

**ENVIRONMENTAL ASSESSMENT/
ENVIRONMENTAL ASSESSMENT WORKSHEET**

**I-94 UBOL Resurfacing Maple Grove to Rogers and Brockton Interchange
State Project: S.P. 2780-97 (I-94 Resurfacing)
229-010-001 (Brockton Interchange)
Minnesota Project: Not yet available**

**From the I-494/I-694 Interchange in Maple Grove to Trunk Highway (TH) 101 in Rogers
and from CSAH 81 to Brockton Lane in Dayton**

**In Maple Grove, Dayton, and Rogers, in the County of Hennepin, in the State of Minnesota
Sections 5, 6, 8, 9, 16, 17, 21, 22, 26, 27 Township 119N Range 22W
Section 31 Township 120N R22W
Sections 14, 23, 24, 25, 36 Township 120N R 23W**

Submitted pursuant to 42 U.S.C. 4332 and M.S. 116D

**By: U.S. Department of Transportation, Federal Highway Administration, and Minnesota
Department of Transportation**

for

Resurfacing of an existing 9.6 miles of interstate highway between the I-494/I-694 interchange in Maple Grove to TH 101 in Rogers with an unbonded overlay (UBOL). Construction of one added travel lane in each direction between TH 610 and TH 101. Construction of a new interchange in Dayton. Construction of a commercial vehicle inspection site in the westbound direction in Rogers. Pavement resurfacing and capacity expansion at the Elm Creek Rest Area. Associated road and trail improvements to support the interchange and I-94 ramp resurfacing within the project area.

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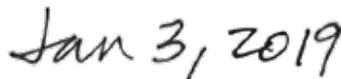
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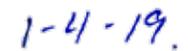


Date

Approved by:



MnDOT – Chief Environmental Officer



Date

Approved by:



