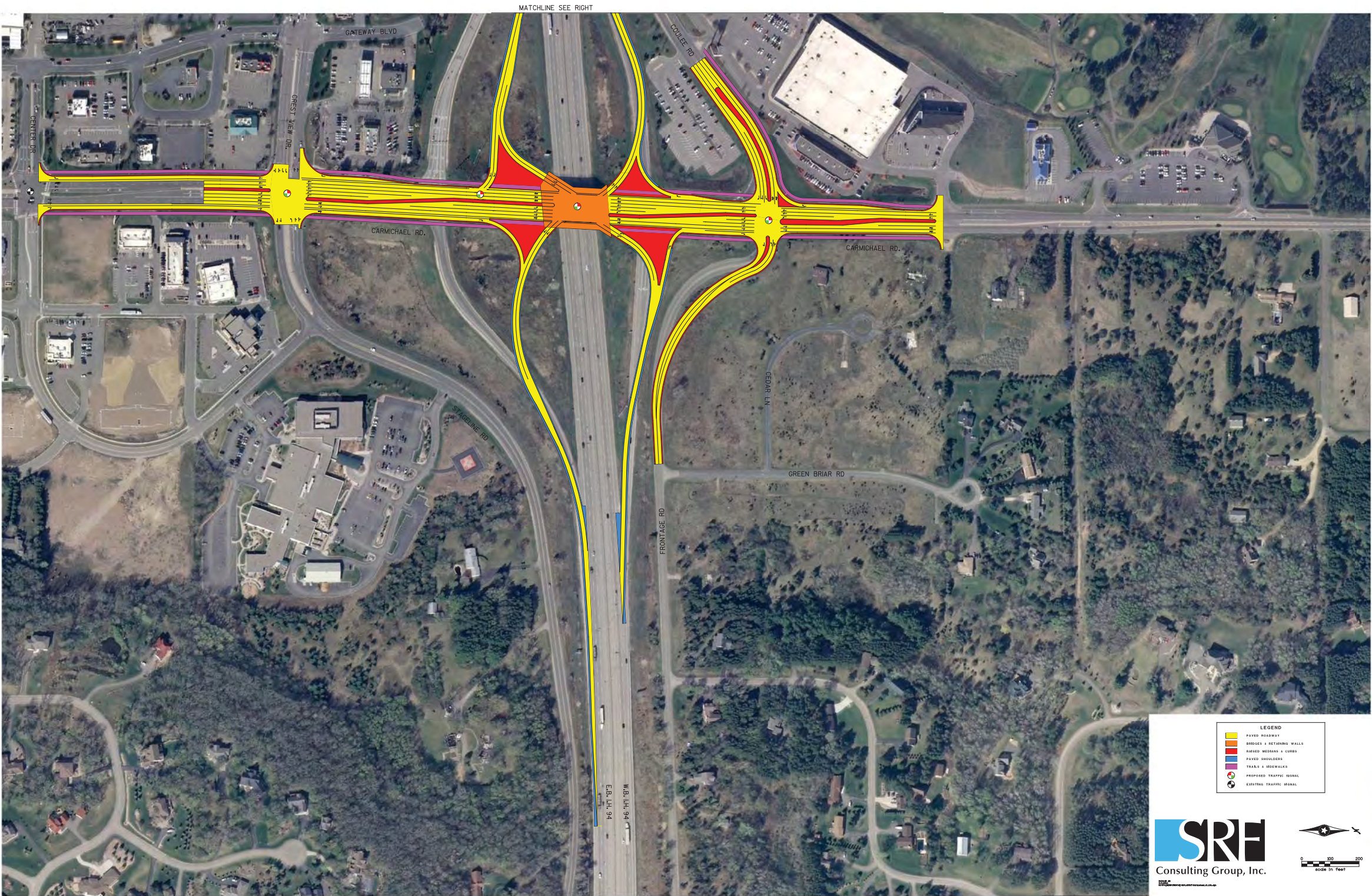
Interchange Configuration	Description	Year 2035 Intersection LOS				Traffic Signal Spacing	Total Number of Parcels Impacted		Parcels Impacted			Interchange ROW Impacts (Acres)	Interchange Wetland Impacts (Acres)	Carried Forward (Yes/No)	Comment/Reason for Dismissal
		X = AM Peak Hour, (X) = PM Peak Hour							Due to Right-of-Way Needs						
		USH 12/Rodeo Circle	USH 12/WB I- 94 Ramps	USH 12/EB I-94 Ramps	CTH N/CTH U		Partial	Full	Agricultural	Commercial	Residential				
Year 2012 Existing	Current Diamond Configuration	B (B)	A (A)	B (C)	A (A)	700' - 1100'	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Year 2025 No Build	Current Diamond Configuration	B (B)	B (B)	C (C)	A (B)	700' - 1100'	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Year 2035 No Build	Current Diamond Configuration	E (B)	E (C)	E (E)	F (E)	700' - 1100'	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Unacceptable LOS at the interchange.
Concept A	Intersection Improvements	C (C)	C (B)	C (D)	B (D)	700' - 1100'	5	0	3	1	1	0.4	None Anticipated	No	Unacceptable LOS at the interchange.
Concept B	Partial Diamond with Loop	C (C)	B (B)	B (C)	B (C)	700' - 1100'	5	0	4	0	1	0.7	None Anticipated	No	Would require a two-lane exit loop.
Concept C	Full Diamond with Loop	C (C)	B (B)	B (C)	B (C)	700' - 1100'	5	0	4	0	1	0.9	None Anticipated	Yes	Provides acceptable LOS C or better at all intersections.
Concept D	Full Diamond with Loop	C (C)	C (B)	B (B)	B (C)	700' - 1100'	5	0	4	0	1	0.4	None Anticipated	Yes	Provides acceptable LOS C or better at all intersections.
Concept E	Full Diamond with Two Loops	C (C)	B (B)	B (B)	B (C)	700' - 1100'	6	0	4	1	1	0.7	None Anticipated	Yes	Provides acceptable LOS C or better at all intersections and provides the most reserve capacity for additional growth beyond year 2035.
Concept F	Partial Diamond with Two Loops	C (C)	B (B)	B (C)	B (C)	700' - 1100'	7	0	4	2	1	1.3	0.07	No	Would require a two-lane exit loop.
Concept G	Full Diamond with Two Loops	C (C)	B (B)	B (B)	B (C)	700' - 1100'	7	0	4	2	1	1.4	0.07	No	Would generate a weave segment on USH 12 between the loops.

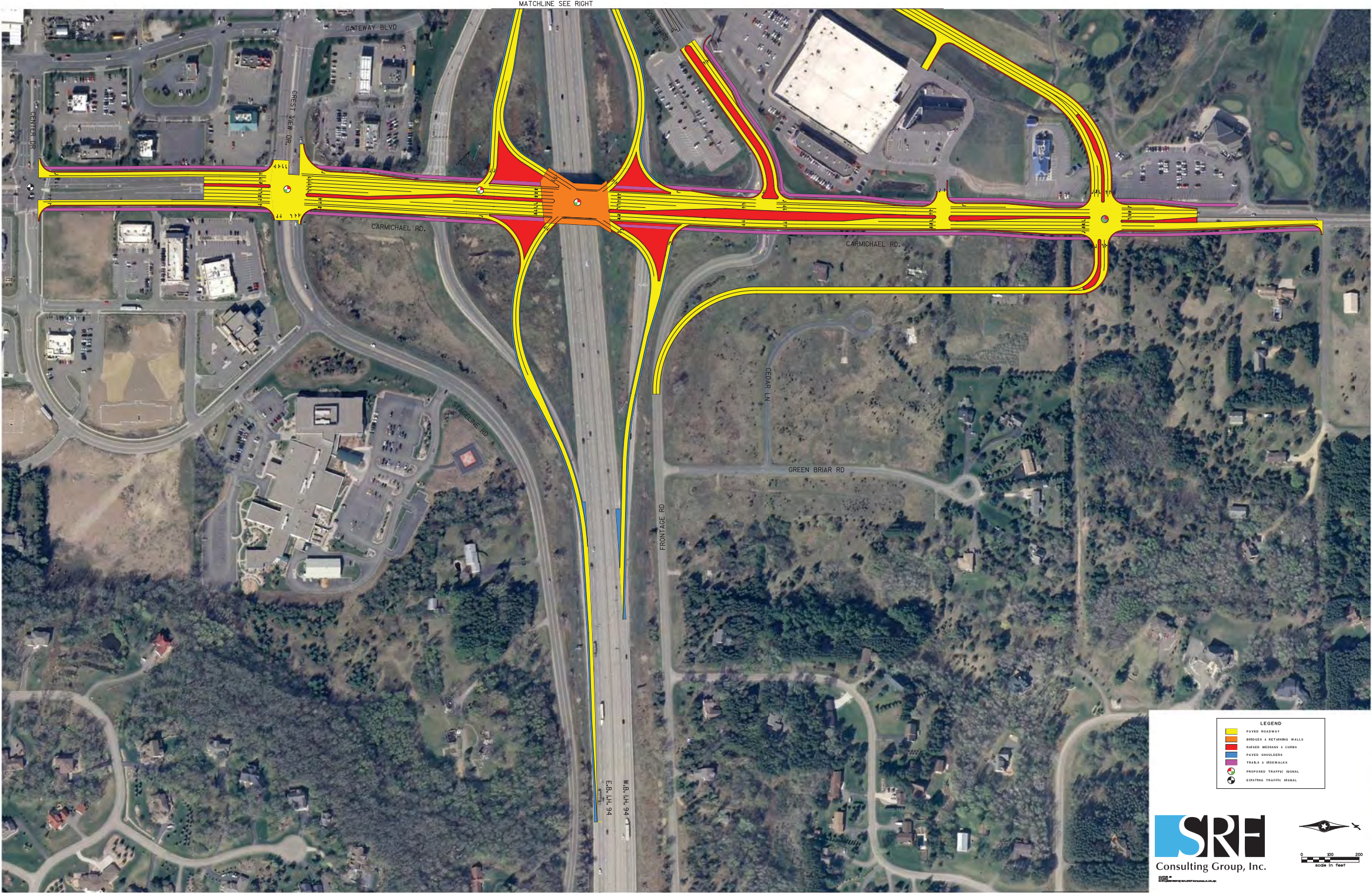
Appendix D
Refined Alternative Concepts



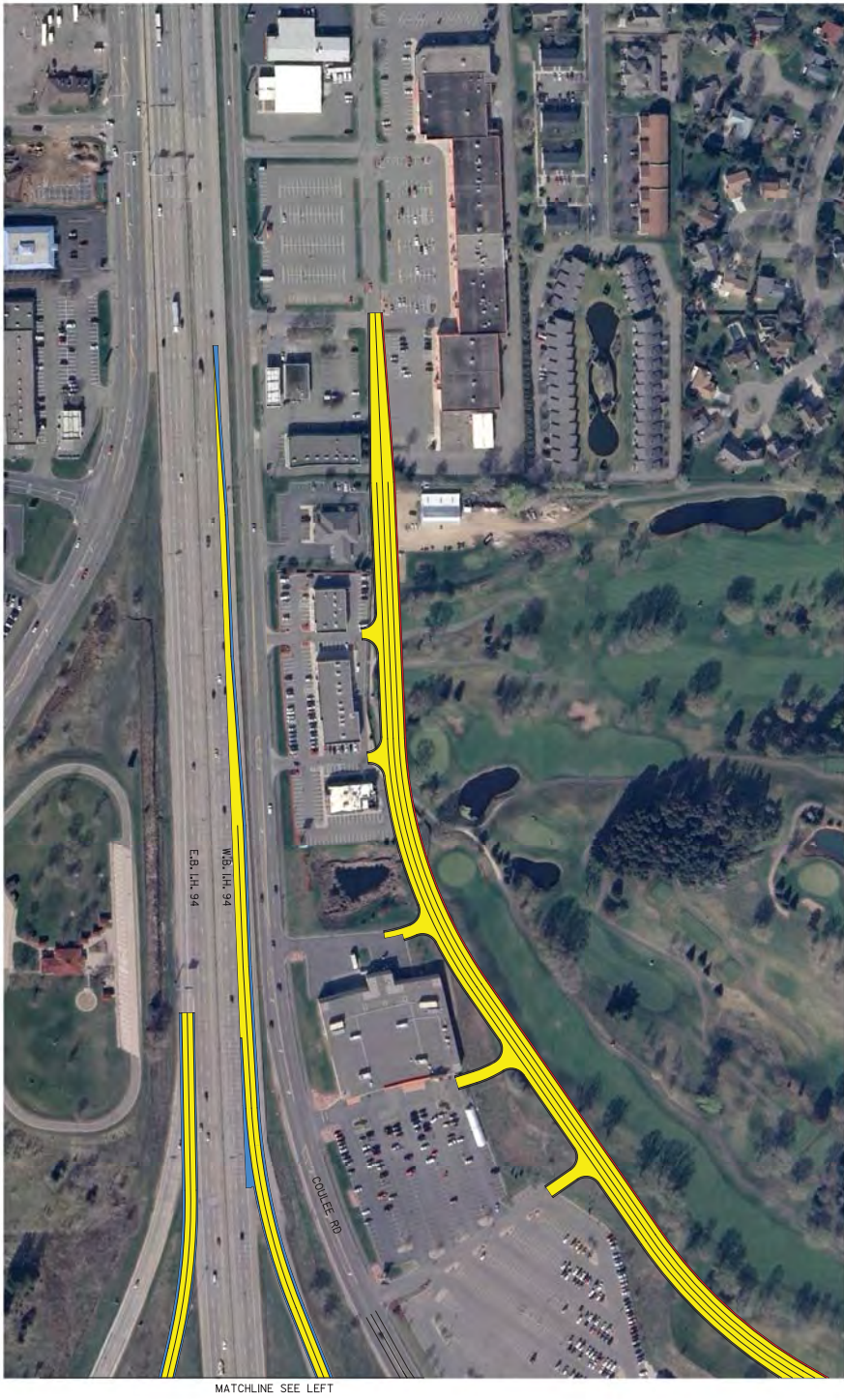
CARMICHAEL OPTION D

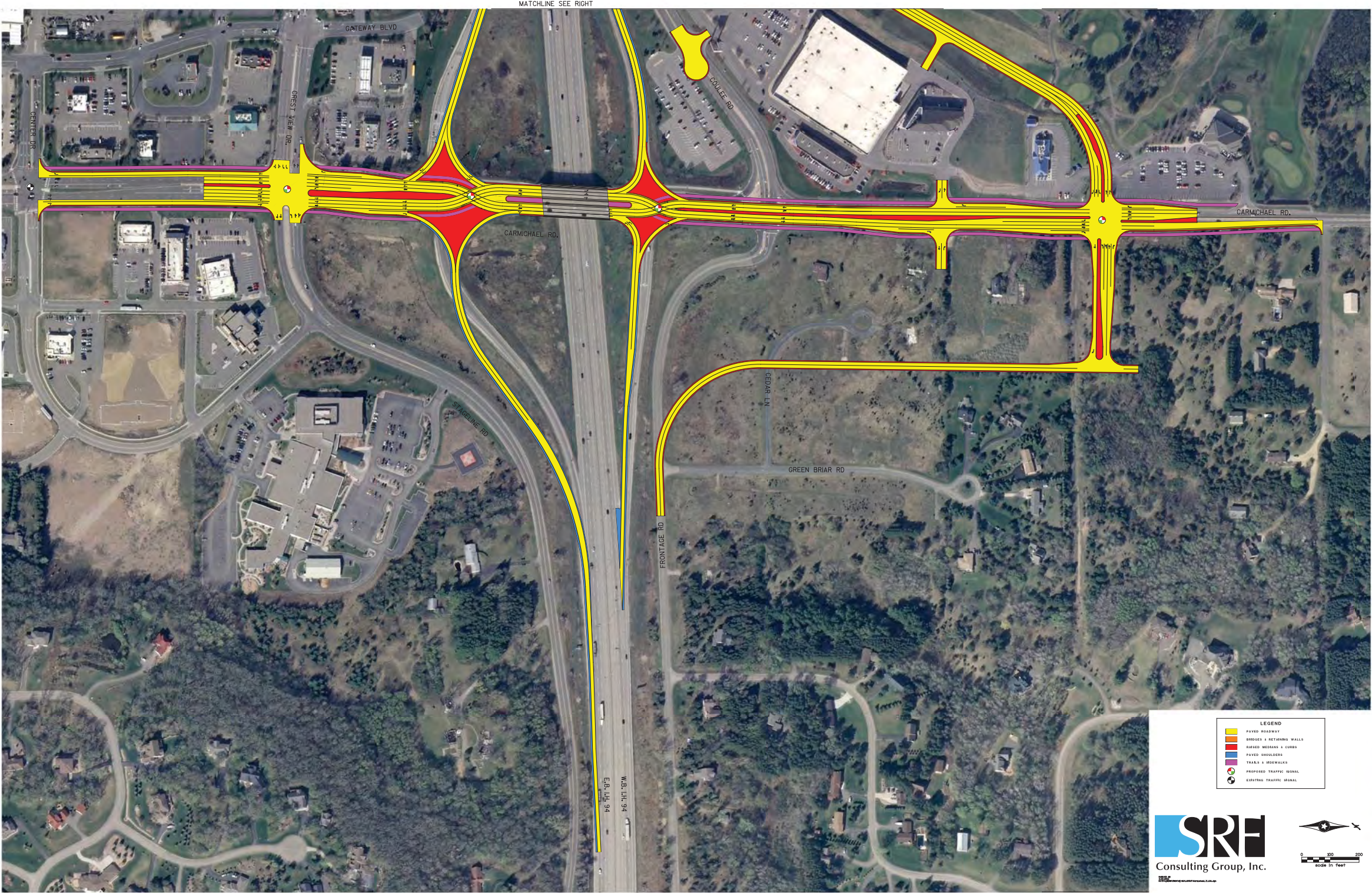




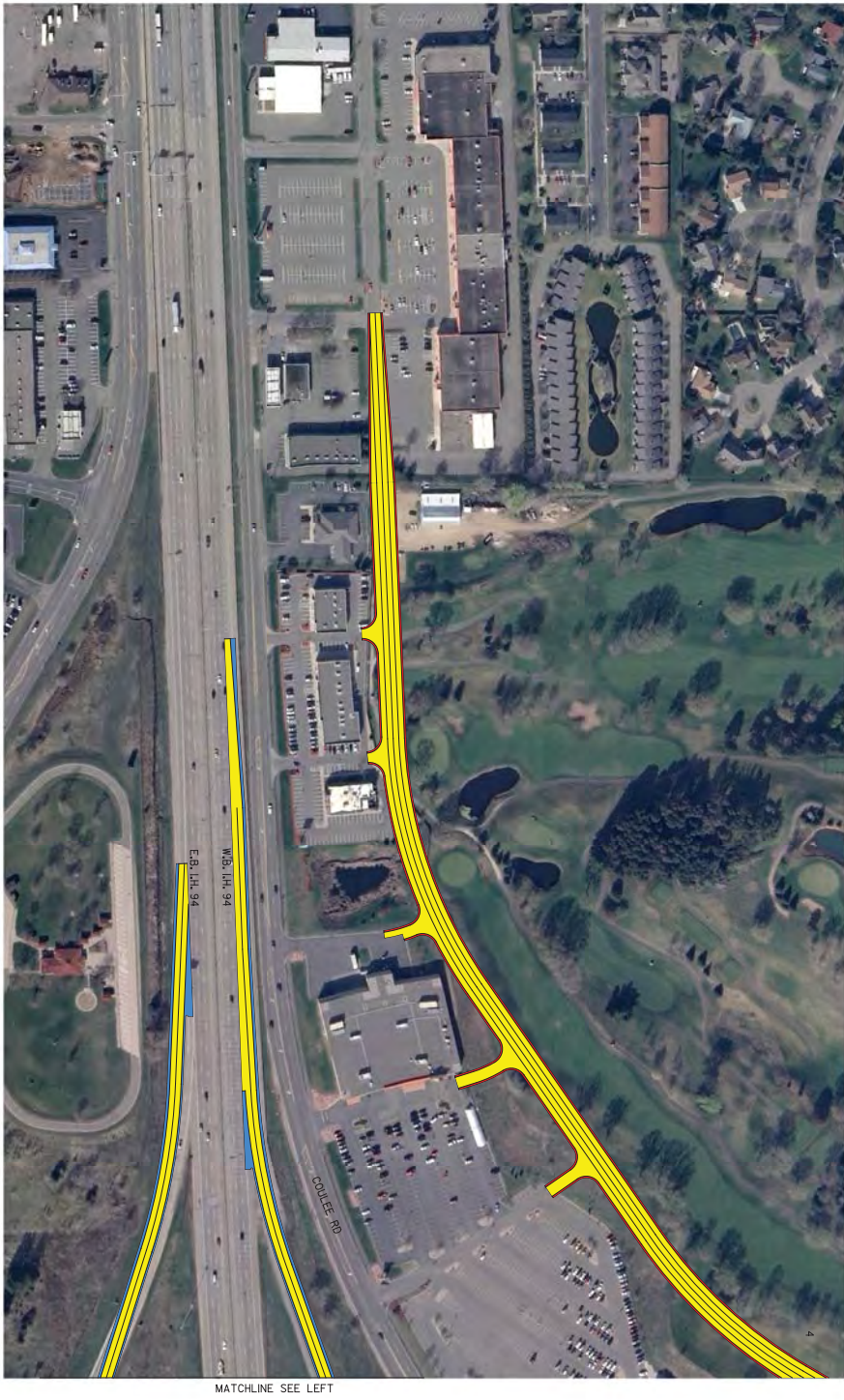


CARMICHAEL OPTION F





CARMICHAEL OPTION G





US 12 OPTION C



LEGEND	
	PAVED ROADWAY
	BRIDGES & RETAINING WALLS
	RAISED MEDIANS & CURBS
	PAVED SHOULDERS
	TRAILS & SIDEWALKS
	FUTURE CONSTRUCTION "BY OTHERS"
	PROPOSED TRAFFIC SIGNAL
	EXISTING TRAFFIC SIGNAL
	FUTURE TRAFFIC SIGNAL "BY OTHERS"

DATE: 10/10/2018
PROJECT: US 12 OPTION C
DRAWN: J. L. L. (JLL)



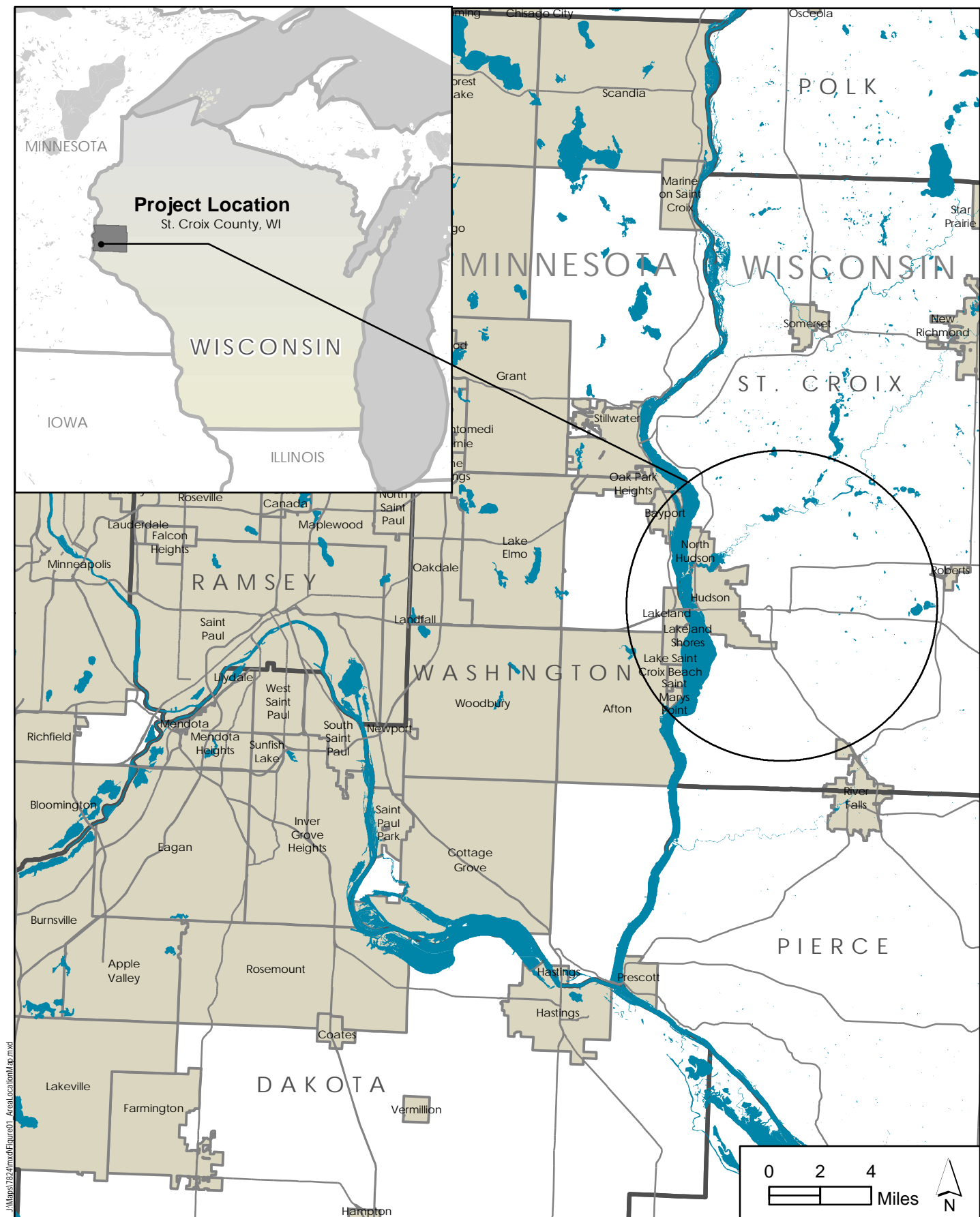
Appendix E
Refined Concept Evaluation Matrix

I-94 Hudson Area Interchange Study (Carmichael Road & USH 12)
Project I.D. 1020-00-06
Concept Evaluation Matrix

Carmichael Road														
Interchange Configuration	Description	Year 2035 Intersection LOS				Operational Summary	Potential Operational Issues	Local Road Impacts	Pedestrian Accommodations	I-94 Impacts	Bridge Needs	Interchange footprint	Traffic Signal Spacing	Walmart TIA Impact
		X = AM Peak Hour, (X) = PM Peak Hour												
		Carmichael Rd/Coulee Rd/N Frontage Road	Carmichael Rd/WB I-94 Ramps	Carmichael Rd/EB I-94 Ramps	Carmichael Rd/Crestview Dr									
Concept D	Folded AB with Modified Frontage Roads	C (C)	A (A)	B (C)	C (C)	Only option that provides LOS C at Crestview Drive. Provides the most reserve capacity of the four options. Additional traffic is expected at Center Drive due to access modifications. An additional southbound left-turn lane will be needed at Center Drive to accomodate year 2035 traffic volumes at LOS C.	Eastbound vehicles on Coulee Road have the potential to go the wrong way down the westbound I-94 off ramp. The intersection was designed to minimize that risk.	Slight access change at Stageline Drive. Stageline Drive will be routed one block south and will access Carmichael Road at Center Drive. An additional southbound left turn lane is needed on Carmichael Road at Center Drive.	Most pedestrian crossings will occur at traffic signals.	All four options eliminate operational issues that are expected to develop on eastbound I-94 due to congestion at the I-94/Carmichael Road Interchange under no build conditions.	Widening is required.	Largest footprint of the four options.	500' - 1100'	Based on the current site plan, relocating the parking lot and building is required.
Concept E	Single Point Interchange	B (C)	C (C)		C (D)	Of the four options, concept E and F produced the longest queues.	Short weave distance between the interchange and Coulee Road. Could cause operational issues because of the weave distance and driver expectations on the ramp. Signalizing the right turn movement on the ramp will help mitigate the issue.	None.	Pedestrian crossings at the interchange are with higher speed movements that are not signalized.	All four options eliminate operational issues that are expected to develop on eastbound I-94 due to congestion at the I-94/Carmichael Road Interchange under no build conditions.	Total reconstruction is required. Bridge will have an irregular shape which could impact costs and ease of maintenance.	Minimal right-of-way impact in the northeast quadrant for realigning the frontage road.	600' - 700'	No impact to the current site plan.
Concept F	Single Point Interchange with Coulee Road Relocated	B (C)	C (C)		C (D)	Of the four options, concept E and F produced the longest queues.	The short weave issue identified in Concept E is mitigated by modifying the access at Coulee Road and building the new backage road.	Coulee Road is converted into a RIRO at Carmichael Road. A new backage road will serve as the primary access road for businesses in the northwest quadrant of the interchange.	Pedestrian crossings at the interchange are with higher speed movements that are not signalized.	All four options eliminate operational issues that are expected to develop on eastbound I-94 due to congestion at the I-94/Carmichael Road Interchange under no build conditions.	Total reconstruction is required. Bridge will have an irregular shape which could impact costs and ease of maintenance.	A new backage road is required in the northwest quadrant. The frontage in the northeast quadrant will also be relocated.	600' - 1800'	No impact to the proposed Walmart building or parking lot. However, other identified buildings would need to relocate.
Concept G	Diverging Diamond Interchange	B (B)	B (C)	B (C)	C (D)	Not as much reserve capacity as Concept D, but generates shorter traffic queues than Concept E and F.	Unconventional design which may take time for motorists to adapt to.	Coulee Road access to Carmichael Road will be closed. A new backage road will serve as the primary access road for businesses in the northwest quadrant of the interchange.	Most pedestrian crossings will occur at traffic signals.	All four options eliminate operational issues that are expected to develop on eastbound I-94 due to congestion at the I-94/Carmichael Road Interchange under no build conditions.	Existing Bridge can accommodate the new interchange.	A new backage road is required in the northwest quadrant. The frontage in the northeast quadrant will also be relocated.	600' - 1500'	No impact to the proposed Walmart building or parking lot. However, other identified buildings would need to relocate.