FHWA – Project Development Engineer



Date

Figure 1: Project Location Map

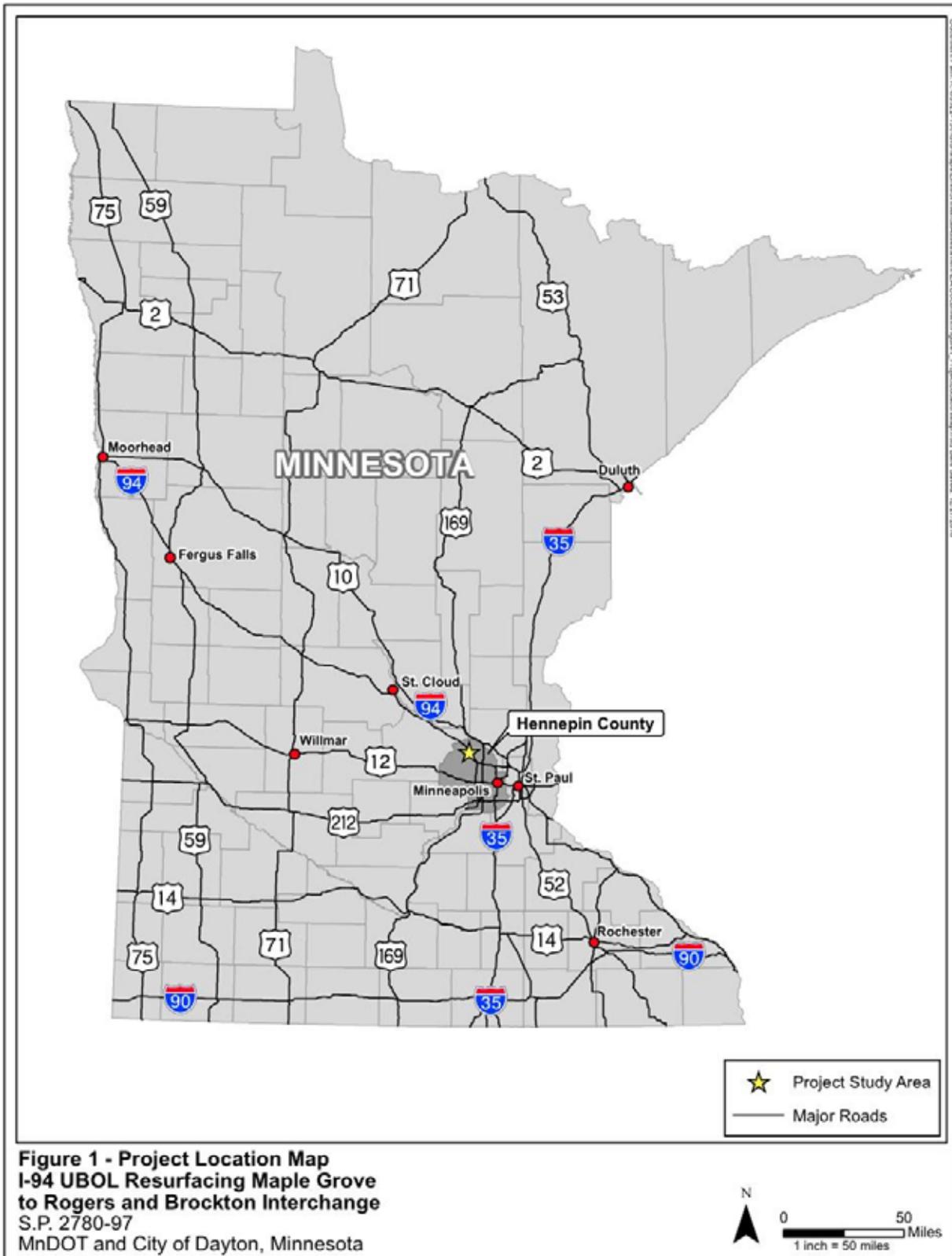


Figure 2 a: USGS Project Location Map

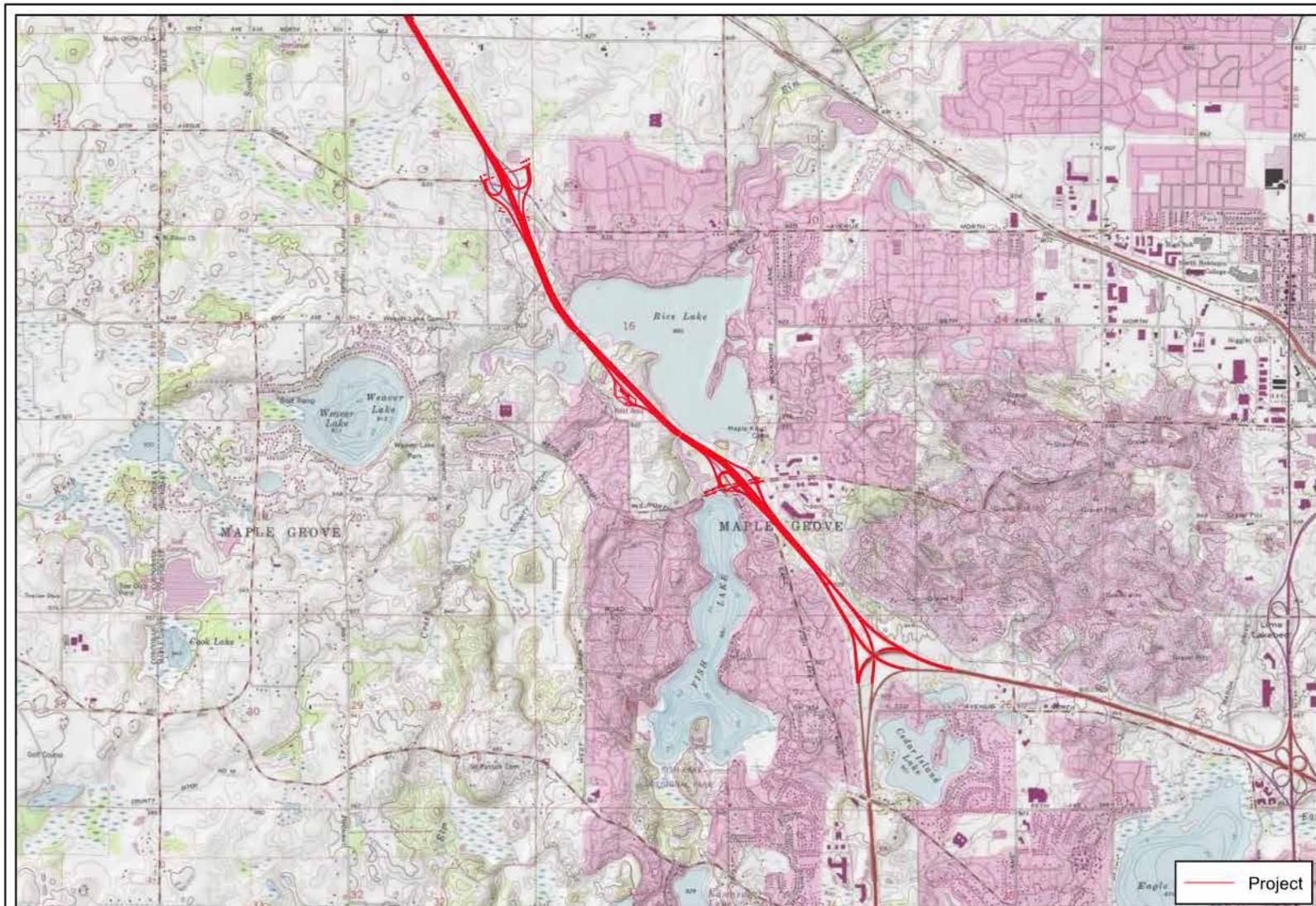


Figure 2A - USGS Project Location Map
I-94 UBOL Resurfacing Maple Grove to Rogers and Brockton Interchange
S.P. 2780-97
MnDOT and City of Dayton, Minnesota