Appendix B

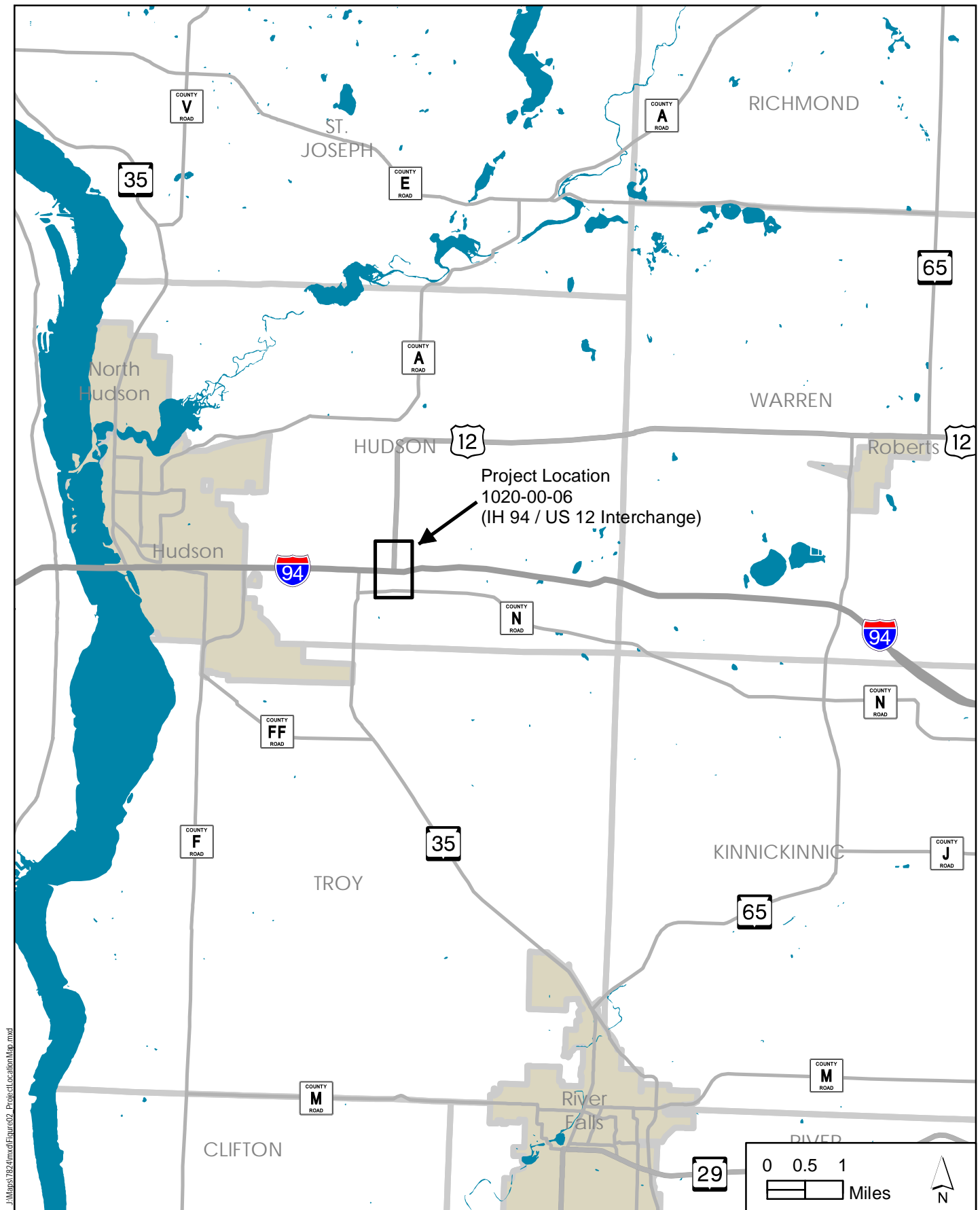
Figures



Area Location Map

IH 94 Hudson Area Interchange Study (Project ID 1020-00-06)
 Wisconsin Department of Transportation
 St. Croix County, Wisconsin

Figure 1



Project Location Map

IH 94 Hudson Area Interchange Study (Project ID 1020-00-06)
 Wisconsin Department of Transportation
 St. Croix County, Wisconsin

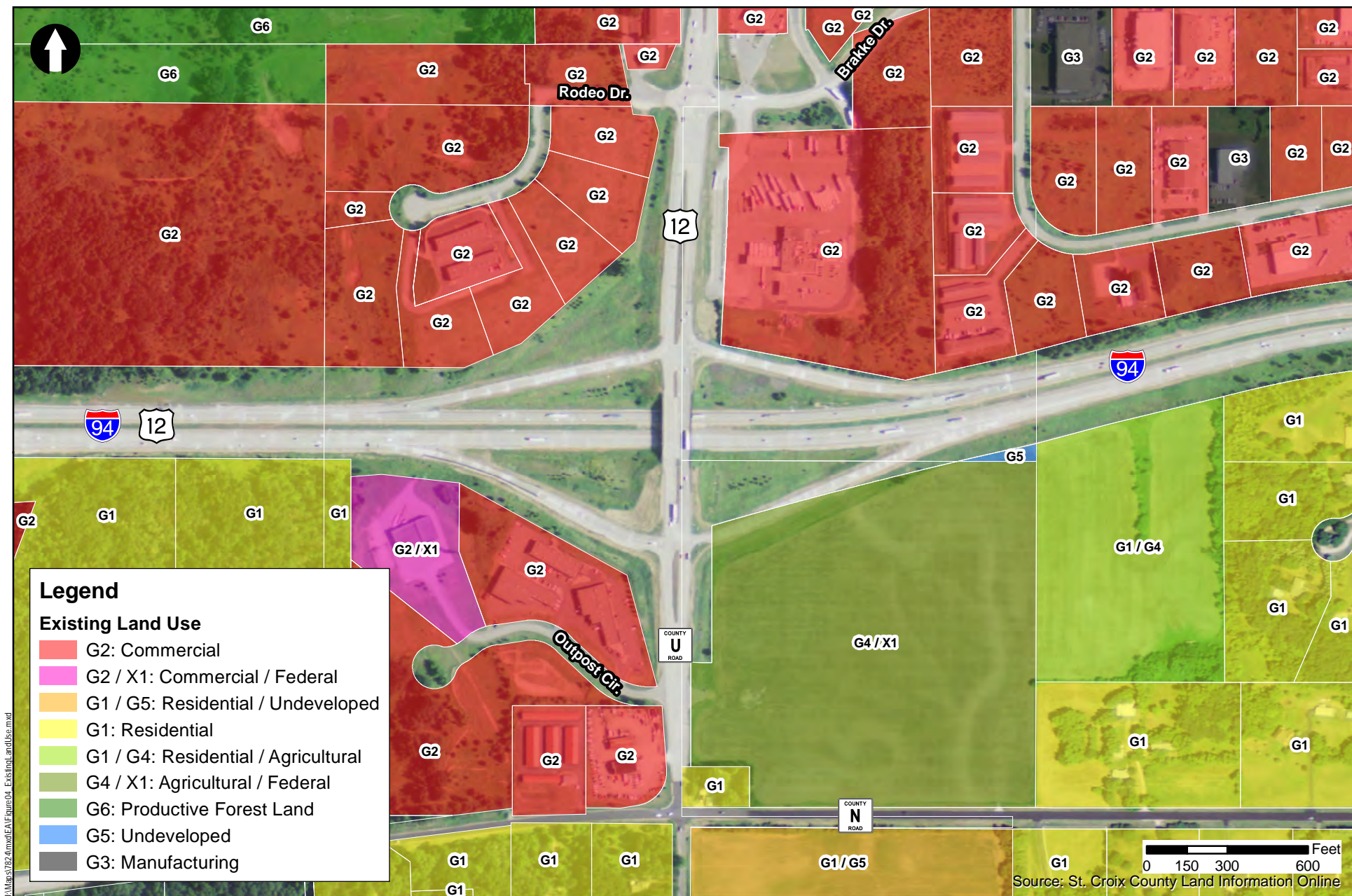
Figure 2



Project Area

IH 94 Hudson Area Interchange Study (Project ID 1020-00-06)
Wisconsin Department of Transportation
St. Croix County, Wisconsin

Figure 3

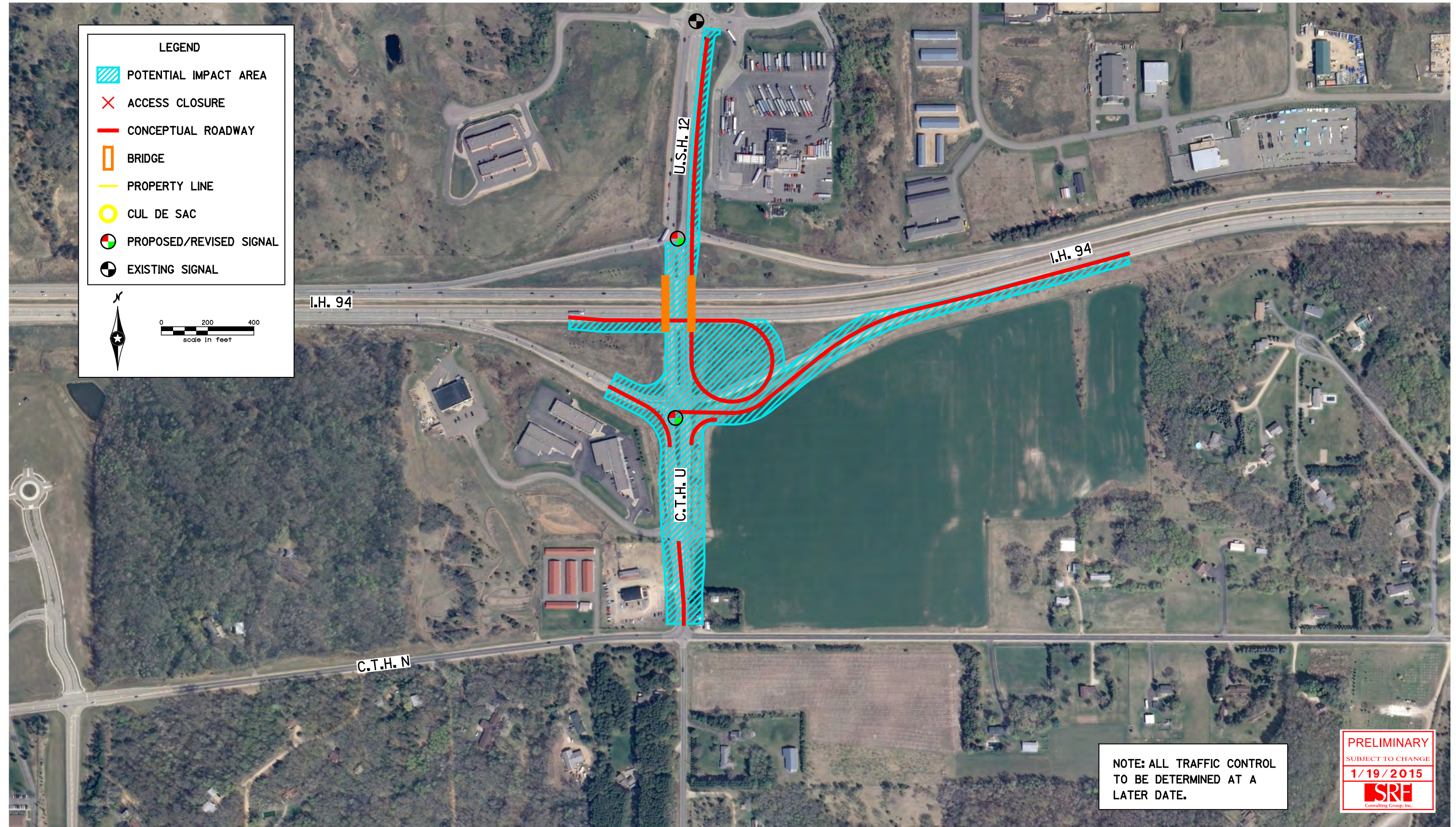


Existing Land Use

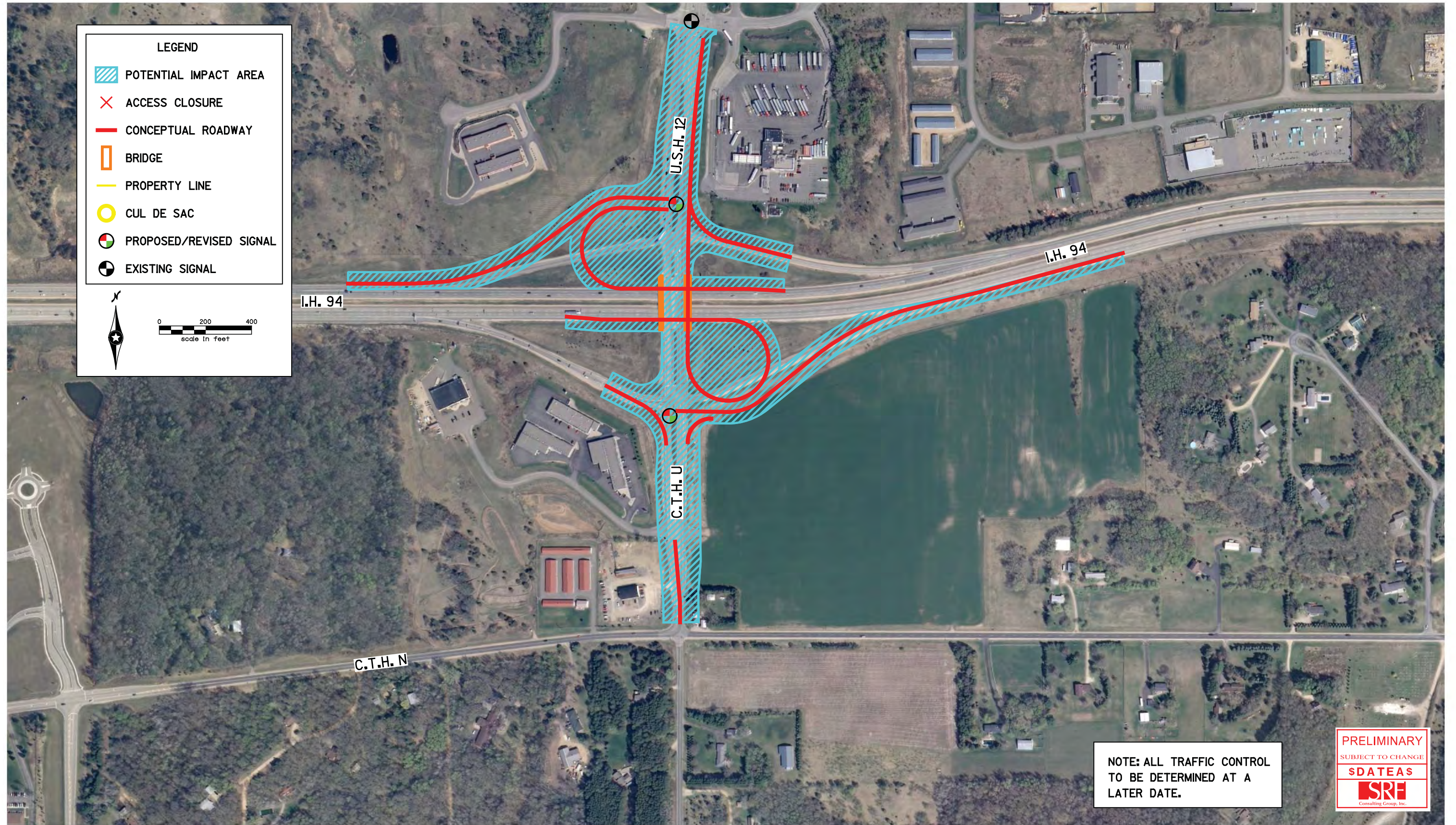
IH 94 / USH 12 Interchange Project (Project ID 1020-00-06)
 Wisconsin Department of Transportation
 St. Croix County, Wisconsin

Figure 4

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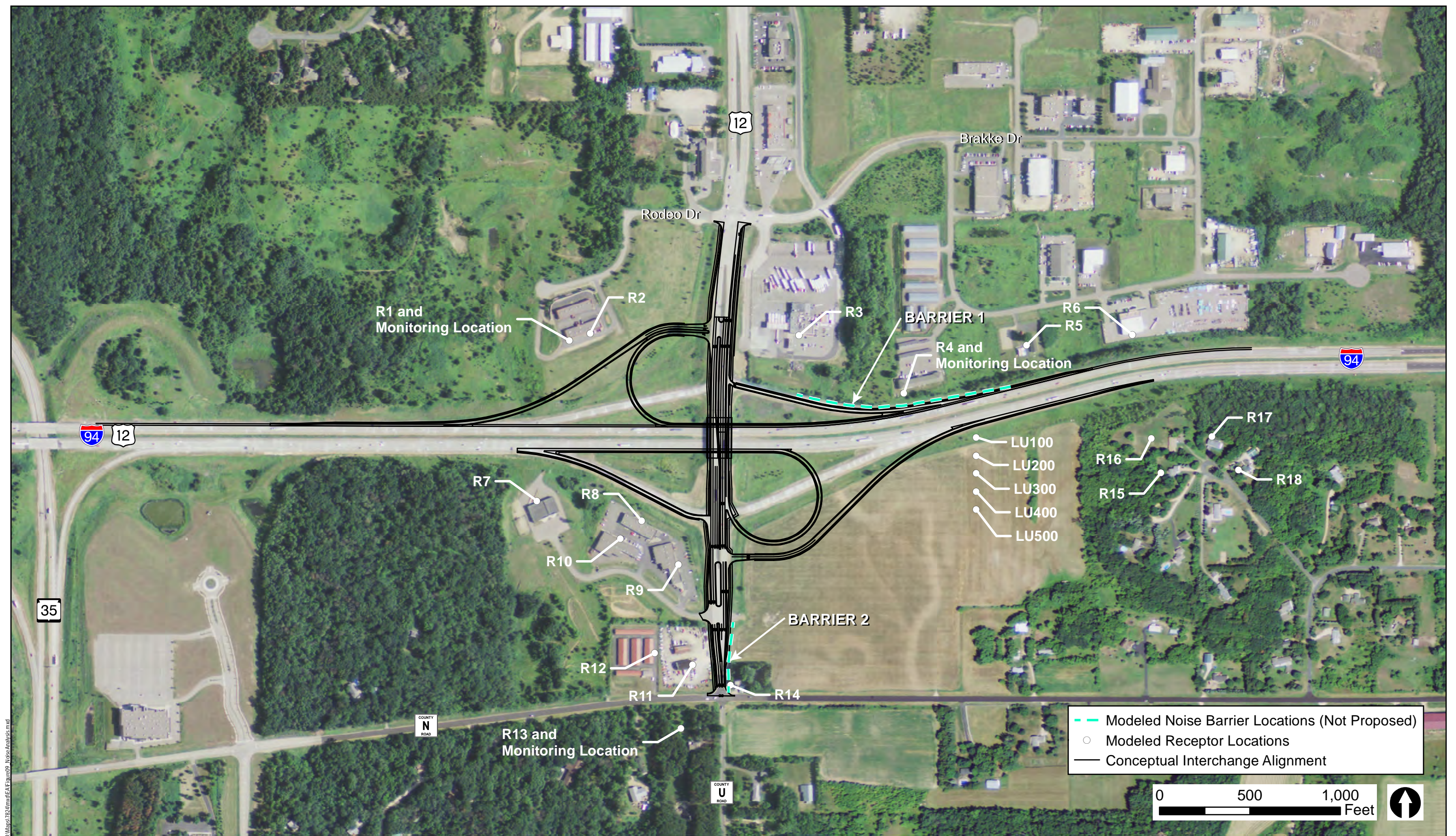




Wetland Impacts

IH 94 / USH 12 Interchange Project (Project ID 1020-00-06)
 Wisconsin Department of Transportation
 St. Croix County, Wisconsin

Figure 8



Noise Analysis

IH 94 / USH 12 Interchange Project (Project ID 1020-00-06)
 Wisconsin Department of Transportation
 St. Croix County, Wisconsin

Figure 9

Appendix C

Agency Correspondence



October 15, 2014

Brett Danner
SRF Consulting Group, Inc.
One Carlson Parkway North, Suite 150
Minneapolis, MN 55447-4443

Subject: **DNR Initial Project Review:**
Project I.D. 1020-00-06
IH 94, USH 12, and CTH U
IH 94/ USH 12 Interchange
St. Croix County
T29N, R19W Sect. 27, 28, 33, 34

Dear Mr. Danner:

The Department has received the information you provided for the proposed above-referenced project on 09/17/2014. According to your proposal, the purpose of this project is to make improvements at the IH 94 / USH 12 interchange. Proposed improvements include: reconstructing the IH 94 / USH 12 interchange, widening the USH 12 bridge over IH 94, reconstructing USH 12 from IH 94 north to the Rodeo Circle / Brakke Drive intersection (including bicycle and pedestrian accommodations), and reconstructing CTH U from IH 94 south to the CTH U / CTH N intersection (including bicycle and pedestrian accommodations).

Preliminary information has been reviewed by DNR staff for the project under the DOT/DNR Cooperative Agreement. Initial comments on the project as proposed are included below and assume that additional information will be provided that addresses all resource concerns identified.

A. Project-Specific Resource Concerns

Wetlands:

There is potential for wetland impacts to occur as a result of this project and therefore wetland impacts must be avoided and/or minimized to the greatest extent possible. Unavoidable wetland impacts must be mitigated for in accordance with the DOT/DNR Cooperative Agreement and the Wisconsin Department of Transportation Wetland Mitigation Banking Technical Guideline. The Department requests information regarding the amount and type of unavoidable wetland impacts.

There are mapped hydric soils in the southeast portion of the project area, a wetland determination and/or delineation should be done.

Endangered Resources (ER):

Based upon a review of the Natural Heritage Inventory (NHI) and other Department records on 10/13/2014, no Endangered Resources or suitable habitat that could be impacted by this project are known or likely to occur in the project area or its vicinity.

B. Construction Site Considerations:

The following issues may be addressed in the Special Provisions and the contractor will be required to outline their construction methods in the Erosion Control Implementation Plan (ECIP).

Erosion control/Stormwater

Erosion control devices should be specified on the construction plans. All disturbed bank areas should be adequately protected and restored as soon as feasible.

An adequate erosion control implementation plan (ECIP) for the project must be developed by the contractor and submitted to this office for review at least 14 days prior to the preconstruction conference.

The above comments represent the Department's initial concerns for the proposed project and do not constitute final concurrence. Final concurrence will be granted after review of plans and further consultation if necessary. If any of the concerns or information provided in this letter requires further clarification, please contact this office at (715) 839-1609.

Sincerely,



Chris Willger
Environmental Analysis & Review Specialist

CC: Nick Schaff, WisDOT Regional Environmental Coordinator
Jim Koenig, WisDOT Project Manager



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Wisconsin-Minnesota Ecological Services Field Office



4101 American Blvd. East
Bloomington, Minnesota 55425-1665
Telephone 612-725-3548
FAX 612-725-3609

2661 Scott Tower Drive
New Franken, Wisconsin 54229-9565
Telephone 920-866-1717
FAX 920-866-1710

505 Science Drive
Madison, Wisconsin 53711-1093
Telephone 608-238-9333
FAX 608-238-9334

To: James Koenig USFWS Project ID: 15-TA-0014

Regarding your: ☒ Letter ☐ E-mail ☐ Fax **Dated:** September 25, 2014

RE: WisDOT ID 1020-00-06, Interstate 94/USH 12 Interchange, Town of Hudson, St. Croix Co., WI **+**

Pursuant to the **Endangered Species Act of 1973**, the **Fish and Wildlife Coordination Act**, and the **Migratory Bird Treaty Act**, the U.S. Fish and Wildlife Service (Service) has reviewed the information provided for the project noted above. Our comments follow (see checked boxes below).

- ☐ Due to the project location, federally-listed, proposed, or candidate species may occur within the project area. To evaluate your project for endangered and threatened species concerns, please visit our website at http://www.fws.gov/midwest/endangered/lists/cty_idx.html. If you find that there are endangered, threatened, proposed, or candidate species in the county where your project occurs, you may proceed with your initial determination by following the technical assistance instructions, also on the Web, at: <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. The instructions will lead you to contact this office if your project may affect one or more candidate, proposed, or listed species or proposed or final critical habitat. If you determine that your proposed action will have no effect whatsoever on these species or critical habitat there is no requirement to consult with this office and your Section 7 responsibilities are completed.
- ☒ Due to the project location, no federally-listed, proposed, or candidate species, or designated critical habitat occurs within the area that would be affected directly or indirectly by the proposed action (action area).
- ☒ We recommend checking our website (<http://www.fws.gov/midwest/endangered>) every 6 months from the date of this letter to ensure that listed species presence/absence information for the proposed project is current.
- ☐ If migratory birds are known to nest on any structures (e.g., bridges) which may be disturbed by project construction, activities should begin (and be concluded) before the initiation of the breeding season for those species or after the breeding has concluded. Alternatively, the structures can be *tightly screened* before the breeding season (May 1 through August 30) to prevent nesting. If you will not be able to begin construction prior to or after the breeding season, please contact our office.
- ☐ Under the Migratory Bird Treaty Act of 1918, as amended, it is unlawful to take, capture, kill, or possess migratory birds, their nests, eggs, and young. If migratory birds are known to nest on any structures or habitat which may be disturbed by project construction, activities (e.g., tree removal) should begin and be completed before the initiation of the breeding season for those species or after breeding has concluded. Generally, we recommend that any habitat disturbance occur before May 1 or after August 30 to minimize potential impacts to migratory birds, but please be aware that some species may initiate nesting before May 1.

- ☐ We recommend, when possible, that bridges and abutments be designed and constructed in such a way as to allow terrestrial wildlife to pass under the bridge without entering the river during normal flow conditions. This may require lengthening the bridge, limitations on the use of exposed riprap, modifications to the surface of the riprap (e.g., grouting the surface or filling with soil or other natural materials), or modifications in the substrate and/or slope at the base of the abutments, as some wildlife species cannot or prefer not to traverse areas of riprap.
- ☐ The Service supports and encourages the maintenance or creation of habitat connectivity wherever possible. As such, we recommend installing bridges or culverts that do not impede the movement of water, sediments, or aquatic species along existing waterways. Specifically, we strongly recommend replacing failing culverts with bridges or bottomless culverts where possible. At minimum, we recommend new culverts be set at a zero slope, with a width that matches bank flow.
- ☐ We note that the project area includes wetlands. In refining and selecting project alternatives, efforts should be made to select an alternative that does not adversely impact wetlands. If no other alternative is feasible and it is clearly demonstrated that project construction resulting in wetland disturbance or loss cannot be avoided, a wetland mitigation plan should be developed that identifies measures proposed to minimize adverse impacts and replace lost wetland habitat values and other wetland functions and values.

USFWS Contact(s): Lisa Mandell **Phone Number:** 612-725-3548 x2201

Date: October 9, 2014



State of Wisconsin
Governor Scott Walker

Department of Agriculture, Trade and Consumer Protection
Ben Brancel, Secretary

September 5, 2014

Brett Danner
SRF Consulting Group
One Carlson Parkway North Ste 150
Minneapolis, MN 55447

Dear Brett Danner:

Re: Project ID: 1020-00-06
Project Name IH 94/USH 12 Interchange Reconstruction
County: Saint Croix

The Department has received the notification you submitted concerning the potential need for an agricultural impact statement (AIS) for the above project. Based upon the information received, it appears that an AIS is required for this project.

The Department is reviewing the project to determine what, if any, additional information is needed to prepare the AIS. If no additional information is necessary, you will receive written notification that the AIS is being prepared. The AIS will be completed within 60 days of the date of that notification.

Upon completion of the AIS, the Department will charge a fee to cover preparation costs as stipulated in §32.035, Wisconsin Statutes. The potential condemnor may not negotiate with or make a jurisdictional offer to any landowner until 30 days after the AIS has been published. Please contact me if you have questions concerning the AIS.