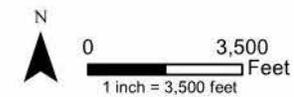


Figure 2 b: USGS Project Location Map

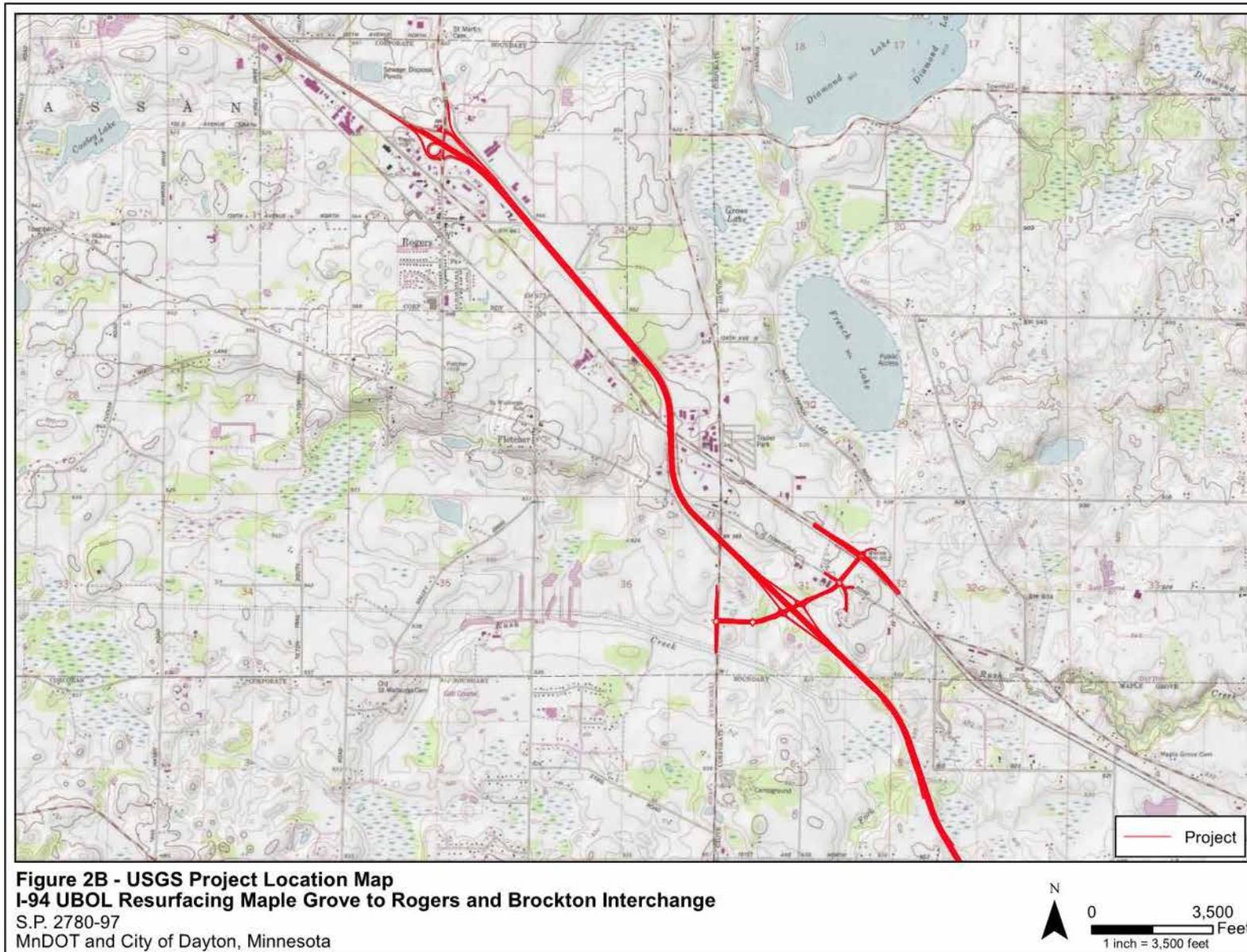


Figure 3: Project Study Area Map

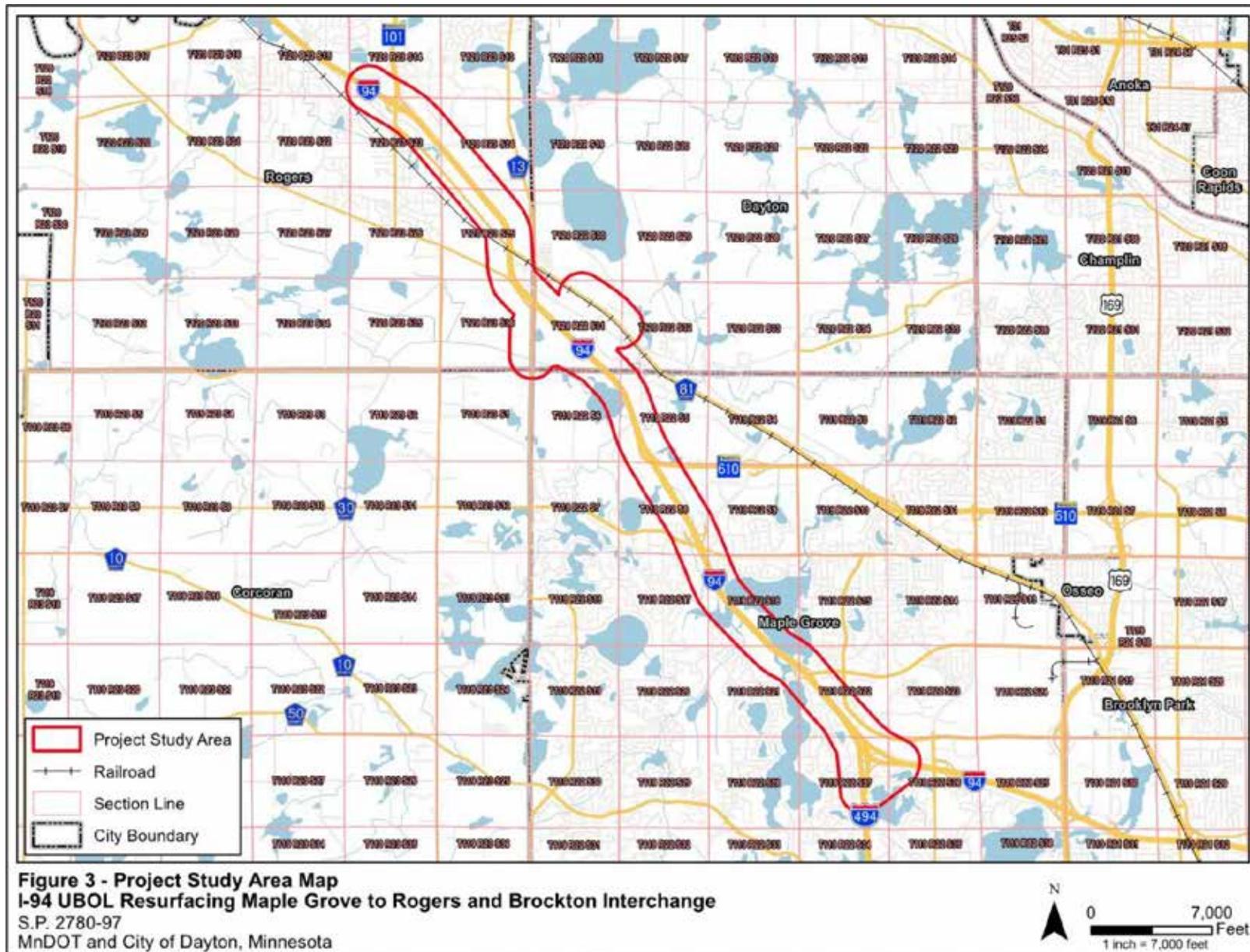


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Acronyms and Abbreviations

ACS	American Community Survey
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
APS	Accessible Pedestrian Signals
AST	Aboveground Storage Tanks
BCA	Benefit-Cost Analysis
BMPs	Best Management Practices
BNSF	BNSF Railway Company
CAAA	Clean Air Act Amendment
CAMP	Conflict Assessment and Management Process
CD	County Ditch
CPR	Concrete Paving Rehabilitation
CR	County Road
CRU	Minnesota Department of Transportation – Cultural Resources Unit
CSAH	County State Aid Highway
CWA	Clean Water Act
DDI	Diverging Diamond Interchange
DNR	Minnesota Department of Natural Resources
dB	Decibel
dBA	A-Weighted Decibels
DWSMA	Drinking Water Supply Management Area
EA	Environmental Assessment
EAW	Environmental Assessment Worksheet
ECWMC	Elm Creek Watershed Management Commission
EIS	Environmental Impact Statement
EJ	Environmental Justice
EPA	U.S. Environmental Protection Agency
EQB	Minnesota Environmental Quality Board
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	Findings of No Significant Impact
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GBV	Ground-Borne Vibration
HCCAADT	Heavy Commercial Annual Average Daily Traffic
HEI	Health Effects Institute
HPMA	Highway Pavement Management Application