Sincerely,

Alice Halpin
Agricultural Impact Program

DATCP ID: #4016

Agriculture generates \$59 billion for Wisconsin

2811 Agriculture Drive • PO Box 8911 • Madison, WI 53708-8911 • Wisconsin.gov

An equal opportunity employer

December 15, 2014

Cynthia Warzecha
Associate
SRF Consulting Group, Inc.
One Carlson Parkway North, Suite 150, Minneapolis, MN 55447-4443

RE: Project I.D. : 1020-00-06
IH 94/12 Interchange Reconstruction

Dear Cynthia:

The Natural Resources Conservation Service (NRCS) staff has reviewed the above referenced with respect to requirements of the Farmland Protection Policy Act (FPPA).

There is approximately 5 acres of Prime Farmland that will be affected by this project.

The project is exempt from the FPPA because there are no other viable options.

Thank you for the opportunity to comment on this proposed project. If you have any questions or future projects in need of review please feel free to contact me.

Sincerely,



Tim Miland
Area Resource Soil Scientist
USDA-NRCS

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request September 4, 2014				
Name of Project IH 94/US 12 Interchange Reconstruction		Federal Agency Involved Federal Highway Administration				
Proposed Land Use Interchange Reconstruction		County and State St. Croix, Wisconsin				
PART II (To be completed by NRCS)		Date Request Received By NRCS 9/5/2014		Person Completing Form: Tim Miland		
Does the site contain Prime, Unique, Statewide or Local Important Farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Acres Irrigated _____ Average Farm Size _____		
Major Crop(s) corn, hay, sobeans	Farmable Land In Govt. Jurisdiction Acres: _____ %		Amount of Farmland As Defined in FPPA Acres: 5 %			
Name of Land Evaluation System Used LESA	Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS 12/15/2014			
PART III (To be completed by Federal Agency)		Alternative Site Rating				
		Site A	Site B	Site C	Site D	
A. Total Acres To Be Converted Directly		8.9				
B. Total Acres To Be Converted Indirectly		0.0				
C. Total Acres In Site		77.4				
PART IV (To be completed by NRCS) Land Evaluation Information						
A. Total Acres Prime And Unique Farmland		5.0				
B. Total Acres Statewide Important or Local Important Farmland		0				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		.001				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value						
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		73				
PART VI (To be completed by Federal Agency) Site Assessment Criteria (Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)		Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	2				
2. Perimeter In Non-urban Use	(10)	2				
3. Percent Of Site Being Farmed	(20)	1				
4. Protection Provided By State and Local Government	(20)	0				
5. Distance From Urban Built-up Area	(15)	0				
6. Distance To Urban Support Services	(15)	0				
7. Size Of Present Farm Unit Compared To Average	(10)	0				
8. Creation Of Non-farmable Farmland	(10)	0				
9. Availability Of Farm Support Services	(5)	5				
10. On-Farm Investments	(20)	0				
11. Effects Of Conversion On Farm Support Services	(10)	0				
12. Compatibility With Existing Agricultural Use	(10)	5				
TOTAL SITE ASSESSMENT POINTS		160	15	0	0	0
PART VII (To be completed by Federal Agency)						
Relative Value Of Farmland (From Part V)		100	73	0	0	0
Total Site Assessment (From Part VI above or local site assessment)		160	15	0	0	0
TOTAL POINTS (Total of above 2 lines)		260	88	0	0	0
Site Selected: Site A		Date Of Selection 12/23/2014		Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>		
Reason For Selection: No other viable options.						
Name of Federal agency representative completing this form: Nicole Zappetillo, SRF Consulting Group					Date: 12/23/2014	

(See Instructions on reverse side)

Form AD-1006 (03-02)

Appendix D

Section 106 Documentation

**SECTION 106 REVIEW ARCHAEOLOGICAL/HISTORICAL INFORMATION**Wisconsin Department of Transportation
DT1635 6/2014

RECEIVED

OCT 09 2014

SHPO

For instructions, see [FDM Chapter 26](#).**I. PROJECT INFORMATION**☐ Amended Submittal (include new information only)

Project ID 1020-00-06	Highway – Street Interstate 94 (IH 94)	County St. Croix
Project Termini US 12 interchange (see project description for study boundaries)		Region – Office Northwest Region
Regional Project Engineer – Project Manager James Koenig, P.E.		(Area Code) Telephone Number (715) 838-8391
Consultant Project Engineer – Project Manager SRF Consulting Group, Inc. - Josh Maus, P.E., P.T.O.E.		(Area Code) Telephone Number (763) 249-6721
Archaeological Consultant AECOM - Amy Ollendorf, Ph.D., P.G., R.P.A.		(Area Code) Telephone Number 612-376-2000
Architecture/History Consultant AECOM - Amy Ollendorf, Ph.D., P.G., R.P.A.		(Area Code) Telephone Number 612-376-2000
Date of Need October 2014		SHSW Number
Return a Signed Copy of This Form to James Koenig		

II. PROJECT DESCRIPTION

Project Length 0.5 miles	Land to be Acquired: Fee Simple 9.52 acres		Land to be Acquired: Easement 0 acres		
Distance as measured from existing centerline	Existing	Proposed	Other Factors	Existing	Proposed
Right-of-Way Width	105'-259'	148'-322'	Terrace Width	6'	7'
Shoulder	10'	0'	Sidewalk Width	N/A	10'
Slope Intercept	71'	98'	Number of Lanes	2	2
Edge of Pavement	24'	24'	Grade Separated Crossing IH 94/US 12 interchange	Yes	Yes
Back of Curb Line	27'	31'	Vision Triangle acres	N/A	N/A
Realignment	N/A	N/A	Temporary Bypass acres	N/A	N/A
Other – List:	N/A	N/A	Stream Channel Change	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Attach Map(s) that Depict "Maximum" Impacts.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Tree Topping and/or Grubbing	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Brief Narrative Project Description: Include all ground disturbing activities. For archaeology, include plan view map indicating the maximum area of ground disturbance and/or new right-of-way, whichever is greater. Include all temporary, limited and permanent easements. For amendments (e.g. design refinements, scope changes, etc) description should only include new/added project actions and materials.

See attached continuation sheet for the project description, description of ground disturbing activities, and plan view maps.

☒ Add continuation sheet, if needed.

SECTION 106 REVIEW ARCHAEOLOGICAL/HISTORICAL INFORMATION (continued)

Wisconsin Department of Transportation DT1635

III. CONSULTATION

How has notification of the project been provided to:

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Property Owners | <input checked="" type="checkbox"/> Historical Societies/Organizations | <input checked="" type="checkbox"/> Native American Tribes |
| <input checked="" type="checkbox"/> Public Information Meeting Notice | <input type="checkbox"/> Public Information Meeting Notice | <input type="checkbox"/> Public Info. Mtg. Notice |
| <input checked="" type="checkbox"/> Letter - Required for Archaeology | <input checked="" type="checkbox"/> Letter | <input checked="" type="checkbox"/> Letter |
| <input type="checkbox"/> Telephone Call | <input type="checkbox"/> Telephone Call | <input type="checkbox"/> Telephone Call |
| <input type="checkbox"/> Other: | <input type="checkbox"/> Other: | <input type="checkbox"/> Other: |

Attach one copy of the base letter, list of addresses and comments received. For history include telephone memos as appropriate.

IV. AREA OF POTENTIAL EFFECTS – APE**ARCHAEOLOGY:** Area of potential effect for archaeology is the existing and proposed ROW, temporary and permanent easements. Agricultural practices do not constitute a ground disturbance exemption.**HISTORY:** Describe the area of potential effects for buildings/structures.

The history area of potential effects (APE) includes properties and structures adjacent to the IH 94/US 12 interchange. See attached continuation sheets and survey reports.

V. PHASE I – ARCHAEOLOGICAL OR RECONNAISSANCE HISTORY SURVEY NEEDED**ARCHAEOLOGY**

- ☒ Archaeological survey is needed
- ☐ Archaeological survey is not needed
- ☐ Screening list (date)
- ☐ Burial site in project area, Wis. Stat. 157.70 applies

HISTORY

- ☒ Architecture/History survey is needed
- ☐ Architecture/History survey is not needed
- ☐ Screening list (date)
- ☐ No structures or buildings of any kind within APE
- ☐ Non-Survey History Documentation attached

VI. SURVEY COMPLETED**ARCHAEOLOGY**

- ☒ NO archaeological sites(s) identified – ASFR attached
- ☐ NO potentially eligible site(s) in project area – Phase I Report attached
- ☐ Potentially eligible site(s) identified-Phase I Report attached
- ☐ Avoided through redesign
- ☐ Phase II conducted – go to VII (Evaluation)
- ☐ Phase I Report – Cemetery/cataloged burial documentation

HISTORY

- ☒ NO buildings/structures identified – Report attached
- ☐ Potentially eligible buildings/structures identified in the APE – Report attached
- ☐ Avoided through redesign
- ☐ Previously listed/eligible property identified in the APE – Report attached

VII. DETERMINATION OF ELIGIBILITY (EVALUATION) COMPLETED

- | | |
|---|---|
| <input type="checkbox"/> No arch site(s) eligible for NRHP – Phase II Report attached | <input type="checkbox"/> No buildings/structure(s) eligible for NRHP – DOE attached |
| <input type="checkbox"/> Arch site(s) eligible for NRHP – Phase II Report attached | <input type="checkbox"/> Building/structure(s) eligible for NRHP – DOE attached |
| <input type="checkbox"/> Site(s) eligible for NRHP – DOE attached | |

VIII. COMMITMENTS/SPECIAL PROVISIONS – must be included with special provisions language

- ☐ Per Wis. Stat. 157.70 obtain burial authorization from WHS one year prior to construction.

IX. PROJECT DECISION

- ☒ No historic properties (historical or archaeological) in the APE.
- ☐ No historic properties (historical or archaeological) affected.
- ☐ Historic properties (historical and/or archaeological) may be affected by project;
- ☐ Go to Step 4: Assess affects and begin consultation on affects.
- ☐ Documentation for Determination of No Adverse Effects is included with this form. WisDOT has concluded that this project will have No Adverse Effect on historic properties. Signature by SHPO below indicates SHPO concurrence in the DNAE and concludes the Section 106 Review process for this project.

X. SIGNATURES

James Koenig
Digitally signed by James Koenig
 DN: cn=James Koenig, o=WisDOT,
 ou=NW Region,
 email=james.koenig@dot.wis.gov, c=US
 Date: 2014.09.18 08:32:44 -0500

(Regional Project Manager
Signature)(Date –
m/d/yy)

X *Rebecca* 10/7/14
 (WisDOT Historic Preservation
 Officer Signature) (Date –
m/d/yy)

X *Kimberly Cook*
 (State Preservation Officer
 Signature) (Date –
m/d/yy)

X *Brian Danner* 9/17/2014
 (Consultant Project Manager
 Signature) (Date –
m/d/yy)

1 March 26 2015

SECTION 106 REVIEW

ARCHAEOLOGICAL/HISTORICAL INFORMATION

Wisconsin Department of Transportation
DT1635 9/2013

II. PROJECT DESCRIPTION: IH 94/US 12 Interchange

Brief Project Description

The project area is located in the Town of Hudson in St. Croix County, as shown in Figure 1. The project study boundaries along IH 94 extend from approximately 3,500 feet west of US 12/County U to approximately 3,200 feet east of US 12/County U. The project study boundaries along US 12 extend approximately 1,300 feet north of IH 94. The project study boundaries along County U extend approximately 1,500 feet south of IH 94.

The project will consist of:

- Reconstructing the IH 94/US 12 interchange,
- Reconstructing US 12 from IH 94 north to the Rodeo Circle/Brakke Drive intersection, and
- Reconstructing County U from IH 94 south to the County U/County N intersection.

The proposed IH 94/US 12 interchange improvements are depicted in Figure 2.

Ground Disturbing Activities

Ground disturbing activities associated with future construction of the Proposed Action include:

- Grading to construct loop ramps in the southeast and northwest quadrants of IH 94/US 12.
- Removal of existing ramps in the southeast and northwest quadrants of the IH 94/US 12 interchange.
- Grading to construct a new eastbound on ramp.
- Grading to construct a new westbound on ramp.

III. CONSULTATION

Property Owners

List of addresses (base letter attached).

Ronn Hechter
PO 167
Bayport, MN 55003

Current Resident
594 Outpost Circle
Hudson, WI 54016

Current Resident
596 Outpost Circle
Hudson, WI 54016

Current Resident
592 Outpost Circle
Hudson, WI 54016

Thomas & Tami Datwyler
1701 Coulee Road
Hudson, WI 54016

Current Resident
732 Rodeo Drive
Hudson, WI 54016

Current Resident
637 Commerce Drive
Hudson, WI 54016

Joseph Campion
596 Sutcliff Circle
Mendota Heights, MN 55118

Hendricks Investments
1286 89th Street
New Richmond, WI 54017

Town of Hudson
Vickie Shaw, Clerk
980 County Road A
Hudson, WI 54016

David & Lila Spencer
704 Baker Lane
Hudson, WI 54016

413 6th Street North LLC
413 6th Street North
Hudson, WI 54016

Current Resident
736 Rodeo Drive
Hudson, WI 54016

Team Investments LLC
1231 Industrial Street
Hudson, WI 54016

Current Resident
606 Brakke Drive
Hudson, WI 54016

Current Resident
601 Brakke Drive
Hudson, WI 54016

HPT TA Properties Trust
24601 Centre Ridge Road Suite 200
Westlake, OH 44145

Larry & Heike Ahlers
672 Gilbert Road
Hudson, WI 54016

Louise Weiher
566 County Road North
Hudson, WI 54016

Oakley Properties LLC
1353 Awatukee Trail
Hudson, WI 54016

Current Resident
625 Commerce Drive
Hudson, WI 55016

C P T LLC
707 Commerce Drive Suite 410
Woodbury, MN 55125

E & J Enterprises LLC
684 Cottage Lane
Hudson, WI 54016

Current Resident
631 Commerce Drive
Hudson, WI 54016

Waterworks Development LLC
707 Commerce Drive Suite 410
Woodbury, MN 55125

Richard N Pearson
1109 Crestview Drive
Hudson, WI 54016

Kernon Bast
948 Labarge Road
Hudson, WI 54016

Barbara Kenall Kenall Enterprises
36 Yacht Club Drive #204
North Palm Beach, FL 33408

Historical Societies/Organizations

Letter attached.

St. Croix County Historical Society
The Octagon House Museum
Attn: Historical Society Director
1004 Third Street
Hudson, WI 54016

Native American Tribes

List of addresses (base letter attached).

**Bad River Band of Lake Superior
Chippewa Indians of Wisconsin**

Attn: Edith Leoso, THPO
P.O. Box 39
Odanah, WI 54861

**Forest County Potawatomi
Community of Wisconsin**

Attn: Melissa Cook, THPO
Tribal Office
P.O. Box 340
Crandon, WI 54520

**Lac Courte Oreilles Band of
Lake Superior
Chippewa Indians
of Wisconsin**

Attn: Jerry Smith, THPO
Tribal Office
13394 W. Trepania Road
Hayward, WI 54843

**Lac du Flambeau Band of
Lake Superior
Chippewa Indians
of Wisconsin**

Attn: Melinda Young, THPO
Tribal Historic Preservation Office
P.O. Box 67
Lac du Flambeau, WI 54538

**Lac Vieux Desert Band of
Lake Superior Chippewa Indians**

Attn: giwewiizhigookway Martin, THPO
Ketegitigaaning Ojibwe Nation
P.O. Box 249
Watersmeet, MI 49969

**Menominee Indian Tribe
of Wisconsin**

Attn: Dave Grignon, THPO
P.O. Box 910
Keshena, WI 54135

Prairie Band Potawatomi Nation

Attn: Hattie Mitchell
16281 Q Road
Mayetta, KS 66509

Prairie Island Indian Community

Attn: Marc Mogan
Minnesota Mdewakanton Sioux
5636 Sturgeon Lake Road
Welch, MN 55089

**Fond du Lac Band of Lake
Superior Chippewa**

Attn: LeRoy Defoe, THPO
1720 Big Lake Road
Cloquet, MN 55720

Ho-Chunk Nation

Attn: William Quackenbush, THPO
Executive Offices
P.O. Box 667
Black River Falls, WI 54615

**Red Cliff Band of Lake Superior
Chippewa Indians of Wisconsin**

Attn: Larry Balber, THPO
88385 Pike Road, Highway 13
Bayfield, WI 54814

**Sac and Fox Nation of Missouri
in Kansas and Nebraska**

Attn: Edmore Green
305 N. Main
Reserve, Kansas 66434

Sac and Fox Nation of Oklahoma

Attn: Sandra Massey, NAGPRA Rep.
RR 2, Box 246
Stroud, OK 74079

**St. Croix Band
Chippewa Indians of Wisconsin**

Attn: Wanda McFaggen, THPO
Tribal Historic Preservation Office
24663 Angeline Ave.
Webster, WI 54893-9246

Sac and Fox of the Mississippi in Iowa

Attn: Jonathan Buffalo, NAGPRA Rep.
349 Meskwaki Road
Tama, Iowa 52339-9629

**Sokaogon Chippewa Community
Mole Lake Band**

Attn: Cultural Resource Director
3051 Sand Lake Road
Crandon, WI 54520

III. AREA OF POTENTIAL EFFECTS

Archaeology

The area of potential effect (APE) for archaeology is defined in Section IV of the Section 106 Review Archaeological/Historical Information form and illustrated in Figure 2.

History

The APE for architectural history should account for any physical, auditory, atmospheric (i.e., emissions), or visual impacts to historic properties. The primary considerations are visual and auditory effects because they have the potential to affect the largest area. Because this project is an existing highway, any minor impacts associated with visibility would be limited to parcels of land adjacent to the project area. Traffic patterns are not anticipated to increase or change, and although there may be an increase in noise during construction, this is anticipated to be temporary. While dust may be a consideration during construction, it will be temporary and any potential effects will not extend beyond adjacent parcels. Based on this rationale, the APE for architectural history includes all parcels of land along/within each quadrant of the IH 94/US 12 interchange, as illustrated in Figure 2.

ATTACHMENTS

Figures

Figure 1: Project Location Map

Figure 2: Area of Potential Effect (Archaeology and Architectural History)

Correspondence

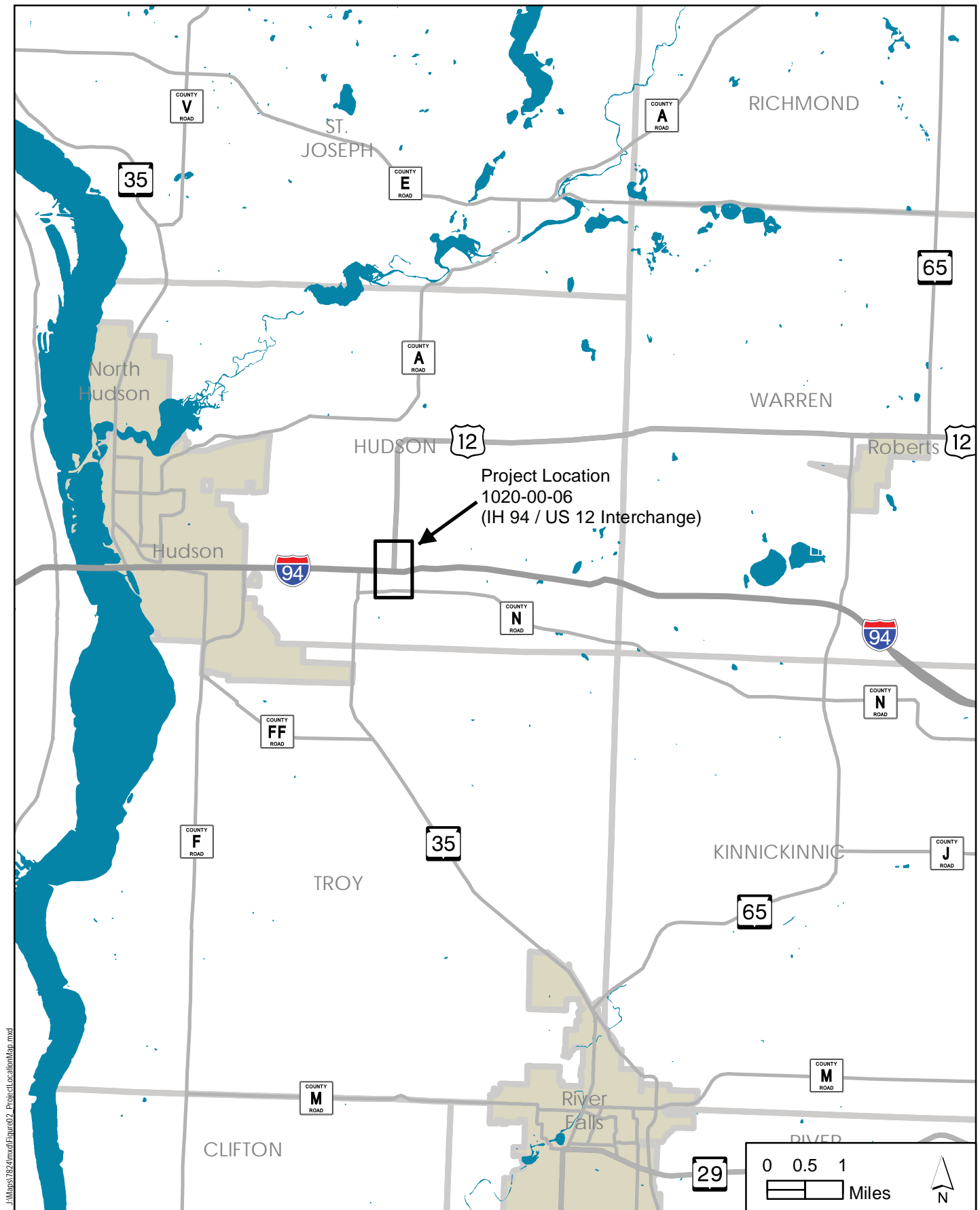
IH 94/US 12 Property Owner Notification – Base Letter

St. Croix County Historical Society

IH 94/US 12 Tribal Coordination – Base Letter

Reports

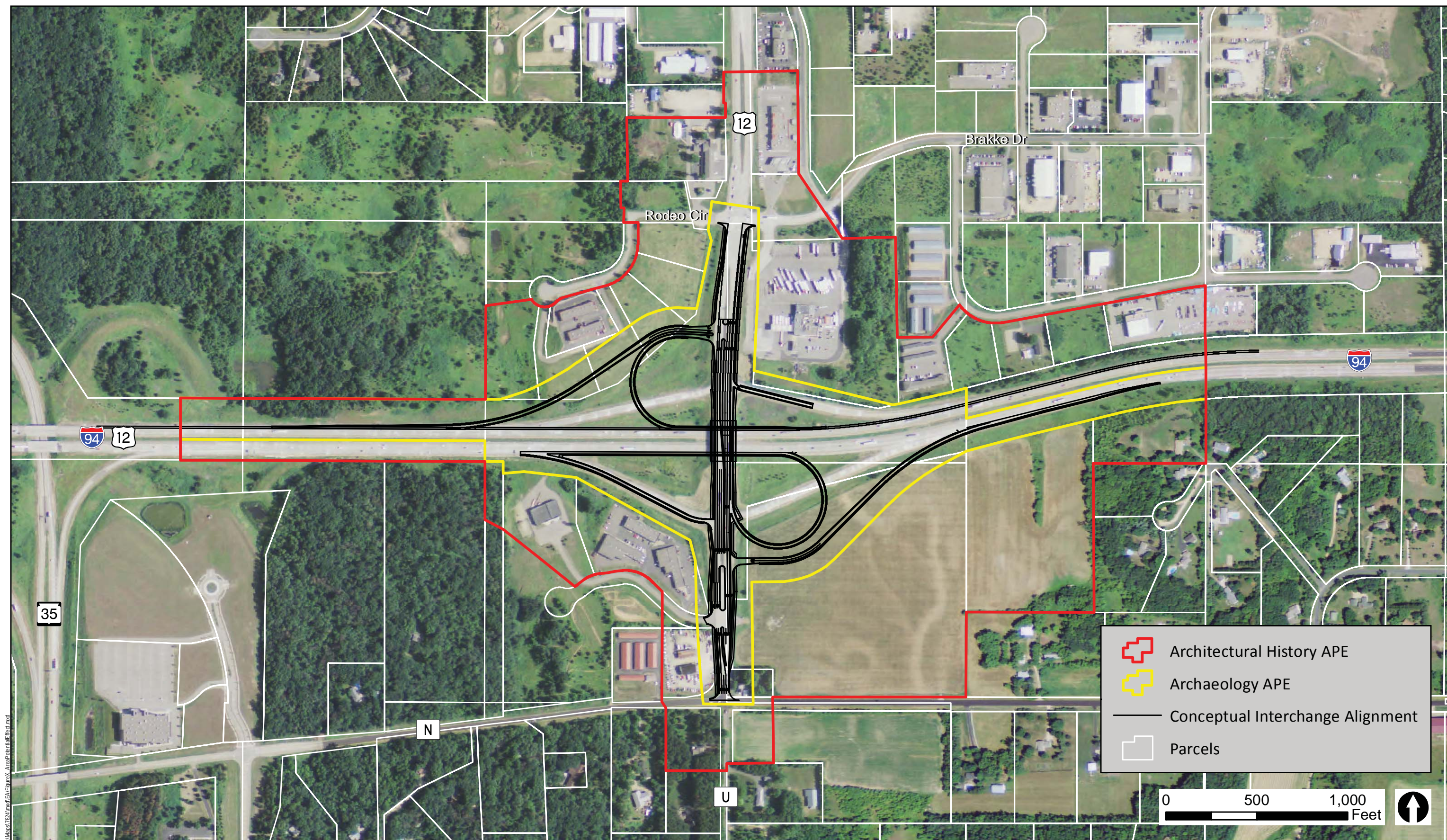
Cultural Resources Study Letter Report



Project Location Map

IH 94 Hudson Area Interchange Study (Project ID 1020-00-06)
Wisconsin Department of Transportation
St. Croix County, Wisconsin

Figure 1

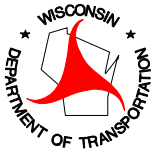


Area of Potential Effect (Archaeology and Architectural History)

I-94 Hudson Area Interchange Study, IH 94 / USH 12 Interchange

10 1020-00-06

Figure 2



**Division of Transportation
Systems Development**
Northwest Region – Eau Claire Office
718 W. Clairemont Ave.
Eau Claire, WI 54701-5108

Scott Walker, Governor
Mark Gottlieb, P.E., Secretary
Internet: www.dot.wisconsin.gov

Telephone: 715-836-2891
Toll Free: 800-991-5285
Facsimile (FAX): 715-836-2807
E-mail: eauclaire.dtd@dot.state.wi.us

8/22/2014

Ronn Hechter
PO 167
Bayport, MN 55003

Re: Interstate 94/US Highway 12 Interchange, St. Croix County
WisDOT ID 1020-00-06

Dear Mr. Hechter:

The Wisconsin Department of Transportation (WisDOT) Northwest Region is in the process of developing plans for a proposed project located on Interstate 94 (IH 94) at the US Highway 12 (USH 12) interchange in the Town of Hudson in St. Croix County. The project will consist of:

- Reconstructing the IH 94/USH 12 interchange,
- Reconstructing USH 12 from IH 94 north to the Rodeo Circle/Brakke Drive intersection, and
- Reconstructing County Highway U from IH 94 south to the County Highway U/County Highway N intersection.

On July 1, 2014, a public information meeting was held to familiarize interested parties with the project. In the near future, various surveys will be conducted in the project area so that an assessment can be made about the project's effect upon the environment. Information obtained from these surveys will assist the project planners and engineers to avoid, minimize, or mitigate the proposed project's effects on natural and cultural resources.

SRF Consulting Group, Inc. and AECOM have been contracted by WisDOT to complete the environmental documentation and cultural resources investigations necessary for the proposed IH 94/USH 12 interchange project. The cultural resources investigations consist of two components: an archaeological investigation and an architectural history survey. We are contacting you to notify you that your property is located within the general boundaries of the survey area. We are proposing to conduct cultural resources investigations on your property.

The proposed archaeological investigations will be conducted in previously undisturbed areas or where new right of way or easements may be required to construct the project. The archaeologist may perform shovel tests (approximately 12 inches by 12 inches) every 50 feet in areas where the ground surface is not visible and has not been disturbed by previous construction or grading. If the ground surface is not obscured by vegetation, the survey will simply involve walking the proposed right of way. All areas disturbed during the survey will be restored to their original condition. Every effort will be made to cause you as little inconvenience as possible, to perform the work in a timely manner, and to answer any questions about the work being done. In all cases, the work site areas will be restored to their previous condition.

During the architectural history survey, any buildings 45 years or older will be documented and the exterior will be documented by a historian. This survey may require that your property be accessed to facilitate documenting historic buildings. This study will not restrict future use of your property in any way or require any special work on your part.

The cultural resources investigations are scheduled to be conducted between August 27 and September 5, 2014.

Wetland investigations will also be conducted within areas that may be disturbed during future construction of the proposed project. Wetland boundaries will be identified and documented by a wetland scientist. Wetland investigations are anticipated to be completed prior to October 2014.

I will be happy to answer any questions you may have regarding the proposed project. Please feel free to contact me at James.Koenig@dot.wi.gov or call me at (715) 838-8391.

Sincerely,

A handwritten signature in black ink, appearing to read "James Koenig". The signature is fluid and cursive, with the first name "James" and last name "Koenig" clearly distinguishable.