Acronyms and Abbreviations

HMTA	Hazardous Materials Transportation Act
HSG	Hydrologic Soil Group
IAR	Interstate Access Request
IRC	Interregional Corridor
IRIS	Integrated Risk Information System
ITS	Intelligent Transportation Systems
JD	Jurisdictional Determination
LAWCON	Land and Water Conservation Fund Act of 1965
LGU	Local Government Unit
LOS	Level of Service
LRIP	Local Roadway Improvement Program
LUP	Limited Use Permits
LUST	Leaking Underground Storage Tank
MDH	Minnesota Department of Health
MEPA	Minnesota Environmental Policy Act
MERLA	Minnesota Environmental Response and Liability Act
MnDOT	Minnesota Department of Transportation
MnHPO	Minnesota Historic Preservation Office
MOVES	Motor Vehicle Emissions Simulator
MPCA	Minnesota Pollution Control Agency
mph	Miles Per Hour
M.S.	Minnesota Statute
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NATA	National Air Toxics Assessment
NEPA	National Environmental Policy Act
NHIS	Natural Heritage Information System
NO _x	Nitrous Oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
OES	Minnesota Department of Transportation – Office of Environmental Stewardship
OHW	Ordinary High Water
OSHA	Occupational Safety and Health Administration
PIP	Public Involvement Plan
PM	Particulate Matter
PMT	Project Management Team
POM	Polycyclic Organic Matter
ppb	Parts Per Billion

Acronyms and Abbreviations

PSC	Project Steering Committee
PWI	Public Waters Inventory
QBAA	Quaternary Buried Artesian Aquifer
ROW	Right of Way
RPZ	Runway Protection Zone
RQI	Ride Quality Index
SCWMC	Shingle Creek Watershed Management Commission
SEE	Social, Economic, and Environmental
SHPO	State Historic Preservation Office
SO _x	Sulfur Oxides
S.P.	State Project
SR	Surface Rating
SSTS	Subsurface Sewage Treatment Systems
STIP	State Transportation Improvement Program
SWPPP	Stormwater Pollution Prevention Plan
TAC	Technical Advisory Committee
TH	Trunk Highway
TMDL	Total Maximum Daily Load
UBOL	Unbonded Overlay
URA	Uniform Relocation Act
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Services
UST	Underground Storage Tank
VIC	Voluntary Investigation and Cleanup
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WCA	Wetland Conservation Act
WEIP	Weight Enforcement Investment Plan
WMA	Wildlife Management Areas
WPA	Waterfowl Production Areas

I. REPORT PURPOSE

This Environmental Assessment/Environmental Assessment Worksheet (EA/EAW) provides background information including:

- Need for the proposed project
- Alternatives considered
- Environmental impacts and mitigation
- Agency coordination and public involvement

This EA was prepared as a part of the National Environmental Policy Act (NEPA) process and Minnesota Environmental Policy Act (MEPA) process to fulfill requirements of both 42 USC 4332 and M.S. 116D. At the federal level, the EA is used to provide sufficient environmental documentation to determine the need for an Environmental Impact Statement (EIS) or that a Finding of No Significant Impact (FONSI) is appropriate. At the state level, the EA is used to provide sufficient environmental documentation to determine the need for a state EIS or that a Negative Declaration is appropriate.

At the state level, this document also serves as an Environmental Assessment Worksheet (EAW). Minnesota Rules 4410.1300 allows the EA to take the place of the EAW form, provided that the EA addresses each of the environmental effects identified in the EAW form. This EA includes each of the environmental effects identified in the EAW form.

The Minnesota Department of Transportation (MnDOT) is the proposer and Responsible Governmental Unit for this project. Preparation of an EAW is considered mandatory under Minnesota Rules 4410.4300 under the following subsection(s):

Highway Projects: 4410.4300, Subpart 22.B: The construction of additional travel lanes on an existing road for a length of one or more miles.

Highway Projects: 4410.4300, Subpart 22.C: The addition of one or more new interchanges to a completed limited access highway.

This document is made available for public review and comment in accordance with the requirements of 23 CFR 771.119 (d) and Minnesota Rules 4410.1500 through 4410.1600.

II. PURPOSE AND NEED FOR PROJECT

The Purpose and Need section defines the transportation problems that the project will address. It also helps decide where a project will begin and end by defining the “who, what, where, when, and why” of the transportation needs. The extent of the study limits for the needs assessment and traffic analysis for the I-94 UBOL project are from the I-494/I-694 interchange at the eastern limit of the project to just west of the TH 101 interchange at the western limit of the project, including the ramps along I-94 in this segment. The study limits for the new Brockton interchange/Dayton Parkway are between Brockton Lane on the west to CSAH 81 in the City of Dayton.

A. BACKGROUND

I-94 is a regionally important transportation corridor. It is designated by MnDOT as a high-priority interregional corridor (IRC) facility that carries substantial volumes of commercial, commuter, and recreational traffic. As part of the interstate system, I-94 is a high-speed, access-controlled freeway that carries the highest level of importance with respect to serving long-distance, through trips. I-94 connects the Minneapolis-St. Paul metropolitan area with portions of central and western Minnesota, continuing to North Dakota and Montana to the west. To the east of the Twin Cities, I-94 provides a long-distance connection to other major metropolitan areas including Milwaukee, Chicago, and Detroit. Within the project area, I-94 is a six-lane freeway facility that is aligned diagonally from northwest to southeast, passing through the cities of Rogers, Dayton, and Maple Grove (see **Figures 1–3**). Based on the 2017 MnDOT Traffic Volume Program data¹, existing traffic volumes (annual average daily traffic) along I-94 in the project area range from 97,000 to 117,000 vehicles per day (VPD), making it one of the busiest roadways in the region.