James Koenig
NW Region Systems Planning Supervisor

cc: Nick Schaff, WisDOT Northwest Region Environmental Coordinator
Josh Maus, SRF Consulting Group, Inc.



**Division of Transportation
Systems Development**
Northwest Region – Eau Claire Office
718 W. Clairemont Ave.
Eau Claire, WI 54701-5108

Scott Walker, Governor
Mark Gottlieb, P.E., Secretary
Internet: www.dot.wisconsin.gov

Telephone: 715-836-2891
Toll Free: 800-991-5285
Facsimile (FAX): 715-836-2807
E-mail: eauclaire.dtd@dot.state.wi.us

8/19/2014

St. Croix County Historical Society
The Octagon House Museum
Attn: Historical Society Director
1004 Third Street
Hudson, WI 54016

Re: Interstate 94/US Highway 12 Interchange, St. Croix County
WisDOT ID 1020-00-06

The Wisconsin Department of Transportation (WisDOT) is in the process of developing plans for a proposed project located on Interstate 94 (IH 94) at the US Highway 12 (USH 12) interchange in the Town of Hudson in St. Croix County (see attached project location map). The project will consist of:

- Reconstructing the IH 94/USH 12 interchange,
- Reconstructing USH 12 from IH 94 north to the Rodeo Circle/Brakke Drive intersection, and
- Reconstructing County Highway U from IH 94 south to the County Highway U/County Highway N intersection.

On July 1, 2014, a public information meeting was held to familiarize interested parties with the project. In the near future, environmental studies will be conducted to enable WisDOT to assess the project's effect upon the environment and to identify the resources located in the project area. Studies will include archaeological surveys and historic building surveys, contaminated material investigations, soil testing and right-of-way surveys. Information obtained from these studies will assist engineers in design to avoid or minimize the proposed project's effect upon environmental resources.

We would appreciate receiving any information you may have regarding historic buildings and structures or other environmental issues located in the project area. For your reference, a map illustrating the area of potential effects (APE) is enclosed. If you have information to share or would like additional information regarding this proposed project, please contact WisDOT Project Manager James Koenig at James.Koenig@dot.wi.gov or (715) 838-8391.

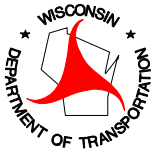
Sincerely,

A handwritten signature in black ink, appearing to read 'James Koenig'.

James Koenig
NW Region Systems Planning Supervisor

CC: Nick Schaff, WisDOT Northwest Region Environmental Coordinator
Rebecca Burkel, WisDOT Bureau of Technical Services

Attachments: Project Location Map
Area of Potential Effect (APE) Map



**Division of Transportation
Systems Development**
Northwest Region – Eau Claire Office
718 W. Clairemont Ave.
Eau Claire, WI 54701-5108

Scott Walker, Governor
Mark Gottlieb, P.E., Secretary
Internet: www.dot.wisconsin.gov

Telephone: 715-836-2891
Toll Free: 800-991-5285
Facsimile (FAX): 715-836-2807
E-mail: eauclaire.dtd@dot.state.wi.us

8/12/2014

Bad River Band of Lake Superior Chippewa Indians of Wisconsin
Attn: Edith Leoso, THPO
P.O. Box 39
Odanah, WI 54861

Re: Notice of federal undertaking and request for comments under 36 CFR 800

I am writing to you in regards to the following project:
WisDOT ID 1020-00-06, Interstate 94/US Highway 12 Interchange, St. Croix County

The Wisconsin Department of Transportation (WisDOT), in cooperation with the Federal Highway Administration (FHWA), is considering an undertaking located on Interstate 94 (IH 94) at the US Highway 12 (USH 12) interchange in the Town of Hudson in St. Croix County (see attached project location map). The proposed undertaking will consist of:

- Reconstructing the IH 94/USH 12 interchange,
- Reconstructing USH 12 from IH 94 north to the Rodeo Circle/Brakke Drive intersection, and
- Reconstructing County Highway U from IH 94 south to the County Highway U/County Highway N intersection.

Your tribe has requested to be notified of undertakings in this area of Wisconsin. Attached is information regarding the proposed undertaking to assist in consultation on the scope of identification efforts, which includes the determination and documentation of the area of potential effects (APE).

WisDOT would be pleased to receive any comments your tribe wishes to share regarding this undertaking, the determination of the APE, and any potential impacts to historic properties and/or burials. Environmental studies may be conducted for this undertaking such as, archaeological site identification survey, architecture/history survey, endangered species survey, contaminated material investigations, soil testing and right-of-way surveys. Results of these studies and comments provided by you will assist the engineers in the design to avoid, minimize, or mitigate effects upon cultural and natural resources. To ensure your comments are considered during this early phase of project development, WisDOT requests a response within 30 days of receipt of this letter.

If your tribe wishes to become a consulting party under Section 106 of the National Historic Preservation Act or would like to receive additional information regarding this undertaking, please contact WisDOT Project Manager James Koenig at James.Koenig@dot.wi.gov or (715) 838-8391.

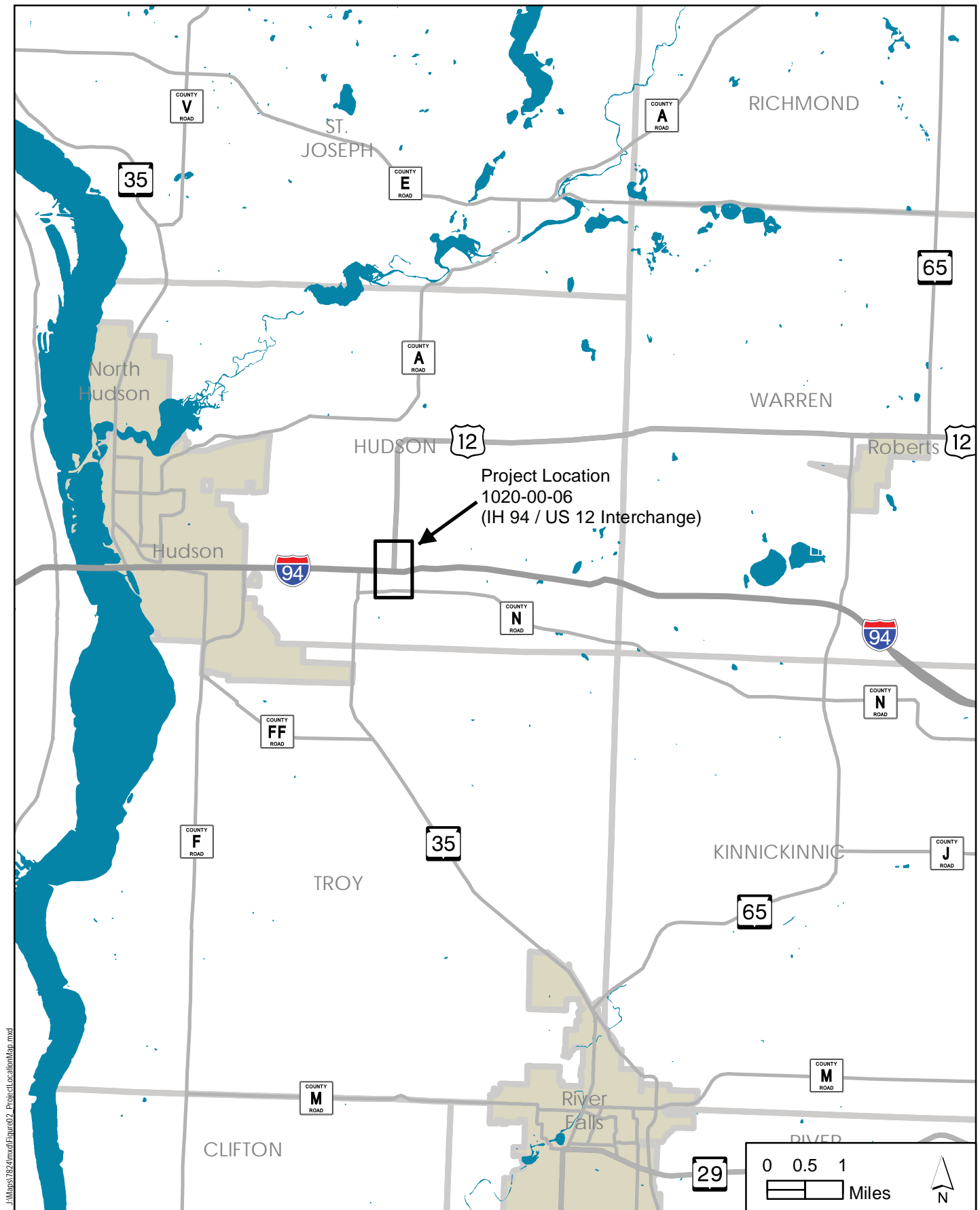
Sincerely,

A handwritten signature in black ink, appearing to read 'James Koenig'.

James Koenig
NW Region Systems Planning Supervisor

CC: Nick Schaff, WisDOT Northwest Region Environmental Coordinator
Rebecca Burkel, WisDOT Bureau of Technical Services

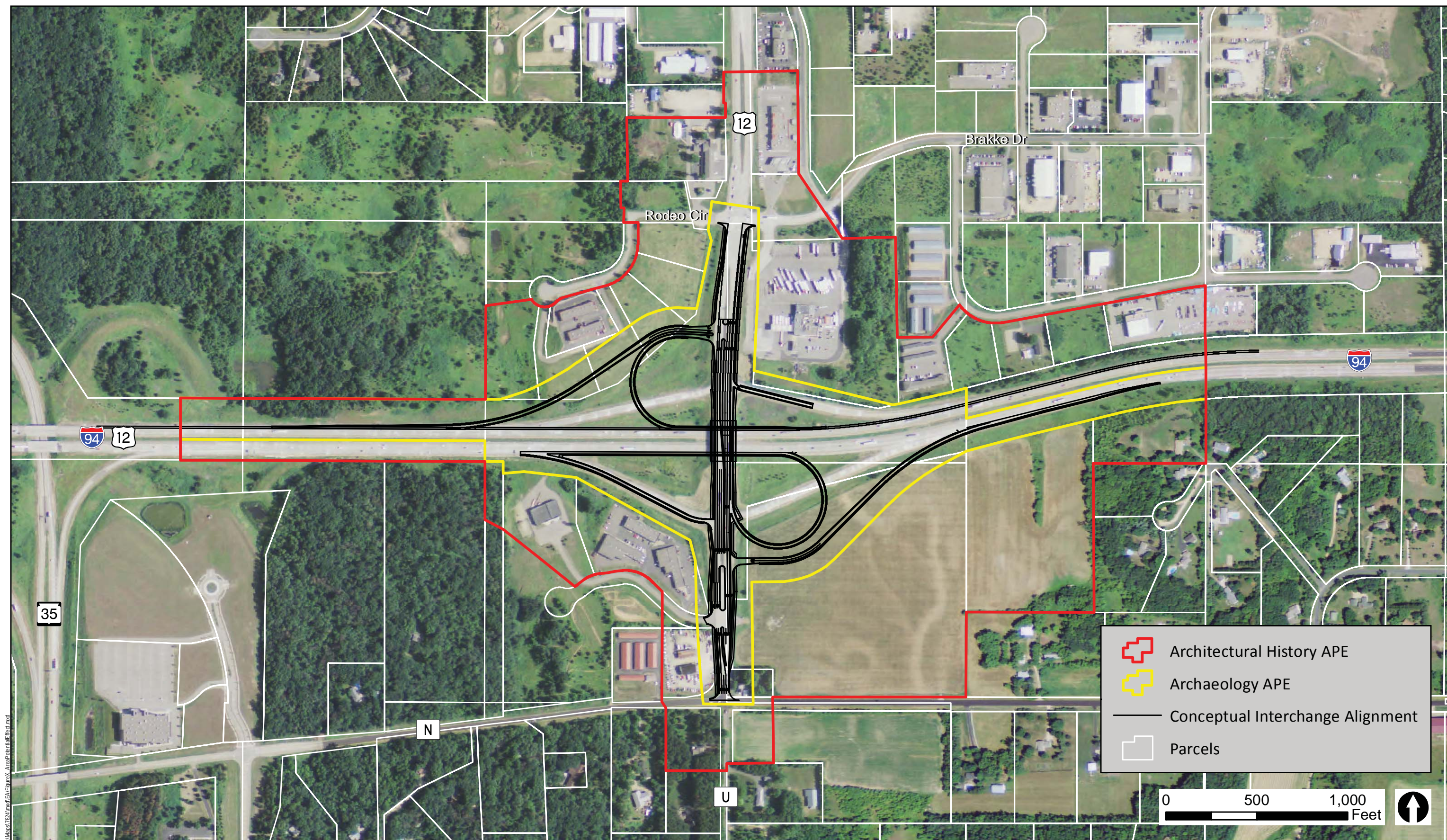
Attachments: Project Location Map
Area of Potential Effect (APE) Map



Project Location Map

IH 94 Hudson Area Interchange Study (Project ID 1020-00-06)
 Wisconsin Department of Transportation
 St. Croix County, Wisconsin

Figure 1



Area of Potential Effect (Archaeology and Architectural History)

I-94 Hudson Area Interchange Study, IH 94 / USH 12 Interchange

10 1020-00-06

Figure 2



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September 12, 2014

Mr. Brett Danner
SRF Consulting Group, Inc.
One Carlson Parkway North
Suite 150
Minneapolis, MN 55447-4443

Subject: Historical and Archaeological Survey Letter Report for Amendment #1 for the Interstate-94/US Highway 12 Interchange, Hudson Corridor Planning/Feasibility Study, WisDOT Project ID: 1020-00-06, Hudson Township, St. Croix County, Wisconsin. AECOM Project 60278466, Task 4.

Dear Mr. Danner:

SRF Consulting Group, Inc. (SRF) retained AECOM Technical Services, Inc. (AECOM) for cultural resources surveys and studies for the I-94/US Highway 12 (I-94/USH 12) interchange portion of the Hudson Corridor Planning/Feasibility Study (the Project). The cultural resources surveys/studies included both an architecture/history study of the delineated Architecture/History Area of Potential Effects (APE) and an archaeological study of the delineated Archaeology APE for the I-94/USH 12 interchange portion of the Project. This work was completed for compliance with the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA) under the guidelines issued by the Wisconsin Department of Transportation (WisDOT) and the Wisconsin State Historic Preservation Office (SHPO). AECOM staff, which meet the US Secretary of Interior's *Professional Qualifications Standards* (36 CFR Part 61) in Architectural History and Archaeology, provided the contracted services to identify cultural resources within these APEs. This letter report documents the methodologies and results of these studies.

Project Description and Areas of Potential Effects

Among other Project plans, improvements are planned for the existing I-94/USH 12 interchange. Prior to this study, AECOM prepared a cultural resources predictive model for the potential for both archaeological and built resources (historical/architectural) for the overall Project. This model was updated in August 2014 to include locations previously surveyed by Dudzik (1992) and Karstens (1993). The updated predictive model is shown in **Figure 1**.

During Spring 2014, the WisDOT delineated the APEs for direct and indirect effects at the I-94/USH 12 interchange. The APEs are located in Sections 27, 28, 33, and 34 in Township 29 North, Range 19 West. The APE for direct effects consists of the following:

- The existing USH 12 corridor from the intersection of County Roads (CRs) N and U to the south and Brakke Drive/Rodeo Drive to the north (approx. 0.47 miles total), and

- Approximately 0.47 miles to the east and approximately 0.47 miles to the west of the USH 12 intersection along I-94.

The APE for indirect effects is comprised of the above-listed limits of disturbance for direct effects and the first tier of adjacent land parcels. Both APEs are shown in **Figure 2**.

Historic Contexts

It is generally accepted that the New World began to be populated anywhere from 10,000 years before present (B.P.) to 15,000 years B.P. Popular opinion is that humans slowly migrated south from the area we now know as Alaska and diffused into North and South America. The following information specific to Wisconsin is generally known by archaeologists of the Upper Midwest.¹

Site-specific information was reported previously for the Project by Ollendorf (2012). In short, there are no previously recorded archaeological sites, historic standing structures, or cemeteries in or close to the APEs, according to the Archaeological Site Inventory (ASI) and Architecture/History Inventory (AHI) at the SHPO's Wisconsin Historic Preservation Database (WHPD).

Paleoindian (10,000-7,000 B.C.)²

The earliest confirmed human occupation of the Great Lakes region occurred toward the end of the Pleistocene Epoch. The earliest people to populate the area known as Wisconsin belong to the Paleoindian Tradition, and evidence of the early Paleoindian occupation of Wisconsin is largely derived from material recovered from surface contexts (Overstreet et al. 1991). These people were nomadic big-game hunters who lived in small, highly mobile hunting and gathering societies; their material culture provides archaeologists with discernible patterns reflecting social and technological complexes adapted to life on the taiga and tundra landscape. Within northwestern Wisconsin lies evidence of several distinct technological complexes, including but not limited to the Clovis, Folsom, Scottsbluff, and Eden projectile point types (Mason 1986). The subsistence economy of the Paleoindian people centered on the exploitation of large herd animals such as mammoth, barren ground caribou, bison, and musk ox.

Archaic (7,000-1,000 B.C.)

Following the earliest inhabitants in this region, people with different social and technological complexes began to coexist with Paleoindians and eventually replaced the Paleoindian groups, heralding the dawn of the Archaic Period. This period has been divided into three stages: Early (7,000-5,000 B.C.), Middle (5,000-2,000 B.C.), and Late (2,000-1,000 B.C.). From a cultural perspective, the Early Archaic is best characterized as a time of transition during which vestiges of

¹ Unless cited otherwise, much of this information was obtained from compilations by the Mississippi Valley Archaeology Center and available at <http://www.uwlax.edu/mvac/>

² B.C. is a widely used abbreviation for "Before Christ."

the late Paleoindian period persisted into the emerging Archaic cultural pattern. Toward the end of the Pleistocene the climate began to moderate, resulting in significant changes in the composition of local plant and animal communities. Nomadic hunting remained the primary subsistence activity; however, the dynamic Holocene environment offered opportunities for the exploitation of new local resources. The Early Archaic is rare in Wisconsin (Stoltman 1997).

The Middle Archaic roughly coincides with the Altithermal, a climatic event lasting from about 4,500 B.C. to approximately 2,000 B.C. in Wisconsin, during which time the average annual temperature was higher and precipitation was lower than today. The deciduous forests were pushed further north and east by the advance of xeric grasslands. Subsistence still centered on hunting; however, groundstone tools (e.g., axes, grinding slabs, and nutting stones) appear in the artifact assemblage. Chipped-stone tools became more diverse but less formalized with an abandonment of the complex reduction strategies of earlier times. Medium-sized side- and corner-notched projectile points become common.

Much of the information available for the State for the Middle Archaic is derived from stratified rockshelter deposits in south-central Wisconsin. The Altithermal peaked toward the end of the Middle Archaic, after which the climate began to stabilize, becoming more like the present day climate. As this happened, the Archaic people became increasingly sedentary in their lifestyle. They followed the seasonal cycles, knew prime locations of desirable resources, and at peak harvesting periods, they moved between the different resource areas, re-occupying previous seasonal base camps or establishing new ones. In some areas of the Upper Midwest, this increase in localization of activity provided opportunities for occasional experiments in garden horticulture and plant domestication, which would become more intensified during the later Woodland period.

Distinctive cultural traditions began to emerge during the Late Archaic. The “Old Copper Culture,” which featured a traditional Archaic tool kit supplemented with implements manufactured from native Great Lakes copper, flourished in the Upper Great Lakes region from ~ 3,000 B.C. to ~ 1,000 B.C. “Old Copper” complex burials are frequently accompanied by highly valued copper tools. The “Glacial Kame” and “Red Ocher” cultures were contemporaneous manifestations whose respective burial complexes, in addition to the occasional presence of copper grave goods, included interment in pronounced glacial landforms and the practice of covering the deceased in powdered ocher (iron oxide).

Woodland (1,000 B.C. – A.D. 1600)³

Throughout the Upper Midwest the Woodland Period is subdivided into three stages based on the degree of technological, economic, and socio-cultural development: Early (1,000-300 B.C.), Middle (300 B.C.-A.D. 400), and Late (A.D. 400-1600). Some attempts have been made to link the Eastern

³ A.D. is a widely used abbreviation for “Anno Domini,” which is Latin for “in the year of our Lord.”

Dakota to a Woodland type of culture (Wisconsin State Historical Society 1986), but the correlations to date have not been irrefutably confirmed.

The advent of the Woodland period is typically associated with the introduction of ceramic technology and monumental burials. In Wisconsin, ceramic technology appeared and took hold at different times across the State, first in the south then in the north. At first these were only embellishments to existing patterns and did not cause a radical shift in the Archaic lifestyle. In fact, little changed – people continued to hunt and forage as they had before, using traditional tools that included stemmed and corner-notched spear and dart points. Pottery of the Early Woodland is characteristically thick-walled and conoidal in shape with cord markings and/or incised lines on the interior and exterior surfaces.

As the Woodland period progressed, cultural regionalization became much more evident. Groups began to aggregate in specific environmental zones where distinctive local ceramic and lithic traditions, settlement patterns, and subsistence economies began to emerge. Regionalization resulted in greater restrictions on resource availability that is believed to have stimulated an incipient trade economy that was responsible for the transmission of goods and ideas over great distances in the Middle Woodland.

At the center of the Middle Woodland cultural florescence were the Hopewell people, whose influences extended along the major Midwestern river valleys to geographically marginal areas where they were either assimilated or rejected by local populations. Middle Woodland ceramics are sub-conoidal in shape and typically exhibit cord-roughened exterior surfaces. Hopewellian influences are often expressed in the form of complex decoration consisting of zoned patterns of incised lines and punctuates.

The introduction of bow and arrow technology is generally regarded as a principal horizon marker for the beginning of the Late Woodland period in the Upper Midwest and Great Lakes region. An expanding population is evident at this time with the appearance of large, semi-permanent villages and by an increased reliance on plant resources and horticulture in general. New ceramic traditions consisting of globular and semi-globular vessels with sharply everted, castellated or collared rims supersede the semi-conoidal forms of the Middle Woodland. Socio-political organization and resource abundance during the Late Woodland in Minnesota, Wisconsin, Iowa, and Illinois is suggested by the appearance of the Effigy Mound Culture, whose unique mortuary complexes consisted of large bluff-top and river terrace cemeteries composed of conical, linear, and animal-shaped burial mounds.

Mississippian/Oneota (A.D. 1000-1650)

The Mississippian and Oneota traditions are the first full-scale farmers in Wisconsin, over 500 years before the arrival of the first Europeans. By A.D. 1000 the Mississippian culture, a tradition with ties to the southern Mississippi River Valley and even central Mexico across the Gulf, began to exert its influences upon local Woodland groups from major centers located along the Mississippi River, of

which Cahokia in southern Illinois is considered by many to be the premier site. The Mississippian period is divided into two generalized traditions – Middle and Upper Mississippian – based on geographical location and degree of acceptance of Mississippian culture.

The Middle Mississippian tradition developed around an agriculture-intensive economy that relied on maize, beans, squash, sunflowers, and tobacco as its principal crops. Mississippian people lived in large planned, permanent communities with ceremonial centers, often with defensive palisade walls. The waterways served as trade routes between the large central sites and the smaller satellite settlements. With the increased wealth of agricultural surplus came labor specialization and social stratification. Many Woodland groups living in marginal areas were unable or refused to adopt the Mississippian culture in its entirety. The Upper Mississippian or Oneota people probably developed from a hybrid of Late Woodland/Mississippian.

Oneota is considered a version of Mississippian local to Wisconsin (i.e., north of Cahokia). Both traditions had large villages involved in farming. However, the pottery of the Oneota is different from that made by the Mississippians and fewer exotic goods are found at Oneota sites than at Mississippian sites. Although Oneota people were dependent on maize agriculture, hunting of elk, deer, and small game remained of vital importance to them as were fishing and clamming. Bone tools became more diverse and abundant; the scapula hoe is one of the hallmarks of the Mississippian tool complex as well as small notched and unnotched triangular arrow points. Mississippian and Oneota pots are typically tempered with crushed shell and are large and globular in shape with thin, hard-fired walls. The rims tend to flare outward and have handles for attaching suspension cordage; decoration occurs over the shoulder, lip, and inside of the rim and consists of trailed or incised lines that form curvilinear or geometric patterns over a smoothed surface.

Historic American Indian (A.D. 1650 – present)

Archaeologists of the Upper Great Lakes region have divided the Historic Period into two temporal categories for convenience: Early Historic (1670-1760) and Late Historic (1760-1820). At the time of European contact, the large Mississippian centers to the south had dissolved and were replaced by smaller dispersed villages. Ultimately some of the pre-contact populations discussed above evolved into or were replaced by groups known historically and in modern times as the Fox, Kickapoo, Menominee, Ojibwe (Chippewa), Sac (Sauk), Miami, Potawatomi, and Winnebago (Ho-Chunk). These tribes have a long and varied history which can be addressed through material remains, ethnographic and historical accounts, and traditional information shared by elders of the present-day communities.

American Indian residents of Wisconsin during the Historic Period can be placed in two general categories – those thought to be indigenous to the area at the time of contact and those arriving in Wisconsin sometime after ~ A.D. 1640 (Goldstein 1987). For instance, the Kickapoo and Winnebago are among the tribes indigenous to Wisconsin. What became the State of Wisconsin began as part of the Territory of Michigan. This area had been British territory and was ceded to the United States in 1783, although the American Indians of the area had not ceded their homelands. The American

Indians who resided in the Territory of Michigan before American settlement were the Ottawa, Potawatomi, Ojibwe, and Wyandot. Some of these groups moved into Wisconsin as a result of direct or indirect effects of pressures elsewhere in the Territory of Michigan. Treaties ceding their homelands in the Territory of Michigan were signed between 1795 (the Treaty of Greenville) and 1842 (the Treaty of La Pointe). Other notable treaties were Governor Hull's treaty of 1808, the Treaty of Saginaw in 1819, the two Treaties of Chicago (1821, 1833), the Carey Mission in 1828, and the Treaty of Washington in 1836 and a later treaty of January 4, 1837.

The Ojibwe is the historic American Indian group that certainly utilized the APE after their arrival in the Upper Midwest from the East (Wisconsin State Historical Society 1985) and prior to their forcible displacement onto reservations by the US Government. The Native American Consultation Database (NACD) maintained by the National Park Service (NPS) lists 13 present-day federally recognized Ojibwe bands belonging to the Lake Superior Tribe of Chippewa Indians or the Minnesota Chippewa Tribe on reservations in Wisconsin, Michigan, and Minnesota with historical interests in the APEs.⁴ It should be noted that five different Dakota tribes or communities also are listed in the NACD with historical interests in St. Croix County.⁵

In the eastern woodlands, deer remained a staple commodity while fish, shellfish, waterfowl, small game, and wild rice were important supplements. The westward spread of European trade goods and the fur trade had a substantial impact on traditional subsistence and settlement patterns. Hunting and trapping for pelts and the production of maple syrup were intensified as local groups entered into the wider trade economy.

Euro-American (A.D. 1640-present)

European contact with American Indians in Wisconsin can be traced to the 17th century when French explorers and Jesuit priests began making their first journeys to the region. The French entered the region early, and, except for the European diseases they inflicted on vulnerable American Indian populations, the physical impact of their presence was minimal (e.g., missions, trading posts, and military garrisons, often in the same location). When the British took control of Upper Canada from the French in 1760, their major settlements (e.g., Detroit, Michilimackinac, and Green Bay) remained focused on the fur trade, which they are credited with decentralizing during the period 1763-1815 (Maas 1998a). In the 1780s, the US took control of primary Wisconsin sites of the British fur trade, including Green Bay, but the British did not officially surrender the Upper Great Lakes region to the United States until the aftermath of the War of 1812 (Maas 1998a).

⁴ *Wisconsin* - Bad River Band, Lac du Flambeau Band, Red Cliff Band, Sokaogon Chippewa Community, and St. Croix Chippewa Indians of Wisconsin. *Michigan* - Keweenaw Bay Indian Community and Lac Courte Oreilles Lac Vieux Desert Band. *Minnesota* - Bois Forte Band (Nett Lake); Fond du Lac Band; Grand Portage Band; Leech Lake Band; Mille Lacs Band; White Earth Band.

⁵ They are the Flandreau Santee Sioux Tribe, South Dakota; Lower Sioux Indian Community, Minnesota; Prairie Island Indian Community, Minnesota; Santee Sioux Nation, Nebraska; and Upper Sioux Community, Minnesota.

The region was part of a series of US federal territories prior to the establishment of the State of Wisconsin in 1848 – Northwest Territory (1796-1803), Indiana Territory (1803-1805), Michigan Territory (1805-1837), and Wisconsin Territory (1837-1848). The completion of the Erie Canal in 1825 allowed improved access to the Upper Great Lakes for settlers coming from the east to Milwaukee, Chicago, and Green Bay.

The US officially prohibited foreign trade with American Indians during the period 1815-1850 (Maas 1998a); however, the Wisconsin fur trade continued. British fur traders continued to operate their ventures in the region until the 1830s. The American Fur Company established trading posts throughout the western Great Lakes to exclude the rival British traders. However, the Great Lakes fur trade declined in the 1830s-1850s, because beaver populations were depleted, and American Indians were ceding lands and were being removed to reservations. With this decline the American Fur Company shifted to greater reliance on commercial fishing and land speculation than on the fur trade. Around 1840, the American Fur Company formally ceased operation in the Lake Superior basin and by 1850 the Wisconsin fur trade essentially had ended.