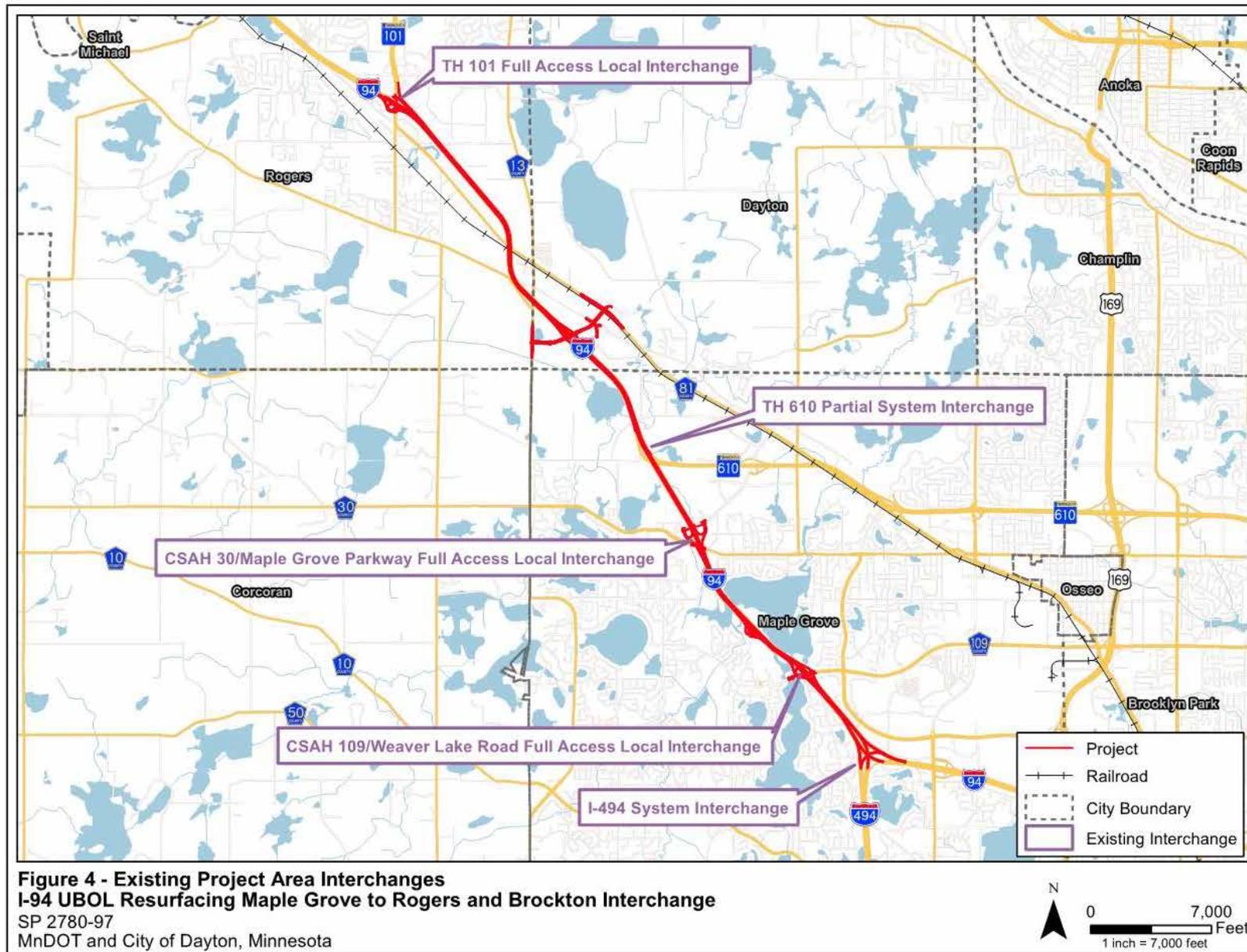
The project area has also seen substantial growth and development in recent years, and additional growth is anticipated over the next few decades. This growth has resulted in additional demand for access to I-94 along this corridor. Figure 4 shows all five interchanges within the project area. Currently, full local access to I-94 within the project area is limited to three locations.

- TH 101 interchange in Rogers
- CSAH 30/Maple Grove Parkway interchange in Maple Grove
- CSAH 109/Weaver Lake Road interchange in Maple Grove

In addition to its importance to commuters and residents in the project area, I-94 is an important part of the freight transportation network, providing a critical link for commerce to move goods between communities and regions. I-94 is designated as part of the National Highway System and the National Highway Freight Network as part of the Primary Freight Highway System. I-94 is commonly used for the transport of agricultural products as well as mining and construction materials (gravel, sand, steel, granite, etc.), natural resource products (lumber, etc.), and manufactured goods as the Twin Cities is home to several major manufacturers. The importance of this corridor for freight is further demonstrated by the high number and proportion of heavy commercial vehicles along the corridor, which can lead to accelerated deterioration of pavement condition. According to MnDOT 2017 Traffic Volume Program 2017 data¹, the annual average daily traffic for heavy commercial vehicles ranges from 10,000 to 11,000 within the project area, equating to a relatively high heavy commercial vehicle percentage of 9-10 percent.

¹ Source: Minnesota Department of Transportation. 2017 Publication Traffic Volumes Metro Street Series – 4F. 2017. Accessed: 25 September 2018. Available from: <http://www.dot.state.mn.us/traffic/data/maps/indexmaps/2017/4F.pdf>.

Figure 4: Existing Project Area Interchanges



B. WHAT ARE THE NEEDS FOR THE PROPOSED ACTION?

The Project Need section identifies transportation problems that are currently existing or are reasonably expected to occur within the project area. The Project Need section discusses the transportation problems which led to the initiation of the project (“primary needs”). In addition, opportunities to address other transportation problems or system improvements within the project area that may be addressed concurrently are also discussed (“secondary needs”). The identified project needs are:

1. Primary Needs

There are four primary needs of the project:

- Pavement condition along I-94
- Vehicle mobility in the I-94 corridor between TH 610 and TH 101
- Vehicle mobility to I-94 between Maple Grove Parkway and TH 101
- Infrastructure deficiencies in the drainage system along I-94

The following sections summarize the project’s primary needs. A more detailed description of the needs and associated analysis can be found in the Purpose and Need Technical Memo in **Appendix B**.

a) Pavement Condition: The pavement condition is poor along the project corridor

The concrete pavement along the project section of I-94 was constructed in 1973. Since then, several maintenance and rehabilitation projects have been completed to keep the pavement in acceptable condition. In addition to continued pavement maintenance within the project area, there have been pavement improvement projects immediately east and west of the current project location thus making the current section of I-94 between the I-494/I-694 interchange and TH 101 46 years old and in poorer condition compared to its adjacent segments.

Additionally, there is data to support that the pavement condition is poor in the project corridor. MnDOT’s Pavement Performance targets are for 70 percent or more of the roadway miles to be in “good” condition based on Ride Quality Index (RQI) (MnDOT’s measure of pavement roughness on a scale of 0.0 to 5.0) and for 2 percent or less of the roadway miles to be in “poor” condition based on RQI. **Table 1** shows the RQI categories and ranges.

Table 1: RQI Categories and Ranges²

Numerical Rating	Verbal Rating
4.1-5.0	Very Good
3.1-4.0	Good
2.1-3.0	Fair
1.1-2.0	Poor
0.0-1.0	Very Poor

In 2010, MnDOT completed a diamond grinding project that resulted in an RQI along the project area of 3.6. This put I-94 in the project area in the “good” category, but not as high as would be expected after a major improvement project. Since then, the pavement has continued to deteriorate. New transverse joint failures have materialized, and severe longitudinal joint deterioration has occurred. The joints between adjacent concrete lanes have widened creating potholes, and the bituminous shoulder has sunk, cracked, and developed severe potholes. The RQI has been steadily declining over the last three years, and that decline will accelerate in the years ahead. This year the RQI is projected to drop from “good” into “fair” condition and will drop into “poor” condition in six years. By 2026, the RQI will be at 1.4, which is unacceptable.

² Source: Minnesota Department of Transportation. *An Overview of Mn/DOT’s Pavement Condition Rating Procedures and Indices*. September 2015. Accessed: 11 October 2018. Available from: http://www.dot.state.mn.us/materials/pvmtmgmtdocs/Rating_Overview_State_2015V.pdf.

Based on this analysis, a long-term solution to the pavement condition was identified as a primary need.

b) Vehicle Mobility: The Interstate Access Request for the TH 610 connection to I-94 needs to be addressed

As part of the TH 610 Interstate Access Request (IAR) between MnDOT and the Federal Highway Administration (FHWA), MnDOT agreed to annually monitor operations at the I-94/TH 610 junction and evaluate the impacts of the TH 610 partial interchange on congestion. Three performance criteria were developed to determine whether additional mitigation strategies would be necessary to address operational issues.³ The IAR stated that when all three performance criteria were met, MnDOT would take steps to construct additional capacity on westbound I-94 west of TH 610. The IAR also indicated that when/if a future interchange near Brockton Lane was constructed, additional capacity on eastbound and westbound I-94 should be constructed between the Brockton interchange and the ramps to and from TH 610.

The performance criteria from the IAR are described below with more analysis in **Appendix B**:

- *Performance Criterion 1 – Congestion on westbound I-94 immediately upstream of the TH 610 on ramp.* The first performance criterion is met if over two hours of congestion per day immediately upstream of the merge point area are identified in MnDOT's Annual Congestion Report. Based on a review of the 2017 MnDOT Congestion Report (described below), it was determined that westbound I-94 immediately upstream of TH 610 is congested for two to three hours during the PM peak period and that the TH 610 merge is the cause of this congestion.
- *Performance Criterion 2 – Travel time for westbound I-94 between Maple Grove Parkway and TH 101 exceeds pre-TH 610 conditions by 30 percent.* The IAR states that this performance criterion is met if travel time on westbound I-94 between Maple Grove Parkway and TH 101 exceeds pre-TH 610 conditions by 30 percent. In 2015 (before the partial TH 610 connection), the average travel time for this segment was 8.1 minutes during the PM peak hour. In 2017 (after the partial TH 610 connection), the average travel time increased to 9.6 minutes, an increase of 19.2 percent. While this analysis does not indicate that the 30 percent threshold was met, it does suggest that westbound I-94 travel times during the PM peak hour have increased since the opening of TH 610.
- *Performance Criterion 3 – Cost effectiveness of the capacity improvement.* The third criterion from the TH 610 IAR is related to the cost effectiveness of adding capacity. If the cost effectiveness of adding capacity results in a return period of less than 20 years, MnDOT will pursue measures to mitigate the congestion caused by the TH 610 merge. MnDOT completed a cost benefit analysis that shows the present value of adding an additional westbound lane between TH 610 and TH 101 is just under \$50,000,000 while the construction and right of way costs would be just under \$4,000,000. Based on this analysis the return period would be less than 20 years and the criteria would be met.

Finally, the TH 610 IAR stated that when/if a future interchange near Brockton Lane was constructed, additional capacity on eastbound and westbound I-94 could be constructed between the Brockton interchange and the ramps to TH 610. The future interchange near Brockton Lane is planned to be constructed in 2020/2021, and therefore additional capacity between the interchange and TH 610 is needed.

Based on this analysis, vehicle mobility related to meeting the IAR for the TH 610 connection to I-94 was identified as a primary need.

³ Source: Federal Highway Administration, prepared for MnDOT. Interstate Access Request at Interstate 94 (I-94) and TH 610, Hennepin County, MN. May 2014. Appendix G: MnDOT Performance Based Criteria Submittal.

c) **Vehicle Mobility – There is poor local mobility to I-94 between Maple Grove Parkway and TH 101** There is no local access along I-94 between Maple Grove Parkway and TH 101. As shown in **Figure 4**, current access to I-94 within the project area is limited to five locations. Of these, only three provide local access as noted:

- TH 101 interchange in Rogers (local access)
- TH 610 partial interchange in Maple Grove
- CSAH 30/Maple Grove Parkway interchange in Maple Grove (local access)
- CSAH 109/Weaver Lake Road interchange in Maple Grove (local access)
- I-494 interchange in Maple Grove

This lack of access results in longer regional trips since the traveling public in many areas must travel farther (up to three miles out of their way) to gain access to the regional transportation system. This increases the system-wide vehicle miles of travel, vehicle hours of travel, energy use, and vehicle emissions. As this region continues to urbanize, it is expected that volumes along these arterial routes will continue to increase, creating additional demand for users that currently rely on them to access I-94. As this area develops, the problem will get worse and congestion will increase at the other access points to the regional system.

The lack of efficient access to I-94 between Maple Grove Parkway and TH 101 is documented in the *Northwest Hennepin County I-94 Sub-Area Transportation Study*⁴ (I-94 Sub-Area Study). This I-94 Sub-Area Study was a planning effort led by the cities of Rogers and Dayton and Hassan Township (Hassan Township and the City of Rogers are now one community). The I-94 Sub-Area Study was coordinated with MnDOT, the FHWA, Hennepin County, and other communities in the area.

At the time of the study, there were six miles between the interchanges at Maple Grove Parkway and TH 101. Since that time, a partial interchange at TH 610 was constructed and became operational in 2016. As northwest Hennepin County continues to urbanize, the current spacing of interchanges on I-94 is inadequate to support the future planned growth in the regional area. If new access is not provided, capacity enhancements to arterials and interchanges at TH 101, Maple Grove Parkway, and TH 610 would be needed⁵. For example, the TH 101 and I-94 interchange is already experiencing congestion. Planned growth in the project area is expected to overload existing interchange ramps at TH 101 and Maple Grove Parkway, further exacerbating delays at these interchanges.

This lack of local access to I-94 is also an issue for freight transportation and the regional business community. I-94 is an important part of the freight transportation network, providing a critical link for commerce to move goods between communities and regions. As previously stated, I-94 is part of the Primary Freight Highway System. Near the project area, there are several industrial businesses between Maple Grove Parkway and TH 101. In the existing conditions, the trucks and delivery vehicles carrying freight to and from these businesses access I-94 either from TH 101 or Maple Grove Parkway, causing additional system-wide vehicle miles of travel, vehicle hours of travel, energy use and vehicle emissions. This lack of local connection to the major freight transportation network impacts the commerce within the area.