In the 1820s, residents of the eastern and southern US looked westward for new land and economic opportunities. Southerners arrived by boat up the Mississippi River from Missouri, Tennessee, Kentucky, Virginia, and the Carolinas, whereas Americans of British heritage came from New York or New England via the Erie Canal and the Great Lakes (Janes 1998). In the 1840s immigrants from German-speaking parts of Europe began arriving in Wisconsin in large numbers; in fact in the last half of the 19th century, more Germans arrived in the State than any other foreign immigrant group (Gallagher 1998). The earliest and most numerous Scandinavian immigrants to Wisconsin were Norwegians, whose first settlements were built in 1838, and, by the 1850s large Norwegian communities had been established (Maas 1998b). Danish and Swedish immigration began in the 1840s, but Icelanders and Finns did not arrive in Wisconsin until the 1870s and 1880s, respectively (Maas 1998b). From the 1840s to the 1920s, Europeans settled in large numbers in Wisconsin, and by 1900, approximately 40 countries were represented by Wisconsin's populace (Crews-Nelson 1998).

St. Croix Valley

The first European American arrivals in the St. Croix Valley were fur traders and explorers. In 1793, a trading post was established along the Saint Croix River by Laurent Barth, Jacques Portier, and Charles Reaume. The site of Hudson on the St. Croix River was originally a trading post of the American Fur Company (Johnson 1921). Trade with the Indians continued for many years, dropping off in 1834 after mining and agriculture interests developed after the Black Hawk War (Johnson 1921). The establishment of a lumber mill at St. Croix Falls in 1837 brought several pioneers and speculators to the St. Croix Valley (Johnson 1921). The St. Louis Lumber Company developed a mill to exploit the abundant pine forests in the area. The St. Croix River had steamboat service beginning in 1839, primarily for the transportation of pine logs and lumber. Early settlement was centered along the riverfront where trading and milling communities were established.

St. Croix County was established as part of the Northwest Territory prior to Wisconsin becoming a state, and once included most of northwestern Wisconsin and northeastern Minnesota. Wisconsin Territory created St. Croix County in 1840, and the towns of Stillwater and Saint Paul (now in Minnesota) were established as election precincts for the County in 1846 until territorial boundaries changed again with Wisconsin's statehood in 1848. At this time, the County's western boundary became the St. Croix River to the west. Buena Vista, the site of the dam and saw mill at the Willow River, was named the new county seat in 1849, then subsequently changed to Willow River, and finally to Hudson in 1852. In the 1840s, there had been an influx of settlers to the community, and a store, post office, hotel, and several permanent frame houses were built. In 1849, a US Land Office was established in Hudson, spurring rapid population growth in the county, increasing from 248 in 1840 to almost 3,000 in 1854, with the majority of people living in Hudson (Johnson 1921). The transient European American population came primarily from New England, New York, and Pennsylvania, with few settlers from Virginia and the south. Immigrants were predominantly Irish, then Germanic and Scandinavian in the latter part of the 19th century (Johnson 1921).

Agriculture was not widely practiced in the area until the 1840s. When the US Land Office opened in 1849, there were 20 families in the area and 50 acres of land under cultivation (Johnson 1921). The first farmers in St. Croix County were Joseph Haskell, Joel Foster, Walter Mapes, and James Walston. Land office claims entries exponentially increased through the 1850s, from 16 entries in 1849 to 2,440 entries in 1856 (Johnson 1921). The St. Croix Agricultural Society was organized in 1857, and eventually agriculture became the primary industry in the county. By 1870, there were 101,000 acres under cultivation, with wheat the principal crop on prairie lands (Johnson 1921).

In the 1870s, railroads connected the farmlands with the main lines of Chicago, Milwaukee, St. Paul and Omaha Railway and the Wisconsin Central, assisting the transportation of crops to larger markets. Wheat in Wisconsin declined after the 1880 due to growing competition from western states, which led to agricultural diversification, including more production of feed crops, vegetables, and dairying (Wisconsin State Historical Society 1986). The dairying industry was widely promoted throughout Wisconsin in the 19th century (Wisconsin State Historical Society 1986). By the end of the 19th century, dairying increased, with seven cheese factories and 14 creameries in the county by 1895 (Zarling 2005).

By 1876, a county map showed two buildings in the APE along a road (now County Road U): in the SE $\frac{1}{4}$ of Section 28 listed under J.G. Thompson and in the NE $\frac{1}{4}$ of Section 33, listed under A.M. Tyler (Briggs 1876). Thompson's property is also the only place of note in the southern portion of Hudson Township indicated in Snyder, Van Vechten & Co. (1878).

Thompson retained ownership through the end of the 19th century, and the lot remained intact as it changed ownership in the early 20th century to the Dowling Brothers by 1914 (Pinkney & Brown 1897; Anderson Publishing Company 1914); to W.H. Schofield by 1922 (St. Croix County Abstract Co. 1922); to H.H. Bigelow by 1929 (St. Croix County Abstract Co. 1929); part of Quality Park Farms by 1938 (Hudson Star-Observer 1938); Hanson Hereford Farms (John and Ruth Hanson) by 1959

(Thomas O. Nelson Co. 1959; Rockford Map Publishers 1961); and eventually being subdivided and sold to corporate ventures in the late 20th century.

Tyler's property was located at the juncture of major county roads through the area, and the original building on the lot was removed by 1947 (HistoricAerials.com 2011). The 1914 *Map of Hudson Township* shows a new building located in the APE, opposite Tyler's original lot, in the NW¼ of Section 34 at the intersection of the county roads (Anderson Publishing Company 1914). The property is listed under Frank Baker, and the building is listed as a cheese factory. These three properties remained the only locations of permanent development in the APE until the mid-20th century, after which parcels were divided and more owners moved into the area. At the time of the dedication of I-94 in 1959, the primary developments in the APE appear to have been associated with agriculture.

St. Croix County had established transportation networks via the river and railroads, but as in the rest of Wisconsin and the nation, the advent of the automobile indelibly changed the transportation infrastructure. The original country roads most likely had been crude wagon trails or built of insubstantial materials, due to the prohibition of state appropriations or loans for transportation and internal improvement projects (Wisconsin State Historical Society 1986).

Advocacy for better roads began in the 1890s under the Good Roads Movement, and a public roads law was finally passed in 1911. Federal assistance for the development of highway systems began in 1916, and roadways were revolutionized during the early 20th century (Wisconsin State Historical Society 1986). These acts most likely led to the improvement of CRs U and N in the APE, but the agricultural settlement pattern of the vicinity remained sparse until the construction of I-94. The 1956 Federal Aid Highway Act mandated construction of a \$29.4 million, 41-mile-long, four-lane interstate highway from Hudson to Menomonie.

With the opening of I-94 in 1959, new development appeared at the I-94/USH 12 interchange in the APE. A gas station, automotive garage, motel, and housing developments were established within easy access of the major highway. With this access, more commercial enterprises have been established into the 21st century.

Methodology

For these studies, AECOM conducted supplementary archival research and reconnaissance field surveys of the APEs to identify historic properties, if any, that could be impacted by improvements to the I-91/USH 12 interchange. AECOM's methodology is detailed below.

Previously in 2012, AECOM prepared a predictive model for the presence of cultural resources within the Project vicinity (Ollendorf 2012). Research conducted for that effort included review of the ASI, AHL, and Bibliography of Archaeological Reports (BAR) in the WHPD on October 15-16, 2012. Background research also included review of other information and available maps. To update these results from the intervening two years, AECOM revisited the ASI, AHL, and BAR on August 14, 2014.

The predictive model updated subsequently for the I-94/USH 12 interchange APEs is shown in **Figure 1**. No previously recorded archaeological or architecture/history resources are present in the APEs.

The architecture/history reconnaissance survey was conducted by Dr. Amy Ollendorf (Principal Investigator) accompanied by AECOM staff member Mr. Benjamin Klaus on August 27, 2014, in conjunction with the archaeological pedestrian survey. The updated predictive model indicated only two locations not previously surveyed by archaeologists. The larger of the two areas (approximately 3.5 acres) is located in the NW¼- NW¼ of Section 34, and the smaller area (approximately 0.4 acres) is in the SE¼-SW¼ of Section 28 at the westernmost end of the APE (**Figure 1**). Review of historic maps and aerial photographs revealed the potential for built-environment resources that were at least 40 years old on 13 different parcels within the APEs (**Figure 2, Table 1**).

The archaeological pedestrian survey was completed systematically along roughly parallel transects spaced 5 meters apart throughout the agricultural field in Section 34. Weather conditions were sunny and cloudless skies with a light breeze and temperatures in the low 70s (degrees Fahrenheit). Ground conditions were slightly damp from overnight dew. Ground-surface visibility ranged 0-100%, with the overall average about 60% in the harvested/fallow field. A Trimble Global Positioning System (GPS) was utilized to keep the field crew within the APE's boundaries and to record archaeological finds, if any. Systematic survey was not conducted in the small area in Section 28, because the extremely steep slopes down from the I-94 corridor into a channelized and ripped ravine within the right-of-way (ROW) negated the probability of intact and significant archaeological materials.

Table 1. Built-Environment Resources within the APE

No. on Figure 2	Address	Parcel No.	Over 40 years (since 1974)?	Alterations?
1	604 County Road N	020-1102-20-000	Yes	Yes
2	704 Baker Lane	020-1075-75-025	No	--
3	637 Commerce Drive	020-1363-08-010	No	--
4	631 Commerce Drive	020-1075-80-000	No	--
5	625 Commerce Drive	020-1363-04-000	No	--
6	601 Brakke Drive	020-1075-50-000	Yes	Yes
7	606 Brakke Drive	020-1075-35-105	No	--
8	736 Rodeo Drive	020-1384-01-000	Yes	Yes
9	732 Rodeo Drive	020-1079-40-175	No	--
10	707-709 Rodeo Circle	020-1443-05-000	No	--
11	588 Outpost Circle	020-1094-70-000	No	--
12	592-596 Outpost Circle	020-1094-70-100	No	--
13	680 County Road U	020-1094-80-000	Yes	Yes

Ollendorf and Klaus also visited, observed, and documented the 13 parcels with the potential for historic standing structures. Field notes were made and digital photographs were taken. The information from the reconnaissance survey was reviewed by Ms. M.K. (Trina) Meiser, M.A.

(Architectural Historian). Based on the field notes, survey photographs, historic maps and aerial photos, St. Croix County Tax Assessor's Office records, and historical literature pertaining to Hudson, Ms. Meiser confirmed built-environment resources that are at least 40 years old, and she also assessed their integrity and potential for eligibility to the National Register of Historic Places (NRHP).

Results

Archaeological Survey

As mentioned above, systematic survey was not conducted in the small area in Section 28 because of the extremely steep slopes into a channelized and riprapped ravine within the ROW.

No archaeological features were observed in the larger area in the southeast quadrant of the I-94/USH 12 interchange (Section 34), although two isolated finds of undecorated whiteware fragments were found (**Figure 2**). These were labeled FS-1 and FS-2 (**Figure 3** and **Figure 4**, respectively). On September 2, 2014, Dr. Ollendorf completed a Wisconsin ASI Form for each findspot and submitted them electronically with photographs and maps to Wisconsin's Office of the State Archaeologist (OSA). On September 3, 2014, Ms. Amy Rosebrough, Staff Archaeologist at the OSA, replied that "neither find needs an official site number." No further archaeological materials were observed throughout this survey area.

Architecture/Historical Survey

Of the 13 parcels visited during this reconnaissance survey, only four contain buildings that are at least 40 years old (**Table 1**). The four parcels are identified on **Figure 2** by numbers 1, 6, 8, and 13. The remaining parcels have buildings that are younger than 40 years and do not demonstrate exceptional historical or architectural features that would make them significant as resources less than 50 years old under NRHP Criteria Consideration G. Therefore, they are not discussed further in this report, and only the buildings at least 40 years old are described below.

604 County Road N (#1 on Figure 2)

This resource includes a single-family residence and auxiliary buildings located at the northeast corner of the intersection of CRs U and N at the southernmost end of the APE. In the 1914 Atlas of St. Croix County, a building is located on this site, owned by Frank Baker, and labeled "cheese factory." The Baker Family owned the property through the 1970s, after the construction of I-94 in the late 1950s. Although it is undetermined whether the existing buildings are part of the 1914 "cheese factory," the main residence and the adjacent auxiliary building (**Figure 5**) appear on the 1947 aerial map of the area. However, there have been extensive alterations to the main building, including additions on the east and west walls and a second story addition, and changes to fenestration and exterior siding. The resource may have associations with early 20th century agriculture, specifically

dairy farming, but the current condition of the building does not convey any historical associations. This resource does not appear to have sufficient integrity for potential NRHP eligibility.



Figure 5. 604 CR N, view facing northeast.

601 Brakke Drive (#6 on Figure 2)

The Hudson Travel Center (**Figure 6**), a TA Truck Service Station, is a truck stop/gas station located in the northeast quadrant of the I-94/USH 12 interchange. According to the owner, the station dates to 1968. Although it is over 40 years old, it is not yet 50 years' age and it does not demonstrate any exceptional features that suggest it would meet the NRHP criteria of significance. Built after the construction of I-94 and undoubtedly situated to serve highway travelers, the station has had several alterations including additions and renovations. Its associations are tied to transportation and the advent of the interstate in 1959. This resource does not appear to have sufficient integrity for potential NRHP eligibility.



Figure 6. 601 Brakke Drive, view facing northeast.

736 Rodeo Drive (#8 on Figure 2)

This resource (**Figure 7**), currently Uncle Mike's "M-Pour-E-Yum" and Regency Inn, is an amalgamation of a bar, lounge, restaurant, and motel. In 1947, a smaller building with a cross-gabled plan was located at the north end of the current building site. A loose cornerstone on-site reads "Hudson Lodge No. 640, B.P.O.E., 1932." Although this suggests an association with the Benevolent and Protective Order of Elks Hudson Lodge, which operated from 1901 to 1995, there does not appear to be a physical connection to the existing building.

By 1966, after construction of I-94 in 1959, the motel portion of the building was constructed on the site, to the south of the smaller building. By 1977, the cross-gabled portion of the building was constructed. Further additions have since been added to the north and west sides of the building. Whether or not the original building that was on-site in 1947 was somehow incorporated into the existing building, the current condition of the building does not convey any historical or architectural associations. The resource does not appear to have sufficient integrity for potential NRHP eligibility.



Figure 7. 736 Rodeo Drive, view facing southwest.

680 County Road U (#13 on Figure 2)

This parcel contains two storage buildings, a concrete garage and a wood garage, in operation for Midwest Motorworks (**Figure 8**). Built at an unknown date between 1953 and 1966, the concrete garage is a large, utilitarian structure with concrete block walls and a half-barrel roof which most likely dates to after construction of I-94 in the late 1950s. It has had some alteration in its windows and its doors, but otherwise appears in its original condition.

To the north of the concrete garage, there is a wood garage or warehouse (see **Figure 8**, at right). This structure was built after 1966 but before 1977. Although both structures are or may be over 40 years old, and their conditions are relatively original, neither building demonstrates particular features that convey historical or architectural associations. These buildings are utilitarian, and do not appear to have any potential for NRHP eligibility under criteria A-D, or under Criteria Consideration G in the case of the wood structure.



Figure 8. 680 County Road U, view facing west.

Summary and Conclusions

Neither archaeological findspot qualifies as an archaeological site and neither is eligible for the NRHP. Furthermore, all of the historic standing structures have been significantly altered and/or do not possess adequate historical or architectural features to be potentially eligible for the NRHP. Therefore, AECOM recommends a finding of “No Historic Properties Affected” in the APEs and no further work for archaeology and architecture/history should be required for the improvements to the I-94/USH 12 interchange.

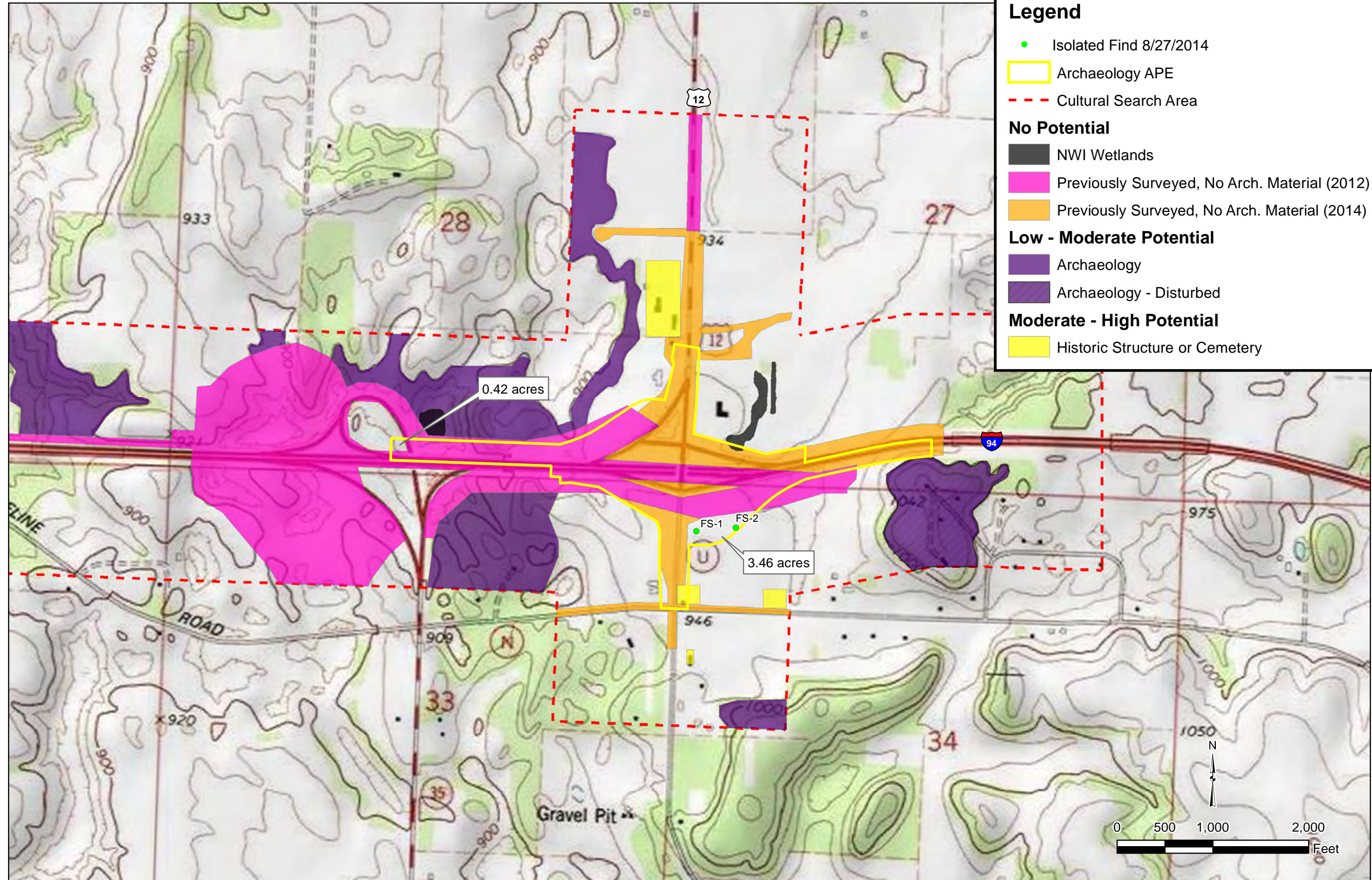
AECOM Technical Services, Inc.

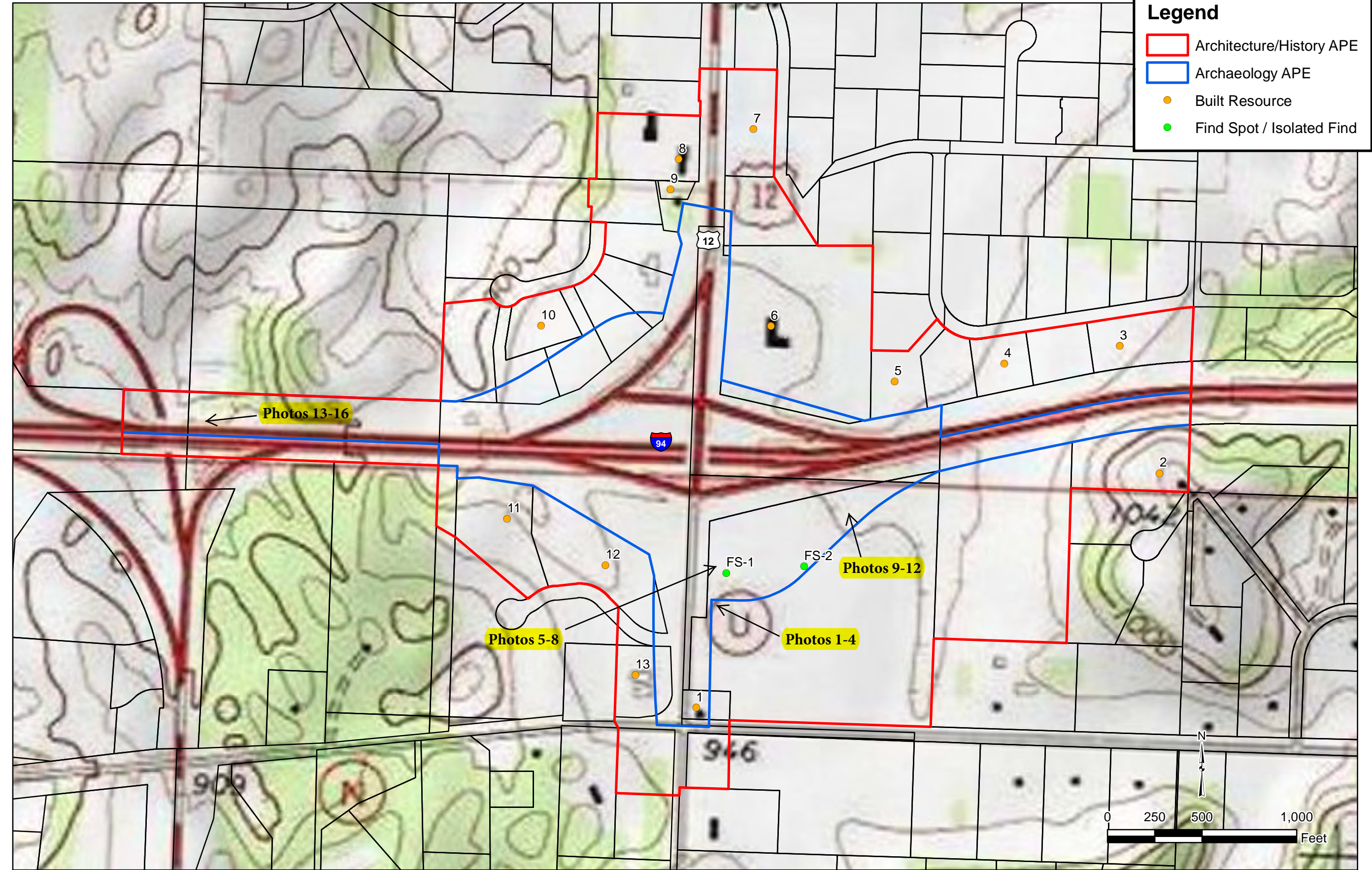
Sincerely,

Amy L. Ollendorf, P.A.
Program Manager, Cultural Heritage
Amy.Ollendorf@aecom.com

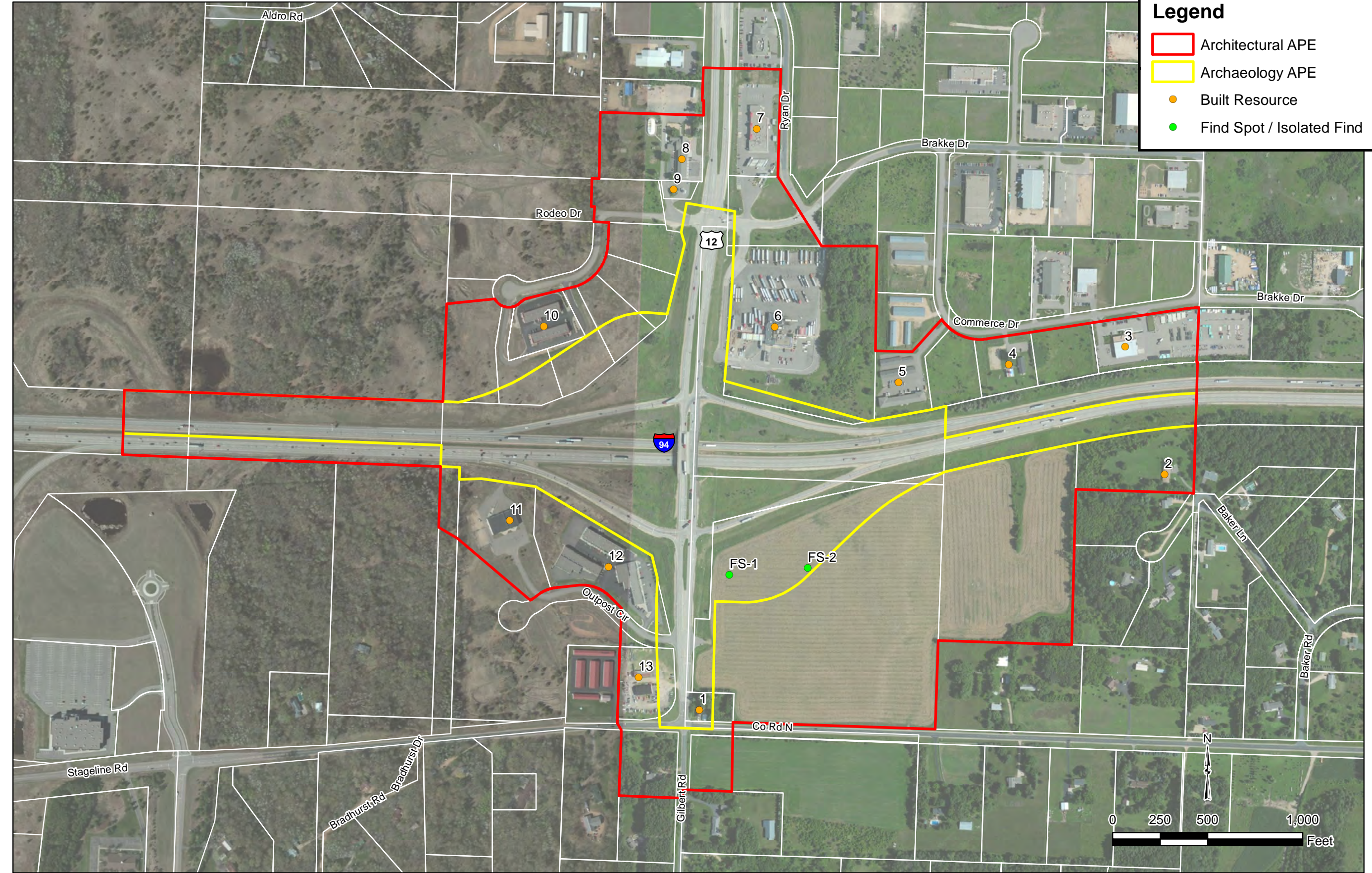
Trina Meiser, M.A.
Historic Preservation Planner
Trina.Meiser@aecom.com

Enclosures: Figures 1-4, References Cited. DT 1446, DT 1459, DT 1978, BAR Form





Source: Northline, Wisconsin 7.5-Minute USGS Quadrangle Topographic Map.



Source: Aerial Photograph from ESRI Data Resource Center.



Wisconsin Department of Transportation
Phase I Archaeological Investigation
I-94/USH 12 Interchange Project

Findspot 1

Hudson, Wisconsin

August 27, 2014 Job No. 60278466, Task 4

Figure 3

www.aecom.com



Wisconsin Department of Transportation
Phase I Archaeological Investigation
I-94/USH 12 Interchange Project

Findspot 2

Hudson, Wisconsin

August 27, 2014 Job No. 60278466, Task 4

Figure 4

www.aecom.com

Photo 1.
View looking northward.



Photo 2.
View looking southward.



Photo 3.
View looking eastward.



Photo 4.
View looking westward.



Wisconsin Department of Transportation
Phase I Archaeological Investigation
I-94/USH 12 Interchange Project

Hudson, Wisconsin
WHS No. 14-1049 SC
August 27, 2014 Job No. 60278466, Task 4

Photos 1-4

www.aecom.com

Photo 5.
View looking northward.



Photo 6.
View looking southward.



Photo 7.
View looking eastward.



Photo 8.
View looking westward.



Wisconsin Department of Transportation
Phase I Archaeological Investigation
I-94/USH 12 Interchange Project

Hudson, Wisconsin
WHS No. 14-1049 SC
August 27, 2014 Job No. 60278466, Task 4

Photos 5-8

www.aecom.com

Photo 9.
View looking northward.



Photo 10.
View looking southward.



Photo 11.
View looking eastward.