In 2012, as part of the past studies identifying this lack of local access to I-94, the Interchange Review Committee (which included MnDOT, Metropolitan Council, and FHWA) approved the planned interchange at I-94 near Brockton Lane and indicated it was consistent with the qualifying criteria of the Metropolitan Council's Transportation Policy Plan⁶. This letter is included in **Appendix B**.

Based on a review of the existing conditions, local vehicle mobility to I-94 was identified as a primary need of the project.

⁴ Source: Hennepin County. Northwest Hennepin County I-94 Sub-Area Transportation Study. 2008.

⁵ Source: City of Dayton. I-94/Brockton Lane Interchange Environmental Assessment Worksheet. August 2012. Appendix C, Purpose and Need Framework.

⁶ Source: Interchange Review Committee. Communication to Samantha Orduno. November 7, 2012.

d) Infrastructure condition – The drainage infrastructure has reached its suitable life and is under capacity

The current stormwater management system along I-94 primarily consists of centerline culverts and median drains. As a part of the project, cleaning and video inspection of all the drainage infrastructure for I-94 was completed and this data is being analyzed. The median drains have reached their maximum life and are deteriorating. Most of the median drains were installed in 1972 and/or some median drains are corrugated metal pipes which have a shorter life span than reinforced concrete pipe. Additionally, many of the median drains were lined in 2009 which reduced the capacity of the culverts. This reduced capacity has caused water to drain more slowly from the median, resulting in poor subgrade conditions.

Based on this information, the infrastructure condition of the drainage system was identified as a primary need of the project.

2. Secondary Needs

Secondary needs are opportunities to address other transportation problems or system improvements within the project area that can be addressed concurrently with the project. These include any common project need as well as those unique to the project area. Three secondary needs were identified for the project:

- Infrastructure deficiencies in the pavement condition and capacity at the Elm Creek Rest Area
- Geometric deficiencies in meeting ADA design standards within the project area's right of way
- Lack of commercial vehicle enforcement area

The following sections discuss the project's secondary needs.

a) Infrastructure Conditions – There are poor pavement conditions and lack of capacity at the Elm Creek Rest Area

The Elm Creek Rest Area is located within the project corridor on the south side of I-94 near Elm Creek and Rice Lake in Maple Grove.

i. Pavement Condition

MnDOT assessed the vehicular pavements at the Elm Creek Rest Area in February 2018 using the PASER method developed by the University of Wisconsin-Madison Transportation Information Center, which includes a condition rating scale from 1 (Failed) to 5 (Excellent). Based on the 2018 assessment, the overall rating was a 2 which equates to a quality rating of "poor." This assessment was verified by an independent visual observation in 2018, which revealed pavement deterioration at several areas of the rest area, particularly mixed-use car and semi-truck parking areas and the driving lane adjacent to these areas. The pavements in these areas exhibited severe joint spalling and deterioration, severe cracking, and standing water along the curb due to poor drainage. See **Appendix B** for further details including pavement photos.

ii. Truck Capacity

Based on information from the 2010 *Minnesota Truck Parking Study*⁷, the Elm Creek Rest Area is the state's most congested public rest area in terms of truck parking. This rest area ranked first in the state in percent of days over capacity with 65.2 percent of days at or over capacity.

Based on this information, the poor pavement condition and lack of truck capacity has been determined to be a secondary need.

b) Geometric Deficiencies – Pedestrian curb ramps and sidewalks do not meet ADA standards within the project right of way

In 2008 MnDOT implemented a policy to install Accessible Pedestrian Signals (APS) at all new signals at eligible locations and at any eligible intersection where an existing traffic signal has aged to the point of

⁷ Source: Minnesota Department of Transportation. Minnesota Truck Parking Study (Phase 2). 2010-34TS. November 2010. Accessed 25 September 2018. Available from: <https://www.lrrb.org/media/reports/201034TS.pdf>.

needing replacement. Pedestrian curb ramps and sidewalks have also been inventoried for ADA compliance within the project area. MnDOT's policy is to correct non-ADA compliant curb ramps and sidewalks located within their right of way during routine construction activities. ADA-related deficiencies related to APS, curb ramps, and sidewalks have been documented at several crossings within the project, including Weaver Lake Road, 93rd Avenue, Maple Grove Parkway, 105th Avenue N, CSAH 81, TH 101, and the Elm Creek Rest Area.

c) Commercial Vehicle Inspection Site – There is a lack of commercial vehicle enforcement areas along this portion of I-94

In 2017, the heavy commercial vehicle traffic ranged from 10,000 to 11,000 vehicles per day based on annual average daily traffic. Enforcement of heavy commercial vehicles to confirm they are within their weight limit is important to maintain the structural integrity of the roadways and ensure safe operation of the vehicle. Weigh stations are set up along commercial truck corridors to verify that trucks are operating with their weight limits.

In 2018, MnDOT and the Minnesota State Patrol developed the *Minnesota Weight Enforcement Investment Plan*⁸ as part of a 10-year Weight Enforcement Investment Plan (WEIP). Needs identified during this planning process included the need for additional enforcement pull-off areas. I-94 between TH 610 and TH 101 was identified as a high-priority area for improving vehicle enforcement operations.

3. Additional Considerations

a) Project Timing

The timing for the project is an important consideration because other projects along the I-94 corridor are planned to be implemented over the next five years. Consideration should be given to combining as many improvements as practical into a project to avoid multiple traffic disruptions to the traveling public. At the very least, the construction schedules of various projects should be coordinated to minimize traffic impacts during construction.

Specifically, the I-94 St. Michael to Albertville and the I-94 Monticello to Clearwater projects will be undergoing construction within a similar timeline. These two projects, along with this I-94 UBOL Maple Grove to Rogers project, will coordinate on project communication and maintenance of traffic.

b) Route Consistency/System Continuity

As part of the regional freeway network, there are several other planned or programmed projects that may affect how the I-94 facility is used within the project area. These projects are anticipated to result in increased traffic along TH 101 and I-94 within the project area. There are three specific projects that are expected to affect the project area and more information is included in **Appendix B**.

i. I-94 from TH 241 in St. Michael to west of Wright County Road 19 in Albertville

MnDOT has identified a future project to improve I-94 from TH 241 in St. Michael (approximately 2.7 miles west of the project area) to just west of Wright County Road 19 in Albertville. This project includes pavement reconstruction, an additional lane on eastbound and westbound I-94, bridge reconstruction, a new eastbound access to I-94 between CR 19 and CR 37, a new access loop ramp from westbound I-94 to southbound TH 241, and drainage improvements along the corridor. The project is intended to improve the capacity of the interstate by adding a third lane in each direction and making interchange improvements at TH 241, CR 37, and CR 19. By providing additional capacity through this area, additional pressure will be placed on the bottlenecks and congested areas that are present within the project area.