Photo 12.
View looking westward.



Wisconsin Department of Transportation
Phase I Archaeological Investigation
I-94/USH 12 Interchange Project

Hudson, Wisconsin
WHS No. 14-1049 SC
August 27, 2014 Job No. 60278466, Task 4

Photos 9-12

www.aecom.com

Photo 13.
View looking northward.



Photo 14.
View looking northwest.



Photo 15.
View looking northeast.



Photo 16.
View looking westward.



Wisconsin Department of Transportation
Phase I Archaeological Investigation
I-94/USH 12 Interchange Project

Hudson, Wisconsin
WHS No. 14-1049 SC
August 27, 2014 Job No. 60278466, Task 4

Photos 13-16

www.aecom.com

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ARCHITECTURE/HISTORY SURVEY COVER SHEET

DT1446 4/2008

Wisconsin Department of Transportation

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

1. PROJECT INFORMATION

WisDOT Project ID 1020-00-06	County St. Croix
Highway/Street I-94 at USH 12	City/Town/Village Hudson
Project Termini * USH 12 from CR N/U north to Brakke Dr/Rodeo Dr (approx. 0.47 miles). * I-94 east approx. 0.47 miles from USH 12 intersection. * I-94 west approx. 0.47 miles from USH 12 intersection.	
USGS Topographic Map/Survey Map Northline, Wisconsin	
Prepared By Trina Meiser, M.A.	Survey Date August 27, 2014

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

- ☒ No listed, eligible, or potentially eligible buildings/structures are identified - No further work recommended.
- ☐ Listed, eligible, or potentially eligible buildings/structures are identified – Check all that apply:
- ☐ Listed or previously determined eligible properties – List each property below:
- ☐ Potentially eligible properties - DOE recommended – List each property and applicable National Register criteria below:
- ☐ Potentially eligible properties – DOE **not** recommended – List each property and applicable National Register criteria and explain why a DOE is not recommended:

3. ATTACHMENT CHECK LIST

- ☐ Architecture/History Survey Worksheet A
- ☐ Architecture/History Survey Worksheet B
- ☒ Letter report (if applicable) with supplemental information
- ☒ Map with surveyed properties clearly labeled
- ☐ Appropriate survey images, see below:

County is digitized

- ☐ Images uploaded to WHPD
- ☐ 1 set of labeled color prints for SHPO
- ☐ 1 set of labeled color prints for BEES

County is **not** digitized

- ☐ Inventory cards with color prints attached
- ☐ 1 set of labeled color prints for BEES

ARCHAEOLOGICAL LITERATURE AND RECORDS REVIEW

DT1459 3/2003

Wisconsin Department of Transportation

PROJECT INFORMATION

Project ID 1020-00-06	Highway/Street I-94 at USH 12	County St. Croix	SHSW Compliance Number 93-5016, 93-5017
--------------------------	----------------------------------	---------------------	--

Project Termini

* USH 12 from CR N/U north to Brakke Dr/Rodeo Dr (approx. 0.47 miles).

* I-94 east approx. 0.47 miles from USH 12 intersection.

* I-94 west approx. 0.47 miles from USH 12 intersection.

Township(s) Hudson	Town/Range Township 29 North, Range 19 West	Sections 27, 28, 33, and 34
-----------------------	--	--------------------------------

USGS Quadrangle(s)

Northline

SOURCES RESEARCHED

☒ See Continuation Sheet

<input checked="" type="checkbox"/> OSA USGS Maps	<input checked="" type="checkbox"/> Previous Surveys	<input type="checkbox"/> CEB Atlas
<input type="checkbox"/> WI Land Economic Inventory (WLEI)	<input type="checkbox"/> County History	<input type="checkbox"/> CEB Manuscripts
<input type="checkbox"/> Burial Sites Office	<input checked="" type="checkbox"/> Archival Maps:	

Publisher Hixson, W.W. & Company	Year 1924	Publisher Hudson Star-Observer	Year 1938
-------------------------------------	--------------	-----------------------------------	--------------

Publisher Thomas O. Nelson Company	Year 1959	Publisher Pinkney & Brown	Year 1897
---------------------------------------	--------------	------------------------------	--------------

☒ Other ASI and 1939 aerial photograph

SITES IN PROJECT AREA

☐ See Continuation Sheet

Total Number of Sites	Prehistoric 0	Historic 0	Cemeteries/Burials 0
-----------------------	------------------	---------------	-------------------------

Code	Type	Affiliation
------	------	-------------

#47 -

#47 -

#47 -

SITES WITHIN ONE MILE OF THE PROJECT AREA

☐ See Continuation Sheet

Total Number of Sites	Prehistoric 0	Historic 0	Cemeteries/Burials 0
-----------------------	------------------	---------------	-------------------------

Code	Type	Affiliation
------	------	-------------

#47 -

#47 -

#47 -

☐ Sites Reported in the Project Area ☐ Sites Reported Within One Mile ☒ No Sites Reported in the Project Area

Research Conducted by

Tiffany Sullivan

Tracy Drunasky

Date

8/15/2014

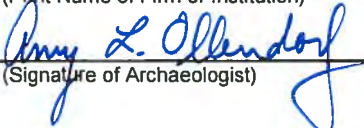
I certify that the literature search was done according to the Wisconsin Survey Guidelines.

Amy L. Ollendorf, Ph.D., P.G., R.P.A.

(Print Name of Archaeologist)

AECOM

(Print Name of Firm or Institution)



(Signature of Archaeologist)

9/2/2014

(Date)

SOURCES RESEARCHED (Continued)

Publisher	Year	Publisher	Year
Rockford Map Publishers	1961	Karstens, Kenneth	1993
Publisher	Year	Publisher	Year
Rockford Map Publishers	1972		
Publisher	Year	Publisher	Year
Rockford Map Publishers	1982		
Publisher	Year	Publisher	Year
Rockford Map Publishers	1993		
Publisher	Year	Publisher	Year
St. Croix County Abstract Company	1929		
Publisher	Year	Publisher	Year
Snyder, Van Vechten & Company	1876		
Publisher	Year	Publisher	Year
Taylor & Price	1886		
Publisher	Year	Publisher	Year
Webb Publishing Company	1914		
Publisher	Year	Publisher	Year
Dudzik, Mark	1992		

SITES IN PROJECT AREA (Continued)

[illegible]

SITES WITHIN ONE MILE OF THE PROJECT AREA (Continued)

[illegible]

ARCHAEOLOGICAL SURVEY FIELD REPORT

Wisconsin Department of Transportation
DT1978 6/2007 (Replaces ED864)

PROJECT INFORMATION

Project ID 1020-00-06	Highway/Street I-94 at USH 12	County St. Croix	SHSW Compliance Number 93-5016, 93-5017
Project Termini * USH 12 from CR N/U north to Brakke Dr/Rodeo Dr (approx. 0..47 miles). * I-94 east approx. 0.47 miles from USH 12 intersection. * I-94 west approx. 0.47 miles from USH 12 intersection.		Project Size 1.5 miles	55 acres
Township(s) Hudson	Town/Range Township 29 North, Range 19 West	Sections 27, 28, 33, and 34	
Project Type <input checked="" type="checkbox"/> Reconstruction <input type="checkbox"/> Reconditioning <input type="checkbox"/> Bridge <input type="checkbox"/> Wetland Mitigation <input type="checkbox"/> Other			
Landowners Contacted - If No, Explain <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Permits Obtained - If Yes, Attach <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

LITERATURE SEARCH

Previously Reported Sites in Project Area <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Archaeology and Records Literature Search <input checked="" type="checkbox"/> Attached	Cemetery in Project Area <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	---	---

FIELDWORK

Dates of Field Work 8/27/14	Crew Size 2	Area Surveyed ~ 4 acres
--------------------------------	----------------	----------------------------

SURVEY TECHNIQUES - Attach project plans showing survey coverage.

<input type="checkbox"/> Shovel Testing 0 acres n/a interval	<input checked="" type="checkbox"/> Surface Collection ~ 3.5 acres 5 m interval	<input type="checkbox"/> Other - Describe
--	---	---

Describe Visibility

0-100%, average ~ 60%

LAND USE - Describe. Also, attach map, showing location.

Were there area(s), which were not surveyed? If yes, show on project plans and explain.

☒ Yes ☐ No ~ 0.5 acres at far west end of APE = very steep slope downward from I-94 to channelized drainage.

Were there area(s), which were extensively impacted? If yes, show on project plans and explain.

☒ Yes ☐ No ~ 0.5 acres at far west end of APE = very steep slope downward from I-94 to channelized drainage.

Comments

ISOLATED FINDS - Describe. Also, attach map, showing location.

Findspots 1 & 2 are each individual whiteware ceramic fragments (1 each).

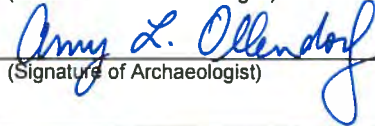
I certify that the literature search and all fieldwork conducted for this report was done according to the Wisconsin Archeological Survey Guidelines. No archeological sites were identified in the project area.

AECOM

(Print Name of Firm or Institution)

Dr. Amy L. Ollendorf

(Print Name of Archaeologist)


(Signature of Archaeologist)


(Date)

Note: Current archaeological methods may not detect buried sites or burial areas. If artifacts, or human remains are discovered during construction, immediately stop construction in that area and notify the Wisconsin Department of Transportation, Bureau of Equity & Environmental Services.

ARCHAEOLOGICAL REPORTS INVENTORY FORM

WHS PROJECT # _____

COUNTY St. Croix

AUTHORS: Amy L. Ollendorf, Ph.D. and Trina Meiser, M.A.

REPORT TITLE: Historical and Archaeological Survey Letter Report for Amendment #1 for the Interstate-94/US Highway 12 Interchange, Hudson Corridor Planning/Feasibility Study, WisDOT Project ID: 1020-00-06, Hudson Township, St. Croix County, WI.

DATE OF REPORT (MONTH AND YEAR): September 2014

SERIES/NUMBER: _____

PLACE OF PUBLICATION: Minneapolis, MN

LOCATIONAL INFORMATION [LEGAL DESCRIPTION OF SURVEY AREA (T-R-S)]

Township 29 North, Range 19 West, sections 27, 28, 33, and 34

U.S.G.S. QUAD MAP(S): Northline, Wisconsin

SITE(S) INVESTIGATED: n/a

ACRES INVESTIGATED: ~ 4

AGENCY # _____

INVESTIGATION TECHNIQUES COMPLETED (Check all that apply.)

- | | | |
|---|---|--|
| <input type="checkbox"/> Historical Research | <input checked="" type="checkbox"/> Surface Survey | <input type="checkbox"/> Geomorphology |
| <input type="checkbox"/> Interview/Informant | <input type="checkbox"/> Soil Core | <input type="checkbox"/> Underwater |
| <input type="checkbox"/> Records/Background | <input checked="" type="checkbox"/> Walk Over/Visual Inspection | <input type="checkbox"/> Avocational Survey |
| <input type="checkbox"/> Literature Background Research | <input type="checkbox"/> Mechanical Stripping | <input type="checkbox"/> Chance Encounter |
| <input type="checkbox"/> Traditional Knowledge | <input type="checkbox"/> Test Excavation/Phase II | <input type="checkbox"/> Osteological Analysis |
| <input type="checkbox"/> Monitoring | <input type="checkbox"/> Major Excavation/Phase III | <input type="checkbox"/> Faunal Analysis |
| <input type="checkbox"/> Shovel Testing/Probing | <input type="checkbox"/> Remote Sensing | <input type="checkbox"/> Floral Analysis |

ABSTRACT: ☐ Included in report ☒ Written in space below

SRF Consulting Group, Inc. (SRF) retained AECOM Technical Services, Inc. (AECOM) for cultural resources surveys and studies for the I-94/US Highway 12 (I-94/USH 12) portion of the Hudson Corridor Planning/Feasibility Study (the Project). Among other Project plans, improvements are planned for the existing I-94/USH 12 interchange. During Spring 2014, the WisDOT delineated the Area of Potential Effects (APE) for direct effects at the I-94/USH 12 interchange. The APE is located in Sections 27, 28, 33, and 34 in Township 29 North, Range 19 West and consists of the following:

(See Continuation Sheet)

Continuation Sheet

Ollendorf & Meiser (2014) Historical and Archaeological Survey Letter Report for Amendment #1 for the Interstate-94/US Highway 12 Interchange, Hudson Corridor Planning/Feasibility Study, WisDOT Project ID: 1020-00-06, Hudson Township, St. Croix County, Wisconsin.

ABSTRACT - continued.

- The existing USH 12 corridor from the intersection of County Roads (CRs) N and U to the south and Brakke Drive/Rodeo Drive to the north (approx. 0.47 miles total), and
- Approximately 0.47 miles to the east and approximately 0.47 miles to the west of the USH 12 intersection along I-94.

Prior to this study, AECOM prepared a cultural resources predictive model for the potential for both archaeological and built resources (historical/architectural) for the greater Project. This model was updated in August 2014 to include locations previously surveyed around the existing interchange. The updated predictive model indicated only two locations not previously surveyed by archaeologists. The larger of the two areas (approximately 3.5 acres) is located in the NW $\frac{1}{4}$ -NW $\frac{1}{4}$ of Section 34, and the smaller area (approximately 0.4 acres) is in the SE $\frac{1}{4}$ -SW $\frac{1}{4}$ of Section 28 at the westernmost end of the APE.

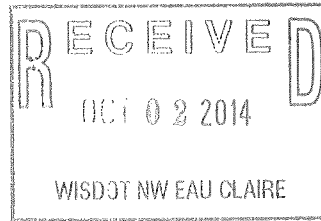
The archaeological pedestrian survey was completed systematically along roughly parallel transects spaced 5 meters apart throughout the agricultural field in Section 34. Ground-surface visibility ranged 0-100%, with the overall average about 60% in the harvested/fallow field. A Trimble Global Positioning System (GPS) was utilized to keep the field crew within the APE's boundaries and to record archaeological finds, if any. No archaeological features were observed in the larger area in the southeast quadrant of the I-94/USH 12 interchange (Section 34), although two isolated finds of undecorated whiteware fragments were found. These were labeled FS-1 and FS-2, but do not qualify as *bona fide* archaeological sites. Systematic survey was not conducted in the small area in Section 28, because the extremely steep slopes down from the I-94 corridor into a channelized and riprapped ravine within the right-of-way (ROW) negated the probability of intact and significant archaeological materials.

Neither archaeological findspot is eligible for the NRHP. AECOM recommends a finding of "No Historic Properties Affected" in the APEs and no further work for archaeology and architecture/history should be required for the improvements to the I-94/USH 12 interchange.



Lac du Flambeau Band of Lake Superior Chippewa Indians
Tribal Historic Preservation Office

James Koenig
Planning Supervisor
Northwest Region – Eau Claire
718 W. Clairemont Ave.
Eau Claire, WI 54701



September 19, 2014

SUBJECT: Project ID: 1020-00-06; Interstate 94; US Highway 12 Interchange; St. Croix County, WI

Dear Mr. Koenig:

In response to your letter dated **August 12, 2014**, the Lac du Flambeau Band of Lake Superior Chippewa Indians would like to express concerns with any impacts to historic and cultural properties located within the project area of potential effect for the project mentioned above. This project is located within areas that have previously been occupied by the Northern Ojibwe Bands.

Please forward all results of an archival review and archaeological reports. Should there be an impact or effect to historic properties as a result of this project, we will request consultation pursuant to Section 106 of the National Historic Preservation Act, as amended,

However, if a review has not yet been completed, the Lac du Flambeau Tribal Historic Preservation Office is available to assist in the identification of cultural resources, or an archaeological/historical assessment or archival review for a fee.

Please contact us if you have any questions or concerns at (715) 588-2139. You may send the results of the archival review and archaeological report to:

Tribal Historic Preservation Office
P.O. Box 67
Lac du Flambeau, WI 54538

Or in digital format to: ldfthpo@ldftribe.com Thank you.

Sincerely,


Melinda J. Young
Tribal Historic Preservation Officer

P.O. Box 67
Lac du Flambeau, WI 54538

Phone: (715) 588-2139 or (715) 588-2270
Fax: (715) 588-2419
Email: ldfthpo@ldftribe.com

Appendix E

Indirect Effects Pre-Screening Worksheet

WisDOT's Pre-Screening Worksheet for EA and ER Projects for Determining the Need to Conduct a *Detailed* Indirect Effects Analysis

Prepared by Environmental Policy and Community Impacts Analysis Section
Bureau of Equity & Environmental Services
Division of Transportation System Development
Wisconsin Department of Transportation

NEPA requires the assessment of indirect effects of all projects under CEQ regulations. **All EIS documents require a detailed indirect effects analysis.** However, not all non-EIS environmental reviews for transportation projects will warrant a *detailed analysis* of indirect effects. This pre-screening guidance will assist the Study Team in determining whether a more detailed analysis is necessary in order to comply with NEPA requirements. Refer to the complete indirect effects analysis guidance document and FDM (chapter 25-5-17) for further information.

This pre-screening worksheet may be helpful in scoping for the analysis. If the Study Team is uncertain what level of analysis the project will need, do not make an assumption that the project does not require the analysis. Contact the Environmental Policy and Community Impacts Section staff and the regional environmental coordinator for more assistance.

The factors listed below are not in any order of importance. Each EA and ER project needs to be examined individually to understand whether a particular factor or combination factors requires detailed analysis for indirect effects.

Factors to Consider

1. Project Design Concepts and Scope
2. Project Purpose and Need
3. Project Type (Categorical Exclusions, etc.)
4. Facility Function (Current and Planned—principal arterial, rural arterial, etc.)
5. Project Location
6. Improved Travel Times to an Area
7. Local Land Use and Planning Considerations
8. Population and Demographic Considerations
9. Rate of Urbanization
10. Public Concerns

1. Project Design Concepts and Scope

- Do the project design concepts include any one of the following?
 - Additional thru travel lanes (expansion): **No**
 - New alignment: **No**
 - New and/or improved interchanges and access: **Yes**
 - The project includes improvements to the Interstate Highway 94 (IH 94) / US Highway (USH) 12 interchange.
 - Bypass alternatives: **No**

2. Project Purpose and Need

- Does the project purpose and need include:
 - Economic development – in part or full (i.e. improved access to a planned industrial park, new interchange for a new warehouse operation): **No**
 - The need for the project is to address operational problems at the IH 94 / USH 12 interchange. Based on an increase in future traffic volumes, the existing interchange will not be able to meet future traffic demand, resulting in poor traffic operations.

3. Project Type

- What is the project document “type”?
 - EIS project—a detailed indirect effects analysis is warranted: **No**
 - Many EA’s will require a detailed indirect effects analysis (However, it also depends on the project design concepts and other factors noted here.): **Yes**
 - The project will be covered by an Environmental Assessment (EA). However, no negative indirect effects warranting a detailed indirect effects analysis were identified.
 - If a Categorical Exclusion (pER or ER) applies, a detailed assessment is not generally warranted, however documentation must be provided that addresses this determination including basic sheet information: **No**

4. Facility Function

- What is the primary function of the existing facility? What is the proposed facility?
 - Urban arterial: **Yes**
 - IH 94 and USH 12 are principal arterial highways. IH 94 is also a WisDOT Corridors 2030 “backbone” route.
 - Rural arterial: **No**

5. Project Location (location can be a combination)

- Urban (within a Metropolitan Planning Area): **No**
- Suburban (part of larger metropolitan/regional area, may or may not be part of an metropolitan planning area): **Yes**
 - The project is located east of Hudson which connects to a more populated area within the Twin Cities of Minnesota.
- Small community (population under 5,000): **No**
- Rural with scattered development: **Yes**
 - The land immediately surrounding the project area is rural with some development – there is a mix of undeveloped land, farmland, commercial development, and residential development surrounding the project area.
- Rural, primarily farming / agricultural area: **No**

6. Improved travel times to an area or region

- Will the proposed project provide an improvement of 5 or more minutes? (Based on research, improvements in travel time can impact the attractiveness of an area for new development.): **No**
 - The project will result in operational improvements, which are expected to reduce intersection delay; however, these improvements would be less than the 5 minute threshold noted above. The project would not affect travel speeds on IH 94. Therefore, travel times would not be affected for through trips.

7. Land Use and Planning

- What are the existing land use types in project area?
 - Existing land uses surrounding the project area consist primarily of commercial uses. Agricultural uses are located in the southeast quadrant of the IH 94 / USH 12 interchange, and residential land uses are located south of the IH 94 / USH 12 interchange.
- What do the local plans, neighborhood plans, and regional plans, indicate for future changes in land use?
 - Comprehensive plans are adopted for the Town of Hudson and St. Croix County. The Proposed Action does not conflict with these local comprehensive planning efforts.

The St. Croix County Comprehensive Plan notes that most towns delineated limited future commercial areas along major transportation corridors and intersections. Commercial development has already occurred or is ongoing in the northeast, northwest, and southwest quadrants of the IH 94 / USH 12 interchange, and the agricultural land in the southeast quadrant of the IH 94 / USH 12 interchange is identified for future infill development (i.e. conversion to commercial uses).
- What types of permitted uses are indicated in the local zoning?
 - Town of Hudson and St. Croix County records indicate that current zoning within the study area is commercial and commercial / light industrial land uses.
- Would the project potentially conflict with plans in the project area? (e.g., capacity expansion in areas in which agricultural preservation is important to local government(s)?):
 - The IH 94 / USH 12 interchange project is consistent with the current Town of Hudson and St. Croix County zoning requirements, existing land uses, and future land use designations. Lands surrounding the interchange are designated for commercial uses by the Town of Hudson. The existing IH 94 / USH 12 interchange would be reconstructed to address geometric deficiencies, safety considerations, and intersection operations problems. The project is not a capacity expansion or new interchange project (i.e., no new access to the interstate system). Therefore, there are no land uses within the study area that would be negatively affected by the project.

8. Population/Demographic Changes

- Have the population changes over past 5, 10, and 20 years been high, medium, low growth rate vs. state average over same period? (i.e., USDA defines high growth in rural areas as greater than annual population growth of 1.4 %):
 - Historic population changes for the Town of Hudson and St. Croix County over the past 5, 10, and 20 years compared to the Wisconsin average are summarized below.¹ The Town of Hudson, St. Croix County, and the State of Wisconsin have experienced positive growth rates during these periods. Over the 20 year timeframe from 1994 to 2014, the Town of Hudson has grown more than seven times as fast as the State of Wisconsin. Over the past 5 and 10 years, the Town of Hudson grew at 7.9% and 18.5% respectively, whereas the State of Wisconsin grew at 0.8% and 3.6% over those same timeframes.

Table 1. Population Changes

	2009 – 2014 (Past 5 Years)	2004 – 2014 (Past 10 Years)	1994 – 2014 (Past 20 Years)
Town of Hudson	7.9%	18.5%	101.7%
St. Croix County	7.3%	18.2%	62.5%
Wisconsin	0.8%	3.6%	13.3%

- What are the projections for the future for population? (Use Wisconsin DOA projections.)
 - Future population projections for the Town of Hudson and St. Croix County are tabulated below. Percent population change forecasts for the Town of Hudson and St. Croix County over the next 5, 10, and 20 years are more than twice the forecast population percentage increases for the State of Wisconsin.

Table 2. Population Forecasts for Town of Hudson, St. Croix County, and Wisconsin

	2015	2020	2025	2035
Town of Hudson	8,820	9,820	10,660	12,010
St. Croix County	87,990	96,985	104,450	115,900
Wisconsin	5,783,015	6,005,080	6,203,850	6,476,270

Table 3. Percent Change in Population Forecasts

	2015 – 2020 (5 Years)	2015 – 2025 (10 Years)	2015 – 2035 (20 Years)
Town of Hudson	11.3%	20.9%	36.2%
St. Croix County	10.2%	18.7%	31.7%
Wisconsin	3.8%	7.3%	12.0%

¹ Town of Hudson, St. Croix County, and State of Wisconsin historic populations and year 2014 population estimates from the Demographic Services Center, Wisconsin Department of Administration. Time Series of The Final Official Population Estimates and Census Counts for Wisconsin Minor Civil Divisions accessed 2014-11-14 at <http://www.doa.state.wi.us/Default.aspx?Page=d1a4b779-e7b5-49e6-8d70-b4881229b50d>.

- Have there been considerable changes for population demographics and employment over the past 10 - 20 or more years?
 - Over the past 10 to 20 years, the Town of Hudson and St. Croix County have experienced substantial population growth. Economic data from the 2000 US Census and 2010 US Census show that median incomes have risen during this period; however, poverty levels (i.e., percent of individuals below poverty level) have increased slightly for the State of Wisconsin and St. Croix County. Poverty levels have not changed for the Town of Hudson.

Table 4. Town of Hudson, St. Croix County, and Wisconsin Population Change, 1980 to 2010

	Population				1980 to 2010 % Change
	1980	1990	2000	2010	
Town of Hudson	2,012	3,692	6,213	8,461	320.5%
St. Croix County	43,262	50,251	63,155	84,345	95.0%
Wisconsin	4,705,642	4,891,769	5,363,715	5,686,986	20.9%

9. Rate of Urbanization

- Does the project study area contain proposed new developments?: **No**
 - The northeast and southwest quadrants of the IH 94 / USH 12 interchange are developed. The northwest quadrant is only partially developed; however, the remaining undeveloped land that surrounds Rodeo Drive is divided into lots for future commercial development. The southeast quadrant is in agricultural uses. There are no known proposed developments in the project study area.
- What are the main changes in developed area vs. undeveloped areas over past 5, 10 and 20 years?
 - The main change in developed area vs. undeveloped area within the project study area over the past 10-20 years is the commercial development in the northwest and southwest quadrants of the IH 94 / USH 12 interchange.
- Have there been significant conversions of agricultural land uses to other land use types, such as residential or industrial?
 - Lands surrounding the IH 94 / USH 12 interchange have been converted from agricultural uses to commercial uses as described above.

10. Public, State and/or Federal Agency Concerns

- Have local officials, federal and/or state agencies, property owners, stakeholders or others raised concerns related to potential indirect effects from the project? (e.g., land use changes, "sprawl", increase traffic, loss of farmland, etc.)
 - There has been a public information meeting and coordination letters have been mailed to resource agencies as part of the proposed project. To date, there have not been any concerns over indirect effects of the proposed project. The IH 94 / USH 12 interchange project is not an expansion project. The purpose of this project is to address geometric deficiencies, improve safety, and improve traffic operations at the

IH 94 / USH 12 ramp termini. Any forecast increases in traffic volumes are the result of planned growth and development within the Town of Hudson.

Conclusion Regarding Indirect Effects

The existing IH 94 / USH 12 interchange is currently a full access interchange. The proposed action includes reconstruction of the IH 94 / USH 12 interchange to address traffic operation needs. Lands surrounding the IH 94 / USH 12 interchange are zoned for development, and the land use plan for the Town of Hudson guides agricultural lands along IH 94 east of CTH U toward commercial uses.

Through the screening analysis using WisDOT's pre-screening effects procedures, including the assessment of existing and planned land uses as summarized above, it is concluded that the factors of the project, its location, and other conditions do not warrant further detailed analysis of the potential for indirect effects.

Appendix F

Cumulative Impacts Pre-Screening Worksheet

Wisconsin Department of Transportation Guidance for Conducting a Cumulative Effects Analysis

Prepared by Environmental Policy and Community Impacts Analysis Section
Bureau of Equity & Environmental Services
Division of Transportation System Development
Wisconsin Department of Transportation

CEQ regulations require all federal agencies to consider the cumulative effects of all proposed agency actions. A cumulative effects analysis is required whenever an Environmental Assessment or Environmental Impact Statement is prepared AND the following two related criteria apply:

- (1) The proposed action under review must have a direct and/or indirect effect on a specific natural, historic, cultural resource or population for the proposal or alternative to exert a *cumulative* influence.
- (2) If no direct and/or indirect effect to a specific resource is suspected, there is no need to consider cumulative effects to that resource.

If a proposed project will have no significant impact on the environment, the use of a categorical exclusion (CE) is appropriate. In reaching this conclusion, the cumulative effects on the resource must be considered. However, when a CE is selected as the appropriate level of environmental documentation, no more than a cursory examination of cumulative effects is usually warranted.

The IH 94 / USH 12 Interchange Project will be covered by an Environmental Assessment. A cursory examination of cumulative effects is described below, following the basic steps identified in the WisDOT *Guidance for Conducting a Cumulative Effects Analysis* (November 2007).

In general, the following items must be identified in every cumulative effects analysis:

1. The area in which the effects of the proposed project will be felt:

The area in which the effects of the proposed project will be felt is limited to an area within or adjacent to the project limits. See Figure 7 in Appendix B.

2. The impacts that are expected in that area from the proposed project:

The direct impacts resulting from construction of the IH 94 / USH 12 interchange project are described in greater detail in the Environmental Assessment (EA) basic sheets and factor sheets. Those resources directly affected by the project include agricultural lands (conversion of farmland to transportation uses), wetlands (placing fill in wetlands), traffic noise levels (alteration of the vertical alignment of USH 12 and the addition and relocation of interchange ramps), and water quality / stormwater management (additional impervious surface and resulting stormwater runoff).

3. Other past, present, and reasonably foreseeable actions that have or are expected to have impacts in the area:

Past Actions

Past actions include the development that has resulted in the current built environment adjacent to the IH 94 / USH 12 interchange. Commercial development is located in the northeast, northwest and southwest quadrants of IH 94 / USH 12. Land in the southeast quadrant of the IH 94 / USH 12 interchange is in agricultural uses.

Present Actions

There are no known present actions at this time.

Reasonably Foreseeable Actions

Reasonably foreseeable actions include future approved projects. The timeframe for consideration of future actions is a 20-year timeframe, which is consistent with the traffic forecasts completed as part of the West Central Regional Freeway System I-94 Corridor Study Report. Reasonably foreseeable actions within the study area include:

- Wisconsin Department of Transportation: additional travel lanes on IH 94 from the St. Croix River (WIS 35) west to USH 12 / CTH U as identified in the Hudson Area I-94 Corridor Study.
- Wisconsin Department of Transportation: reconstruction and additional travel lanes on IH 94 from USH 12 / CTH U east to 2 miles east of WIS 65 as identified in the Hudson – Baldwin IH 94 Corridor Expansion Study (programmed for construction in 2017).

Other future transportation actions that are reasonably foreseeable include routine improvements to highways outside of, but adjacent to the area covered under the Proposed Action. No other projects were identified in detail which would potentially affect the resources in the study area; however, additional transportation projects could be programmed in the project area which may have impacts on resources present.

Additional land use conversions and development in the areas surrounding the Proposed Action would occur in a manner that is consistent with local and regional comprehensive plans. Some commercial development is anticipated in the northwest and southeast quadrants of the IH 94 / USH 12 interchange based on the official St. Croix County zoning map; however, future development will also be influenced by land costs, regulatory approvals, and economic conditions.

4. The impacts or expected effects from these other actions:

Agricultural Land

Future actions are anticipated to have minimal impacts on agricultural land. The future IH 94 improvements may require the conversion of a small amount of agricultural land adjacent to the highway to transportation uses. None of the reasonably foreseeable actions would change access to agricultural lands within or adjacent to the project limits. Agricultural land east of CTH U between IH 94 and CTH N is guided towards future commercial uses as identified in the Town of Hudson Comprehensive Plan. The degree of any land development and subsequent conversion of agricultural land to other uses within the project area will be guided by local zoning and land use plans.

Wetlands

The future IH 94 improvements may result in impacts to wetlands within and immediately adjacent to the project limits; however, any wetland impacts would be avoided, minimized, and/or mitigated in accordance with regulatory and permitting requirements in place at that time.

Traffic Noise Levels

The future IH 94 improvements include additional travel lanes on IH 94 through the project area, which would increase traffic noise levels within the project limits. Forecasted noise impacts from additional roadway traffic would be studied and noise abatement measures would be implemented if found to be feasible and reasonable.

Water Quality / Stormwater Runoff

The future IH 94 improvements include additional travel lanes on IH 94 through the project area. This additional impervious surface would result in additional runoff within the project limits; however, this runoff would be managed in accordance with regulatory and permitting requirements in place at that time.

5. The overall impact that can be expected if the individual impacts are allowed to accumulate:

Based on the information known to date, there is little potential for substantial cumulative impacts to the resources directly or indirectly impacted by the project.

Appendix G

Agricultural Impact Statement (AIS)

AGRICULTURAL **I**MPACT **S**TATEMENT



**IH 94 & USH 12 Interchange
St. Croix County**

Published February 2, 2015

**Wisconsin Department of Agriculture,
Trade and Consumer Protection
DATCP #4016**



Agricultural Impact Statement

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TABLE OF CONTENTS

I. INTRODUCTION	1
II. DESCRIPTION OF THE PROJECT	1
A. Project Location Map.....	2
B. Existing Highways	3
C. Project Need.....	3
D. Alternatives	3
III. AGRICULTURAL SETTING	4
A. Agricultural Productivity	4
B. Size Distribution of Farms	5
C. Property Taxes, Assessed Values, and Sale Values.....	6
D. Soils	7
E. Farmland Preservation	7
IV. AGRICULTURAL IMPACTS	6
A. Drainage.....	8
B. Fencing.....	9
C. Appraisal Process.....	9
V. RECOMMENDATIONS	10
APPENDICES	
I. Agricultural Impact Statement Statute.....	13
II. Eminent Domain	15
III. Official Mapping.....	19
IV. Classification of Important Farmlands	21
V. NRCS Capability Classifications.....	23
VI. Drainage.....	25

MAILING LIST

AGRICULTURAL IMPACT STATEMENT

IH 94/USH 12 Interchange St. Croix County Wisconsin Department of Transportation Project ID#: 1020-00-06

I. INTRODUCTION

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) has prepared this agricultural impact statement (AIS) in accordance with §32.035, *Wisconsin Statutes*. The AIS is an informational and advisory document that describes and analyzes the potential effects of the project on farm operations and agricultural resources, but cannot stop a project.

The DATCP is required to prepare an AIS when the actual or potential exercise of eminent domain powers involves an acquisition of interest in more than 5 acres of land from any farm operation.¹ The DATCP may choose to prepare an AIS if an acquisition of 5 or fewer acres will have a significant impact on a farm operation. Significant impacts could include the acquisition of buildings, the acquisition of land used to grow high-value crops, or the severance of land. The DATCP should be notified of such projects regardless of whether the proposing agency intends to use its condemnation authority in the acquisition of project lands. The proposing agency may not negotiate with or make a jurisdictional offer to a landowner until 30 days after the AIS is published. Refer to Appendix I for the text of the AIS statute and Appendix II for excerpts of the statutes on eminent domain.

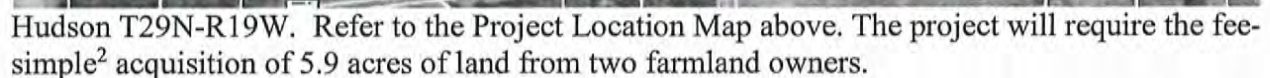
The DATCP is not involved in determining whether or not eminent domain powers will be used or the amount of compensation to be paid for the acquisition of any property. The AIS reflects the general objectives of the DATCP in its recognition of the importance of conserving important agricultural resources and maintaining a healthy rural economy.

Sources of information used to prepare this statement include the *Wisconsin 2014 Agricultural Statistics* and other yearly issues; the *2012 Census of Agriculture*; the *St. Croix County Farmland Preservation Plan*; the Web Soil Survey, the *Soil Survey of St. Croix County*; St. Croix County Extension; SRE Consulting Group, the Wisconsin Department of Transportation's consultant for this project; and the owner of the affected farmland.

II. DESCRIPTION OF THE PROJECT

The Wisconsin Department of Transportation (WisDOT) is proposing to reconstruct the interchange at Interstate Highway (IH) 94 and U.S. Highway (USH) 12 in St. Croix County. Agricultural land that will be affected by the project is located in Section 34 in the town of

¹The term *farm operation* includes all owned and rented parcels of land; buildings and equipment; livestock; and personnel used by an individual, partnership, or corporation under single management to produce agricultural commodities.



Official mapping is used by WisDOT to preserve land for future construction of expressways and freeways. It is covered under Wisconsin Statute §84.295(10). Refer to Appendix III for the text of this statute. This statute allows the preservation of a corridor by prohibiting the construction of new structures or the remodeling of existing structures beyond routine maintenance and emergency repairs within the mapped corridor. If a landowner wishes to build or remodel a structure, he/she must notify WisDOT 60 days prior to the start of the proposed construction. WisDOT would then have the opportunity to purchase the affected land. Any structures in violation of the official

2

mapping ordinance at the time of right-of-way acquisition would not be compensated for by WisDOT. Also, WisDOT can offer to purchase land within the corridor at any time before construction to alleviate hardships for landowners.

The proposed project will include widening the USH 12 bridge over IH 94, reconstructing USH 12 from IH 94 to the Rodeo Circle/Brakke Drive intersection, and reconstructing County Trunk Highway (CTH) "U" from IH 94 south to CTH "N." The agricultural land to be affected by the project is located in the southeast quadrant of the IH 94/USH 12 interchange. It is needed to accommodate a loop ramp.

Existing Highways

The IH 94/USH 12 intersection is a standard diamond interchange. Within the project limits, IH 94 is a divided highway with two westbound travel lanes, three eastbound travel lanes, and a rural median. There is also an auxiliary eastbound lane between the entrance ramp for STH 35 and the interchange at USH 12. North of IH 94, USH 12 is a four-lane highway with a rural median. South of IH 94, CTH "U" is a four-lane highway that transitions to two lanes at CTH "N."

Project Need

WisDOT has indicated that the project is needed to address deficiencies in the operations of the interchange. Due to planned growth in the area, the interchange is projected to operate at unacceptable levels of service. This is expected to lead to traffic backups that slow travel on the Interstate.

Alternatives

WisDOT considered and rejected the following alternatives.

No build: Under this alternative, no improvements would be made to the existing interchange. WisDOT rejected this alternative because it would not address the deficiencies in interchange operations.

Construction of an eastbound IH 94 loop to northbound USH 12 in the southeast quadrant of the interchange: This alternative would allow free-flow movement of eastbound to northbound traffic. WisDOT rejected this alternative because it would not increase the capacity of the interchange enough to meet the anticipated growth in traffic.

III. AGRICULTURAL SETTING

In a 2011 report, the University of Wisconsin Extension describes agriculture's contribution to the St. Croix County³ economy. Researchers estimated that agriculture provides jobs for 3,605 people in St. Croix County, which represent 9.3 percent of the county's 38,684-member workforce. Agriculture accounts for \$532.8 million in business sales or 11.1 percent of St. Croix County's total business sales. Every dollar of sales from agricultural products generates an additional \$0.41 of business sales in other parts of St. Croix County's economy. Agriculture also contributes \$158.2 million to county income, 4.2 percent of St. Croix County's total income. St. Croix County agriculture pays \$15.4 million in taxes. This does not include property taxes for local school districts.

Agricultural Productivity

In 2013, St. Croix County ranked fourteenth out of Wisconsin's 72 counties in the production of oats.⁴ In that same year, they harvested 73,900 acres of corn for grain, 38,500 acres of soybeans, 24,700 acres of alfalfa hay, 5,800 acres of corn for silage, and 2,900 acres of oats. They also raised 60,000 head of cattle and calves.

Fifteen years earlier, St. Croix County farmers harvested 75,100 acres of corn for grain, 60,500 acres of alfalfa hay, 22,400 acres of soybeans, 14,200 acres of corn for silage, and 8,700 acres of oats. They also raised 66,000 head of cattle and calves.

Land in Farms, Number of Farms, and Average Size of Farms

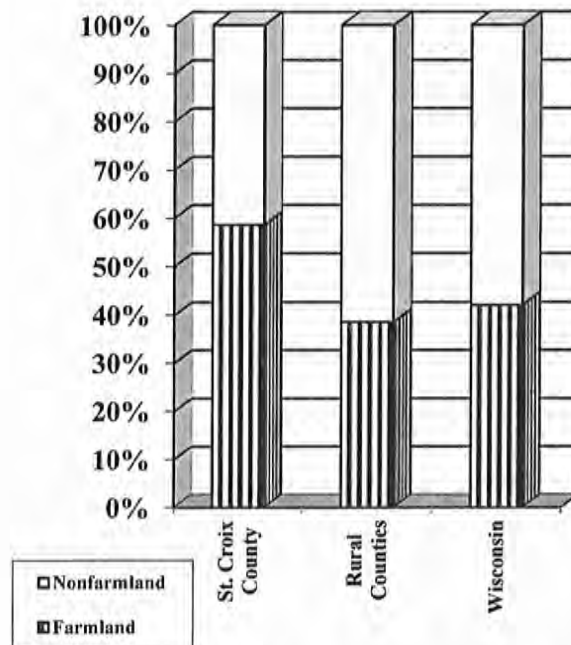
St. Croix County is classified as a rural county, which is defined as having an average of less than 100 residents per square mile. According to the *2012 Census of Agriculture*, St. Croix County has 267,686 acres of land in farms,⁵ which represents 57.9 percent of the total land area. The average for rural counties is 207,257 acres of land in farms or 38.7 percent of the total county land area. These can be compared to the average of 202,346 acres or 42.2 percent of land in farms among all Wisconsin counties. Refer to Chart 1 for a graphic comparison of the percentage of land in farms in St. Croix County, rural counties, and Wisconsin.

³ *St. Croix County Agriculture: Value and Economic Impact*, University of Wisconsin-Extension, Cooperative Extension, 2011, <http://www.uwex.edu/ces/ag/wisag/>

⁴ *Wisconsin 2014 Agricultural Statistics*, Wisconsin Agricultural Statistics Service, National Agricultural Statistics Service USDA, Wisconsin Department of Agriculture, Trade and Consumer Protection, September 2014, pp. 18 through 54.

⁵ Land in farms consists primarily of agricultural land used for crops, pasture, or grazing. It also includes woodland and wasteland not actually under cultivation or used for pasture or grazing, providing it was part of the farm operator's total operation.

Chart 1
Land in Farms, 2012



According to the *Census of Agriculture*, St. Croix County lost 103 farms (a 6.8 percent decrease) between 1997 and 2012 as the total number fell from 1,520 to 1,417. Wisconsin as a whole gained 4,152 farms (a 6.3 percent increase) as the total number of farms in the state rose from 65,602 to 69,754 during the same period. The amount of land in farms decreased from 312,076 to 267,685 acres (a 14.2 percent loss) in St. Croix County. In Wisconsin as a whole, the amount of land in farms declined from 14.9 to 14.6 million acres (a 2.2 percent loss) during this fifteen-year period. The average size of farms fell from 205 to 189 acres in St. Croix County and from 227 to 209 acres in Wisconsin as a whole.

Size Distribution of Farms

Table 1 shows the percentage of farms in each size category for St. Croix County, rural counties, and all Wisconsin counties.⁶ Proportionately, St. Croix County has more farms that are less than 50 acres in size compared to the averages for rural counties and for all Wisconsin counties.

⁶2012 *Census of Agriculture*, U.S. Department of Agriculture, Wisconsin Agricultural Statistics, 2014.

Table 1
Percent of Farms per Size Category, 2012

Acres	% of Farms in St. Croix County	% of Farms in Rural Counties	% of Farms in Wisconsin
0 to 49	39.0%	28.7%	32.1%
50 to 179	35.3%	38.2%	36.6%
180 to 499	17.7%	24.1%	22.5%
500 or more	8.0%	9.0%	8.8%

Property Taxes, Assessed Values, and Sale Values

Table 2 lists the average property tax, assessed value, and sale price per acre of agricultural land in St. Croix County, rural counties, and all Wisconsin counties. The assessed values and property taxes are based on the “use value” of agricultural land. Wisconsin Statutes define agricultural land as “land, exclusive of buildings and improvements, that is devoted primarily to agricultural use.” In 2013, average property taxes⁷ on St. Croix County agricultural land were 14.7 percent lower than the average for rural counties and 18.1 percent lower than the average for all counties.

Table 2
Farmland Taxes and Values

Area	2013 Dollars per Acre of Farmland		
	Average Tax	Assessed Value	Sale Value
St. Croix County	\$2.72	\$155	\$4,233
Rural Counties	3.19	161	3,613
All Counties	3.32	171	4,442

On average, the assessed value⁸ of farmland in St. Croix County was 3.7 percent lower than the average for all rural counties and 9.4 percent lower than the average for all Wisconsin counties.

⁷Wisconsin Department of Revenue, Division of Research and Policy, Sales and Property Tax Policy Team.

⁸ Ibid.

The average sale price⁹ of farmland in St. Croix County was 17.1 percent higher than the average for rural counties and 4.7 percent lower than the average for all counties. These values do not include farmland sold and converted to nonfarm use.

Soils

The major soil¹⁰ that will be affected by the proposed project is Sattre silt loam with 0 to 2 percent slopes. Approximately 78 percent of the proposed acquisition site is covered by this soil. Smaller amounts of Fluvaquents (13%) and Burkhardt sandy loam with 6 to 12 percent slopes (9%) will also be affected by the project.

Sattre silt loam with 0 to 2 percent slopes is well drained and found on pitted outwash plains and stream terraces. It has moderate available water capacity. This soil is classified as prime farmland and it is included in capability class 2s. Refer to Appendix IV for a definition of prime farmland and Appendix V for descriptions of capability classes.

Fluvaquents are somewhat poorly drained and found in depressions on floodplains. The available water capacity is moderate. They are not prime farmland and they are included in capability class 3w.

Burkhardt sandy loam with 6 to 12 percent slopes is excessively drained and found on pitted outwash plains and stream terraces. It has low available water capacity. This soil is not prime farmland and it is included in capability class 4e.

Farmland Preservation

The St. Croix County Farmland Preservation Plan was certified in 1980 and recertified in 2012. The plan identifies farmland preservation areas in the county and provides tax credit eligibility to farmers who wish to participate in the Farmland Preservation program.

The town of Hudson has not adopted an exclusive agricultural zoning ordinance. Therefore, farmland owners in the town of Hudson can only participate in the program if they have a Farmland Preservation Agreement. Richard Pearson does not have a Farmland Preservation Agreement on his property.

⁹ *Wisconsin 2014 Agricultural Statistics*, Wisconsin Agricultural Statistics Service, National Agricultural Statistics Service USDA, Wisconsin Department of Agriculture, Trade and Consumer Protection, 2014, pp. 10 and 11.

¹⁰ Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed December 22, 2014.

The loss of any farmland enrolled in the federal government's various commodity programs could affect a farmer's base acreage resulting in lower revenue from these programs.

IV. AGRICULTURAL IMPACTS

The following table lists the farmland owners who will be affected by the proposed project and the amount of land to be acquired from each of them.

**Table 3
Proposed Acquisitions of Farmland**

Farmland Owners	Acres to be Acquired
Richard Pearson	5.8
Kenall Enterprises	0.1
TOTAL	5.9

DATCP contacted Mr. Pearson by phone and the following is a description of his farm operation and a summary of his concerns.

Mr. Pearson indicated that he grows hay on the affected land.

Mr. Pearson is strongly opposed to the proposed changes to the interchange because it will interfere with his plans for development of the affected property. He has had an approved concept design since 2008, but because of the downturn in the economy, he has not yet started any construction. He indicated that the proposed acquisition of land would disrupt the overall development plan for his property. He did not identify any concerns regarding the project's potential impacts on his farming operation

Drainage

The proposed project is not located within any drainage districts.

Proper field drainage is vital to a successful farm operation. Highway construction can disrupt improvements such as drainage tiling, grassed waterways, ditches, and culverts, which regulate the drainage of farm fields. In addition, construction of impervious surfaces can impede drainage and increase runoff. If drainage is impaired, water can settle in fields and cause substantial damage, such as harming or killing crops and other vegetation, concentrating mineral salts, flooding farm buildings, or causing hoof rot and other diseases that affect livestock. Where salt is used on road surfaces, runoff water can increase the content of salt in nearby soils.

Section 88.87 of the *Wisconsin Statutes* requires highways to be built with adequate ditches, culverts, and other facilities to prevent obstruction of drainage, protect property owners from

damage to lands caused by unreasonable diversion or retention of surface water, and maintain, as nearly as possible, the original drainage flow patterns. Refer to Appendix IV for the statutes pertaining to drainage rights. Landowners whose property is damaged by improper construction or maintenance of highway facilities and highway drainage structures may file a claim with WisDOT within three years after the damage occurs.

Fencing

Compensation for fencing within the acquired right-of-way will be included in the appraisal. If fencing or other improvements are damaged outside of the right-of-way, the owner would receive damages, or the improvement will be repaired or replaced to a condition similar or equal to that existing before the damage was done.

Appraisal Process

Currently, WisDOT does not anticipate constructing this project until 2025 with acquisitions of the needed property taking place in 2024. Earlier acquisitions could be made in cases of hardship.

To start the acquisition process, WisDOT will provide an appraisal of the affected property to the landowners. This will be the basis for their offer. Landowners have the right to obtain their own appraisal of their property. They will be compensated for the cost of this appraisal if the following conditions are met.

1. The appraisal must be submitted to WisDOT within 60 days after the landowner receives WisDOT's appraisal.
2. The appraisal fee must be reasonable.
3. The appraisal must be complete.

The amount of compensation is based on the appraisal(s) and is established during the negotiation process between WisDOT and the individual landowner. An appraisal is an estimate of fair market value. WisDOT is required to provide landowners with information about their rights in this process before negotiations begin.¹¹

¹¹For more information, contact the Relocation Unit, Bureau of Planning and Technical Assistance, Department of Administration, P.O. Box 7868, Madison WI 53707-7868, or call (608)267-0317.

V. RECOMMENDATIONS

The DATCP recommends the following as ways to mitigate the potential adverse impacts associated with the proposed project:

1. WisDOT should keep in contact with all of the property owners who will be directly affected by this project and give them timely notification of any changes in the project and any meetings about the project.
2. Current farm operators should be allowed to continue farming the affected land until it is acquired for the proposed project.
3. The county conservationists should be consulted to ensure that construction proceeds in a manner that minimizes crop damage, soil compaction, soil erosion, drainage problems on adjacent farmland.

APPENDICES

The information provided in this section includes summaries and interpretations of some of the statutes associated with the acquisition of farmland for public projects. It serves as a reference and should not be considered an exhaustive summary of the statutes or your rights. It is not a substitute for legal advice. In the event of any conflict between the information summarized below and the statutes, the statutes are controlling.

Appendix I: Agricultural Impact Statements

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) is required to prepare an Agricultural Impact Statement (AIS) whenever more than five acres of land from at least one farm operation will be acquired for a public project if the agency acquiring the land has the authority to use eminent domain for the acquisition(s). The DATCP has the option to prepare an AIS for projects affecting five or fewer acres from each farm. An AIS would be prepared in such a case if the proposed project would have significant effects on a farm operation. The agency proposing the acquisition(s) is required to provide the DATCP with the details of the project and acquisition(s). After receiving the needed information, DATCP has 60 days to analyze the project's effects on farm operations, make recommendations about it and publish the AIS. DATCP will provide copies of the AIS to affected farmland owners, various state and local officials, local media and libraries, and any other individual or group who requests a copy. Thirty days after the date of publication, the proposing agency may begin negotiating with the landowner(s) for the property.

Section 32.035 of the Wisconsin Statutes: Agricultural impact statement.

(1) Definitions. In this section:

(a) "Department" means department of agriculture, trade and consumer protection.

(b) "Farm operation" means any activity conducted solely or primarily for the production of one or more agricultural commodities resulting from an agricultural use, as defined in s. 91.01 (1), for sale and home use, and customarily producing the commodities in sufficient quantity to be capable of contributing materially to the operator's support.

(2) EXCEPTION. This section shall not apply if an environmental impact statement under s. 1.11 is prepared for the proposed project and if the department submits the information required under this section as part of such statement or if the condemnation is for an easement for the purpose of constructing or operating an electric transmission line, except a high voltage transmission line as defined in s. 196.491(1)(f).

(3) PROCEDURE. The condemnor shall notify the department of any project involving the actual or potential exercise of the powers of eminent domain affecting a farm operation. If the condemnor is the department of natural resources, the notice required by this subsection shall be given at the time that permission of the senate and assembly committees on natural resources is sought under s. 23.09(2)(d) or 27.01(2)(a). To prepare an agricultural impact statement under this section, the department may require the condemnor to compile and submit information about an affected farm operation. The department shall charge the condemnor a fee approximating the actual costs of preparing the statement. The department may not publish the statement if the fee is not paid.

(4) IMPACT STATEMENT. (a) When an impact statement is required; permitted. The department shall prepare an agricultural impact statement for each project, except a project under ch. 81 or a project located entirely within the boundaries of a city or village, if the project involves the actual or potential exercise of the powers of eminent domain and if any interest in

more than 5 acres from any farm operation may be taken. The department may prepare an agricultural impact statement on a project located entirely within the boundaries of a city or village or involving any interest in 5 or fewer acres of any farm operation if the condemnation would have a significant effect on any farm operation as a whole.

(b) *Contents.* The agricultural impact statement shall include:

1. A list of the acreage and description of all land lost to agricultural production and all other land with reduced productive capacity, whether or not the land is taken.
2. The department's analyses, conclusions and recommendations concerning the agricultural impact of the project.

(c) *Preparation time; publication.* The department shall prepare the impact statement within 60 days of receiving the information requested from the condemnor under sub. (3). The department shall publish the statement upon receipt of the fee required under sub. (3).

(d) *Waiting period.* The condemnor may not negotiate with an owner or make a jurisdictional offer under this subchapter until 30 days after the impact statement is published.

(5) **PUBLICATION.** Upon completing the impact statement, the department shall distribute the impact statement to the following:

- (a) The governor's office.
- (b) The senate and assembly committees on agriculture and transportation.
- (c) All local and regional units of government which have jurisdiction over the area affected by the project. The department shall request that each unit post the statement at the place normally used for public notice.
- (d) Local and regional news media in the area affected.
- (e) Public libraries in the area affected.
- (f) Any individual, group, club or committee which has demonstrated an interest and has requested receipt of such information.
- (g) The condemnor.

Appendix II: Eminent Domain

Fair compensation for a partial taking of property under eminent domain is the larger of two figures: (1) the fair market value of the acquired property or (2) the fair market value of the entire parcel before the acquisition minus the fair market value of the remaining parcel. Compensation will be paid for the land acquired, any improvements acquired (structures, fencing, etc.), loss of access, loss of a use of this property, and damages resulting from severance of the property (including land and improvements). The condemnor may provide compensation for increased travel distances.

In addition to other compensation, a condemnor is required to make a payment of \$50,000 or less to any displaced farm or business owner who has owned the property for at least one year and who purchases a comparable replacement farm or business within two years of the acquisition. The amount of this payment would include any additional amount of money needed to equal the reasonable cost of a replacement farm or business, any increased interest or debt service charges, and closing costs. Displaced renters may also receive compensation if they rent or lease a comparable replacement farm or business within two years of the acquisition. If the displaced tenant rents or leases a comparable farm or business, the payment would include the amount needed to rent the replacement property for four years. This payment would not exceed \$30,000. If the renter decides to purchase a comparable farm or business, the payment would be equal to the rental or lease of that property for four years plus closing fees.

If a project would displace any person, business, or farm operation, the condemnor must file and have approved a written relocation payment plan and a relocation assistance service plan with the Department of Commerce. The condemnor must determine the relocation payment, assist displaced persons, businesses and farm operations to find comparable replacement properties, provide information about any government assistance to displaced persons, and coordinate the displacement with other project activities in a timely manner to avoid causing hardship

Section 32.09 of the Wisconsin Statutes describes the compensation provided for property acquisition and certain damages:

(6) In the case of a partial taking of property other than an easement, the compensation to be paid by the condemnor shall be the greater of either the fair market value of the property taken as of the date of evaluation or the sum determined by deducting from the fair market value of the whole property immediately before the date of evaluation, the fair market value of the remainder immediately after the date of evaluation, assuming the completion of the public improvement and giving effect, without allowance of offset for general benefits, and without restriction because of enumeration but without duplication, to the following items of loss or damage to the property where shown to exist:

- (a) Loss of land including improvements and fixtures actually taken.
- (b) Deprivation or restriction of existing right of access to highway from abutting

land, provided that nothing herein shall operate to restrict the power of the state or any of its subdivisions or any municipality to deprive or restrict such access without compensation under any duly authorized exercise of the police power.

- (c) Loss of air rights.
- (d) Loss of a legal nonconforming use.
- (e) Damages resulting from actual severance of land including damages resulting from severance of improvements or fixtures and proximity damage to improvements remaining on condemnee's land. In determining severance damages under this paragraph, the condemnor may consider damages which may arise during construction of the public improvement, including damages from noise, dirt, temporary interference with vehicular or pedestrian access to the property and limitations on use of the property. The condemnor may also consider costs of extra travel made necessary by the public improvement based on the increased distance after construction of the public improvement necessary to reach any point on the property from any other point on the property.
- (f) Damages to property abutting on a highway right-of-way due to change of grade where accompanied by a taking of land.
- (g) Cost of fencing reasonably necessary to separate land taken from remainder of condemnee's land, less the amount allowed for fencing taken under par. (a), but no such damage shall be allowed where the public improvement includes fencing of right of way without cost to abutting lands.

Section 32.19 of the *Wisconsin Statutes* outlines payments to be made to displaced tenant-occupied businesses and farm operations.

(4m) BUSINESS OR FARM REPLACEMENT PAYMENT. (a) *Owner-occupied business or farm operation.* In addition to amounts otherwise authorized by this subchapter, the condemnor shall make a payment, not to exceed \$50,000, to any owner displaced person who has owned and occupied the business operation, or owned the farm operation, for not less than one year prior to the initiation of negotiations for the acquisition of the real property on which the business or farm operation lies, and who actually purchases a comparable replacement business or farm operation for the acquired property within two years after the date the person vacates the acquired property or receives payment from the condemnor, whichever is later. An owner displaced person who has owned and occupied the business operation, or owned the farm operation, for not less than one year prior to the initiation of negotiations for the acquisition of the real property on which the business or farm operation lies may elect to receive the payment under par. (b) 1. in lieu of the payment under this paragraph, but the amount of payment under par. (b) 1. to such an owner displaced person may not exceed the amount the owner displaced person is eligible to receive under this paragraph. The additional payment under this paragraph shall include the following amounts:

1. The amount, if any, which when added to the acquisition cost of the property, other than any dwelling on the property, equals the reasonable cost of a comparable replacement

business or farm operation for the acquired property, as determined by the condemnor.

2. The amount, if any, which will compensate such owner displaced person for any increased interest and other debt service costs which such person is required to pay for financing the acquisitions of any replacement property, if the property acquired was encumbered by a bona fide mortgage or land contract which was a valid lien on the property for at least one year prior to the initiation of negotiations for its acquisition. The amount under this subdivision shall be determined according to rules promulgated by the department of commerce.

3. Reasonable expenses incurred by the displaced person for evidence of title, recording fees and other closing costs incident to the purchase of the replacement property, but not including prepaid expenses.

(b) *Tenant-occupied business or farm operation.* In addition to amounts otherwise authorized by this subchapter, the condemnor shall make a payment to any tenant displaced person who has owned and occupied the business operation, or owned the farm operation, for not less than one year prior to initiation of negotiations for the acquisition of the real property on which the business or operation lies or, if displacement is not a direct result of acquisition, such other event as determined by the department of commerce, and who actually rents or purchases a comparable replacement business or farm operation within 2 years after the date the person vacates the property. At the option of the tenant displaced person, such payment shall be either:

1. The amount, not to exceed \$30,000, which is necessary to lease or rent a comparable replacement business or farm operation for a period of 4 years. The payment shall be computed by determining the average monthly rent paid for the property from which the person was displaced for the 12 months prior to the initiation of negotiations or, if displacement is not a direct result of acquisition, such other event as determined by the department of commerce and the monthly rent of a comparable replacement business or farm operation and multiply the difference by 48; or

2. If the tenant displaced person elects to purchase a comparable replacement business or farm operation, the amount determined under subd. 1 plus expenses under par. (a) 3.

(5) EMINENT DOMAIN. Nothing in this section or ss. 32.25 to 32.27 shall be construed as creating in any condemnation proceedings brought under the power of eminent domain, any element of damages.

Section 32.25 of the *Wisconsin Statutes* delineates steps to be followed when displacing persons, businesses, and farm operations.

(1) Except as provided under sub.(3) and s. 85.09 (4m), no condemnor may proceed with any activity that may involve the displacement of persons, business concerns or farm operations until the condemnor has filed in writing a relocation payment plan and relocation assistance service plan and has had both plans approved in writing by the department of commerce.

(2) The relocation assistance service plan shall contain evidence that the condemnor has taken reasonable and appropriate steps to:

(a) Determine the cost of any relocation payments and services or the methods that are

going to be used to determine such costs.

(b) Assist owners of displaced business concerns and farm operations in obtaining and becoming established in suitable business locations or replacement farms.

(c) Assist displaced owners or renters in the location of comparable dwellings.

(d) Supply information concerning programs of federal, state and local governments which offer assistance to displaced persons and business concerns.

(e) Assist in minimizing hardships to displaced persons in adjusting to relocation.

(f) Secure, to the greatest extent practicable, the coordination of relocation activities with other project activities and other planned or proposed governmental actions in the community or nearby areas which may affect the implementation of the relocation program.

(g) Determine the approximate number of persons, farms or businesses that will be displaced and the availability of decent, safe and sanitary replacement housing.

(h) Assure that, within a reasonable time prior to displacement, there will be available, to the extent that may reasonably be accomplished, housing meeting the standards established by the department of commerce for decent, safe and sanitary dwellings. The housing, so far as practicable, shall be in areas not generally less desirable in regard to public utilities, public and commercial facilities and at rents or prices within the financial means of the families and individuals displaced and equal in number to the number of such displaced families or individuals and reasonably accessible to their places of employment.

(i) Assure that a person shall not be required to move from a dwelling unless the person has had a reasonable opportunity to relocate to a comparable dwelling.

(3)(a) Subsection (1) does not apply to any of the following activities engaged in by a condemnor:

1. Obtaining an appraisal of property.

2. Obtaining an option to purchase property, regardless of whether the option specifies the purchase price, if the property is not part of a program or project receiving federal financial assistance.

Appendix III: Official Mapping

84.295(10) Establishing locations and right-of-way widths for future freeways or expressways.

(a) Where, as the result of its investigations and studies, the department finds that there will be a need in the future for the development and construction of segments of a state trunk highway as a freeway or expressway, and where the department determines that in order to prevent conflicting costly economic development on areas of lands to be available as rights-of-way when needed for such future development, there is need to establish, and to inform the public of, the approximate location and widths of rights-of-way needed, it may proceed to establish such location and the approximate widths of rights-of-way in the following manner. It shall hold a public hearing in the matter in a courthouse or other convenient public place in or near the region to be affected by the proposed change, which public hearing shall be advertised and held as are state trunk highway change hearings. The department shall consider and evaluate the testimony presented at the public hearing. It may make a survey and prepare a map showing the location of the freeway or expressway and the approximate widths of the rights-of-way needed for the freeway or expressway, including the right-of-way needed for traffic interchanges with other highways, grade separations, frontage roads and other incidental facilities and for the alteration or relocation of existing public highways to adjust traffic service to grade separation structures and interchange ramps. The map shall also show the existing highways and the property lines and record owners of lands needed. Upon approval of the map by the department, a notice of such action and the map showing the lands or interests therein needed in any county shall be recorded in the office of the register of deeds of such county. Notice of the action and of the recording shall be published as a class 1 notice, under ch. 985, in such county, and within 60 days after recording, notice of the recording shall be served by registered mail on the owners of record on the date of recording. With like approval, notice and publications, and notice to the affected record owners, the department may from time to time supplement or change the map.

(b) After such location is thus established, within the area of the rights-of-way as shown on the map or in such proximity thereto as to result in consequential damages when the right-of-way is acquired, no one shall erect or move in any additional structure, nor rebuild, alter or add to any existing structure, without first giving to the department by registered mail 60 days' notice of such contemplated construction, alteration or addition describing the same, provided that this prohibition and requirement shall not apply to any normal or emergency repairs or replacements which are necessary to maintain an existing structure or facility in approximately its previously existing functioning condition. When the right-of-way is acquired, no damages shall be allowed for any construction, alterations or additions in violation of this paragraph.

(c) Without limiting any authority otherwise existing, any of the rights-of-way needed may be acquired at any time by the state or by the county or municipality in which such freeway or expressway is located. If one owner's contiguous land is acquired to an extent which is less than

the total thereof shown on the map as needed, consequential damages to the portion not acquired shall be allowed if found to exist.

History: 1971 c. 252; 1975 c. 425; 1977 c. 29 ss. 945, 1654 (3); (8) (a); 1983 a. 532 s. 36; 1993 a. 301, 490; 1999 a. 150 s. 672; 2013 a. 12, 20.

Appendix IV: General Criteria for the Classification of Important Farmlands

The following discussion summarizes the USDA Natural Resources Conservation Service's written criteria for classifying farmlands, greater detail can be obtained from the Natural Resources Conservation Service office located at 6515 Watts Road, Suite 200, Madison, WI 53719-2726.

Prime Farmland

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables.

Additional Farmland of Statewide Importance

This is land, in addition to prime and unique farmland, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. Criteria for defining and delineating this land are to be determined by the appropriate state agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. In some states, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by state law.

Additional Farmland of Local Importance

In some local areas there is concern for certain additional farmland for the production of food, feed, fiber, forage, and oilseed crops, even though these lands are not identified as having national or statewide importance. Where appropriate, these lands are to be identified by the local agency or agencies concerned. In places, additional farmlands of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Appendix V: NRCS Soil Capability Classes

The following discussion summarizes the USDA Natural Resources Conservation Service's written criteria for land capability classification, greater detail can be obtained from the Natural Resources Conservation Service office located at 6515 Watts Road, Suite 200, Madison, WI 53719-2726.

Land suited to Cultivation and Other Uses:

Class I soils have few limitations that restrict their use.

Class II soils have some limitations that reduce the choice of plants or require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.

Class IV soils have very severe limitations that restrict the choice of plants , require very careful management, or both.

Land Limited in Use-Generally Not Suited to Cultivation

Class V soils have little or no erosion hazard but have other limitations impractical to remove that limit their use largely to pasture, range, woodland, or wildlife food and cover.

Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife food and cover.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to grazing, woodland, or wildlife.

Class VIII soils and landforms have limitations that preclude their use for commercial plant production.

Soil Capability Subclasses

A subclass is a group of capability units within a class which has the dominant soil or climatic limitations for agricultural use. Capability Class I has no subclasses. There are four subclasses, designated by letter symbols and defined as follows:

- e Erosion susceptibility is the dominant problem or hazard. Both erosion susceptibility and past erosion damage are major soil factors for placement in this

subclass.

- s** Soil limitations within the rooting zone, such as shallowness of rooting zones, stones, low moisture-holding capacity, low fertility that is difficult to correct, and salinity or sodium, are dominant.
- w** Excess water is the dominant hazard or limitation. Poor soil drainage, wetness, high water table, and overflow are the criteria for placing soils in this subclass.
- c** Climate (temperature or lack of moisture) is the only major hazard or limitation.

Appendix VI: Drainage

Roads and railroad grades must be constructed and maintained so they do not impede the general flow of surface water in an unreasonable manner. Roads and railroad grades must be constructed with adequate ditches, culverts and other facilities to maintain a practical drainage pattern.

The following specifications and statutes cited address some of the impacts which could potentially occur during and after the proposed highway project. The statutes cited can be found in full in the following: Wisconsin Statutes at <https://docs.legis.wisconsin.gov/statutes/statutes/88/VIII/87>. WisDOT's specifications can be found in 2012 Standard Specifications, State of Wisconsin, Department of Transportation at <http://roadwaystandards.dot.wi.gov/standards/stdnspec/index.htm>. DATCP recommends that farmland owners concerned about drainage should consult these texts for further information.

Section 88.87(2) of the Wisconsin Statutes describes regulations concerning rights of drainage:

- (a) Whenever any county, town, city, village, railroad company or the department of transportation has heretofore constructed and now maintains or hereafter constructs and maintains any highway or railroad grade in or across any marsh, lowland, natural depression, natural watercourse, natural or man-made channel or drainage course, it shall not impede the general flow of surface water or stream water in any unreasonable manner so as to cause either an unnecessary accumulation of waters flooding or water-soaking uplands or an unreasonable accumulation and discharge of surface water flooding or water-soaking lowlands. All such highways and railroad grades shall be constructed with adequate ditches, culverts, and other facilities as may be feasible, consonant with sound engineering practices, to the end of maintaining as far as practicable the original flow lines of drainage. This paragraph does not apply to highways or railroad grades used to hold and retain water for cranberry or conservation management purposes.
- (b) Drainage rights and easements may be purchased or condemned by the public authority or railroad company having control of the highway or railroad grade to aid in the prevention of damage to property owners which might otherwise occur as a result of failure to comply with par. (a).
- (c) If a city, village, town, county, or railroad company or the department of transportation constructs and maintains a highway or railroad grade not in accordance with par. (a), any property owner damaged by the highway or railroad grade may, within 3 years after the alleged damage occurred, file a claim with the appropriate governmental agency or railroad company. The claim shall consist of a sworn statement of the alleged faulty construction and a description, sufficient to determine the location of the lands, of the lands alleged to have been damaged by flooding or water-soaking. Within 90 days after the filing of that claim, the governmental agency or railroad company shall either correct the cause of the water damage, acquire rights to

use the land for drainage or overflow purposes, or deny the claim. If the agency or company denies the claim or fails to take any action within 90 days after the filing of the claim, the property owner may bring an action in inverse condemnation under ch. 32 or sue for such other relief, other than damages, as may be just and equitable.

WisDOT specification 205.3.3 further describes its policies concerning drainage:

- (1) During construction, maintain roadway, ditches, and channels in a well-drained condition at all times by keeping the excavation areas and embankments sloped to the approximate section of the ultimate earth grade. Perform blading or leveling operations when placing embankments and during the process of excavation except if the excavation is in ledge rock or areas where leveling is not practical or necessary. If it is necessary in the prosecution of the work to interrupt existing surface drainage, sewers, or under drainage, provide temporary drainage until completing permanent drainage work.
- (2) If storing salvaged topsoil on the right-of-way during construction operations, stockpile it to preclude interference with or obstruction of surface drainage.
- (3) Seal subgrade surfaces as specified for subgrade intermediate consolidation and trimming in 207.3.9.
- (4) Preserve, protect, and maintain all existing tile drains, sewers, and other subsurface drains, or parts thereof, that the engineer judges should continue in service without change. Repair, at no expense to the department, all damage to these facilities resulting from negligence or carelessness of the contractor's operations.

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HILL FARMS

*WisDOT LIBRARY
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State of Wisconsin
Department of Agriculture,
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Appendix H

Environmental Justice

Table 1. Population, Households, and Race - 2010 Census

Demographic Group	State of Wisconsin		St. Croix County		City of Hudson		Town of Hudson		Tract 1202.02, Block Group 1, Block 1004		Tract 1202.02, Block Group 1, Block 1010		Tract 1209.04, Block Group 2, Block 2001		Tract 1209.04, Block Group 2, Block 2003	
	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.
Households	2,279,768	N/A	31,799	N/A	5,287	N/A	2,703	N/A	100	N/A	107	N/A	24	N/A	3	N/A
Population	5,686,986	100%	84,345	100%	12,719	100%	8,461	100%	362	100%	370	100%	76	100%	7	100%
Race:																
WHITE	4,738,411	83.3%	79,895	94.7%	11,833	93.0%	8,001	94.6%	341	94.2%	348	94.1%	72	94.7%	7	100.0%
NON-WHITE	948,575	16.7%	4,450	5.3%	886	7.0%	460	5.4%	21	5.8%	22	5.9%	4	5.3%	0	0.0%
- <i>Black</i>	359,148	6.3%	552	0.7%	119	0.9%	34	0.4%	1	0.3%	4	1.1%	0	0.0%	0	0.0%
- <i>AIAN</i> ⁽¹⁾	54,526	1.0%	313	0.4%	43	0.3%	29	0.3%	3	0.8%	6	1.6%	0	0.0%	0	0.0%
- <i>Asian</i>	129,234	2.3%	900	1.1%	175	1.4%	169	2.0%	11	3.0%	0	0.0%	0	0.0%	0	0.0%
- <i>NHPI</i> ⁽²⁾	1,827	0.0%	23	0.0%	4	0.0%	1	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- <i>Other Race</i>	135,867	2.4%	483	0.6%	88	0.7%	23	0.3%	1	0.3%	0	0.0%	0	0.0%	0	0.0%
- <i>Two or More Races</i>	267,973	4.7%	2,179	2.6%	457	3.6%	204	2.4%	5	1.4%	12	3.2%	4	5.3%	0	0.0%
Ethnicity:																
· Hispanic or Latin Origin	336,056	5.9%	1,692	2.0%	347	2.7%	126	1.5%	2	0.6%	9	2.4%	0	0.0%	0	0.0%
· Non-Hispanic or Latin Origin	5,350,930	94.1%	82,653	98.0%	12,372	97.3%	8,335	98.5%	360	99.4%	361	97.6%	76	100.0%	7	100.0%

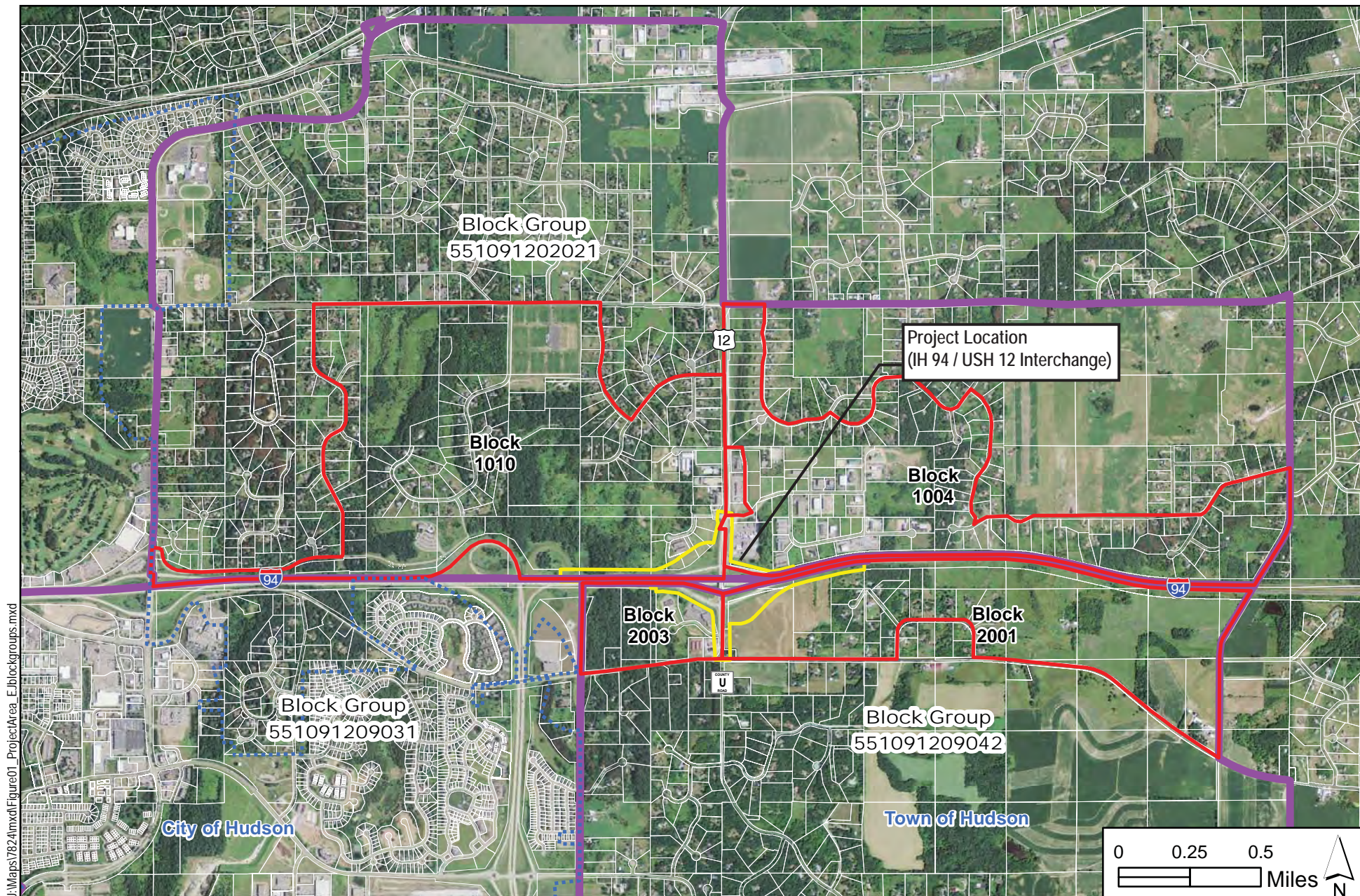
Source: Year 2010 U.S. Census Data SF 1 (Tables QT-P4 and QT-P11)

(1) AIAN = American Indian or Alaska Native (2) NHPI = Native Hawaiian & Other Pacific Islander

Table 2. Income and Poverty - 2008 - 2012 American Community Survey (ACS)

Demographic Group	State of Wisconsin		St. Croix County		City of Hudson		Town of Hudson		Tract 1202.02, Block Group 1		Tract 1209.03, Block Group 1		Tract 1209.04, Block Group 2	
	Number	MOE (% of Estimate)	Number	MOE	Number	MOE	Number	MOE	Number	MOE	Number	MOE	Number	MOE
Population	5,687,219	*****	84,363	*****	12,732	0.2%	8,454	0.3%	2,089	13.0%	4,801	12.1%	1,031	23.7%
Number of Households	2,286,339	0.4%	32,026	1%	5,608	4%	2,720	5%	655	13%	2,148	10%	396	21%
Number of Families	1,476,851	0.4%	23,322	2%	3,363	6%	2,432	4%	619	N/A	1,239	N/A	294	N/A
Poverty Status														
Percent of households below poverty (income in 2012 below poverty level)	11.8%	1.2%	7.5%	11%	8.5%	35%	2%	70%	6%	90%	6%	72%	7.6%	67%
Percent of family households below poverty (income in 2012 below poverty level)	8.4%	1.9%	5.4%	16%	6.0%	55.2%	1.0%	112.0%	2.6%	143.8%	4.2%	117.3%	10.2%	66.7%
Additional Income Measures														
Median household income (2012 dollars)	\$52,627	0.3%	\$68,139	2%	\$60,833	6%	\$113,056	11%	\$96,518	37%	\$52,890	13%	\$96,406	36%
Median family income (2012 dollars)	\$66,415	0.4%	\$80,527	2%	\$75,512	11%	\$118,889	8%	\$115,511	37%	\$62,464	21%	\$113,938	35%
Per capita income (2012 dollars)	\$27,426	0.4%	\$31,805	2%	\$33,321	7%	\$39,088	7%	\$34,030	13%	\$33,637	15%	\$44,326	21%

Source: Year 2008 -2012 American Community Survey (Tables S1101, S1702, B17017, B01001, B19013, B19113, B19301, B10010)



Environmental Justice Analysis Area

IH 94 Hudson Area Interchange Study (Project ID 1020-00-06)

Wisconsin Department of Transportation

St. Croix County, Wisconsin

Figure H-1

Appendix I

Mobile Source Air Toxics (MSAT) Analysis

Mobile Source Air Toxics (MSAT) Analysis

IH 94 / USH 12 Interchange

ID 1020-00-06

Wisconsin Department of Transportation – Northwest Region

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/iris/>). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While the Federal Highway Administration (FHWA) considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

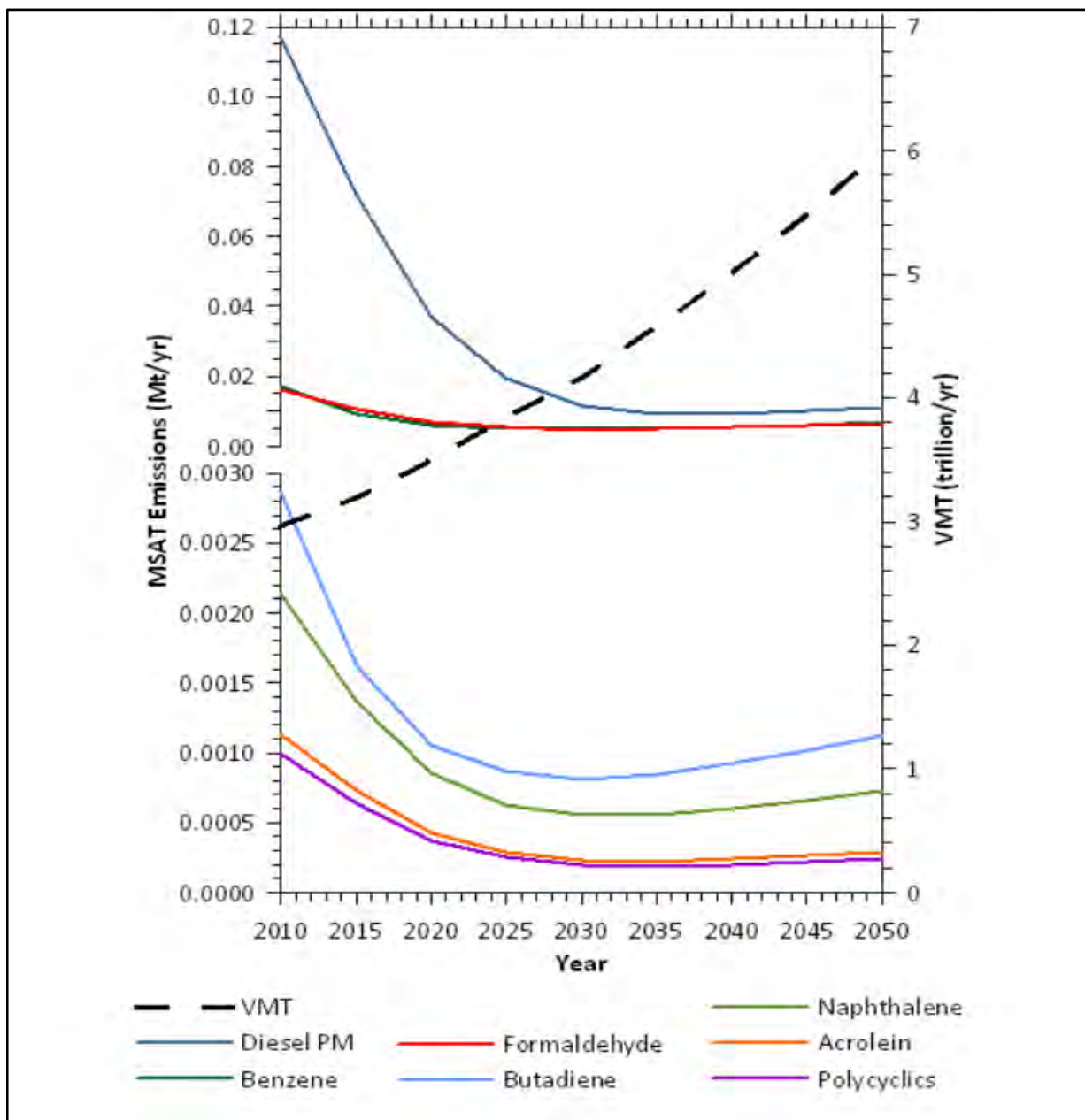
Motor Vehicle Emissions Simulator (MOVES)

According to EPA, MOVES improves upon the previous MOBILE model in several key aspects: MOVES is based on a vast amount of in-use vehicle data collected and analyzed since the latest release of MOBILE, including millions of emissions measurements from light-duty vehicles. Analysis of this data enhanced EPA's understanding of how mobile sources contribute to emissions inventories and the relative effectiveness of various control strategies. In addition, MOVES accounts for the significant effects that vehicle speed and temperature have on PM emissions estimates, whereas MOBILE did not. MOVES2010b includes all air toxic pollutants in NATA that are emitted by mobile sources. EPA has incorporated more recent data into MOVES2010b to update and enhance the quality of MSAT emission estimates. These data reflect advanced emission control technology and modern fuels, plus additional data for older technology vehicles.

Based on an FHWA analysis using EPA's MOVES2010b model, as shown in Exhibit 1, even if vehicle-miles travelled (VMT) increases by 102 percent as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Exhibit 1

National MSAT Emission Trends 1999 - 2050 For Vehicles Operating On Roadways Using EPA's MOVES2010b Model



Source: EPA MOVES2010b model runs conducted during May - June 2012 by FHWA.

http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/nmsatetrends.cfm

Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

The implications of MOVES on MSAT emissions estimates compared to MOBILE are: lower estimates of total MSAT emissions; significantly lower benzene emissions; significantly higher diesel PM emissions, especially for lower speeds. Consequently, diesel PM is projected to be the dominant component of the emissions total.¹

MSAT Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

NEPA Context

The NEPA requires, to the fullest extent possible, that the policies, regulations, and laws of the Federal Government be interpreted and administered in accordance with its environmental protection goals. The NEPA also requires Federal agencies to use an interdisciplinary approach in planning and decision-making for any action that adversely impacts the environment. The NEPA requires and FHWA is committed to the examination and avoidance of potential impacts to the natural and human environment when considering approval of proposed transportation projects. In addition to evaluating the potential environmental effects, we must also take into account the need for safe and efficient transportation in reaching a decision that is in the best overall public interest. The FHWA policies and procedures for implementing NEPA are contained in regulation at 23 CFR Part 771.

Incomplete or Unavailable Information for Project Specific MSAT Health Impacts Analysis

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking. The FHWA has prepared the following summary to demonstrate current limitations in evaluating MSAT effects.

¹ Source: Federal Highway Administration. December 6, 2012. Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA available at http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, <http://www.epa.gov/iris/>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile Source Air Toxic analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (<http://pubs.healtheffects.org/view.php?id=282>). As a result, there is no national consensus on

air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI (<http://pubs.health-effects.org/getfile.php?u=395>) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Qualitative Analysis

For each alternative in this Environmental Assessment (EA), the amount of MSAT emitted would be proportional to the average daily traffic, or ADT, assuming that other variables such as fleet mix are the same for each alternative. Because the total ADT estimated along IH 94, USH 12, CTH U, and the IH 94 / USH 12 interchange ramps are essentially the same for the No Build and Build Alternatives, neither alternative is expected to result in appreciably higher levels of MSAT emissions. Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, traffic growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for traffic growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

The proposed interchange ramps and loops contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby businesses; therefore, under the Build Alternative there may be localized areas where ambient concentrations of MSAT would be higher than No Build Alternative. The localized differences in MSAT concentrations would likely be most pronounced adjacent to the northwest and southeast quadrants of the IH 94 / USH 12 interchange. However, the magnitude and the duration of these potential increases cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. Further, under all alternatives, overall future MSAT are expected to be substantially lower than today due to implementation of EPA's vehicle and fuel regulations.

In sum, under all alternatives in the design year it is expected there would be very little difference in MSAT emissions in the study area based on changes in ADT. There could be increases in MSAT levels in a few localized areas where ADT increases. However, EPA's vehicle and fuel regulations will bring about significantly lower MSAT levels for the area in the future than today.