⁸ Source: Lakeside Engineers. Needs Assessment: Minnesota Weight Enforcement Investment Plan. Minnesota Department of Transportation and Minnesota State Patrol. June 15, 2018.

ii. Highway 169 Redefine

The second project is the Highway 169 Redefine, which is a planned freeway conversion along TH 169 in Elk River. This proposed project will construct new interchanges at Main Street and School Street, 193rd Avenue, and a partial interchange at 197th Avenue. By converting this segment of TH 169 from an expressway to a freeway, additional capacity will be provided along TH 169, which provides a north-south connection to TH 101 approximately six miles north of the project area. Therefore, this project is also anticipated to result in increased traffic along TH 101 and I-94 within the project area.

iii. TH 252/I-94 Environmental Review

MnDOT has studied TH 252 for a potential freeway conversion from TH 610 and I-694 in the cities of Brooklyn Center and Brooklyn Park. Several concepts for the locations of interchanges and overpasses are being considered as part of this project. Additionally, an environmental review will be completed for a larger study area between TH 610 in Brooklyn Park to 4th Street North in Minneapolis. This study will consider alternatives for TH 252 and for I-94 between TH 252 and Dowling Avenue.

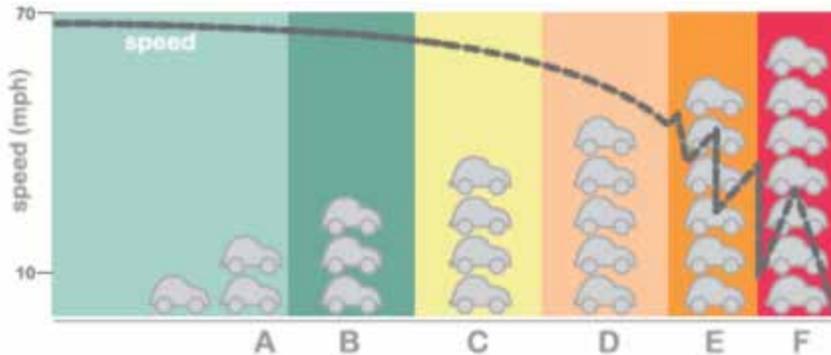
Each of these projects is anticipated to increase capacity along the regional freeway network in proximity to the project area, which will directly influence the volume of traffic using the I-94 corridor. The project area will need to accommodate these other projects to maintain its role in the regional freeway system.

c) Known Needs that this Project Will Not Address

Traffic along the corridor has grown steadily over the past 20 years. The realigned and extended TH 610, including the partial interchange at I-94, opened in 2016. This new connection, in addition to the growth in traffic based on regional development and growth, has led to an increase in traffic using the I-94 corridor in both eastbound and westbound directions (with congestion issues primarily occurring in the eastbound direction during AM peak hours and in the westbound direction during PM peak hours).

Level of Service (LOS) is a method to measure congestion and mobility along roadway. LOS is a grading system of A-F used to approximate congestion levels on roadway segments and at intersections. The LOS for freeway segments is based on vehicle density, as measured in vehicles per lane per hour. **Figure 5** illustrates the relationship of LOS A-F in terms of density of vehicles (cars, buses, freight) on the freeway. Vehicle speeds on the freeway can be maintained at higher densities (i.e., LOS C and D); however, as the density increases to LOS E and F, the freeway approaches capacity, speeds start to fluctuate, and traffic breaks down.

Figure 5: Freeway Traffic Flow Characteristics by Level of Service



Analysis of the existing and future No Build condition shows congestion and LOS F in several locations within the corridor. During the AM peak hour, I-94 eastbound operates at LOS F between Maple Grove Parkway and the I-494/I-694 interchange. During the PM peak hour, I-94 westbound operates at LOS F between Hemlock Lane and TH 610. Traffic conditions are anticipated to worsen in the future as additional growth planned along the I-94 corridor and in areas to the northwest of the Twin Cities comes to fruition. In the future No Build condition, there are known mobility issues between I-494/I-694 and TH

610. During the future AM peak hour, I-94 eastbound operates at LOS F between Maple Grove Parkway and the I-494/I-694 interchange. During the future PM peak hour, I-94 westbound operates at LOS F between Hemlock Lane and TH 610.

In addition to the existing and future No Build conditions that show congestion along the corridor and the I-494/I-694 interchange, there are several other future activities that are planned to study the mobility along the larger system corridor. For example, MnDOT and the Metropolitan Council are completing a system interchange study of 52 system interchanges in Minnesota. The I-494/I-694 interchange is one of the system interchanges being studied. Therefore, there is an unknown outcome regarding the priority of the interchanges and unknown outcome on what the suggested improvements would be.

There is also a future, conceptual TH 610 extension. TH 610 is currently a partial interchange and while construction of the full interchange is not yet identified in any regional plans, there is local support for the full interchange and this creates additional uncertainty on improvements to address mobility between I-494/I-694 and TH 610.

Finally, the I-94 project area is a MnPASS Tier 3 corridor. Tier 3 is the lowest priority for MnPASS lanes and therefore construction of managed lanes would not be considered until the end of the 20-year plan.

While the data suggests that addressing the vehicle congestion between the I-494/I-694 interchange and TH 610 is a need in this segment of the project area, there is uncertainty as to the outcomes of ongoing studies and future improvements addressing the congestion between I-494/I-694 and TH 610. Therefore, addressing congestion between I-494/I-694 and TH 610 will not be addressed with this project.

C. What is the Purpose of the Proposed Action?

The project purpose is to improve the ride quality and restore the pavement structure of I-94 between the I-494/I-694 interchange in Maple Grove and TH 101 in Rogers, improve mobility between TH 610 in Maple Grove and TH 101 in Rogers consistent with the performance criteria identified in the *TH 610 Interstate Access Request*, and provide vehicle mobility to I-94 between Maple Grove Parkway and TH 101 to improve transportation system connectivity and to accommodate planned regional growth in the area.

In addition, the purpose of the project is to address drainage deficiencies along I-94 in the project area, address ADA deficiencies within the MnDOT right of way, address the need to improve commercial vehicle enforcement operations, and improve the pavement and truck capacity at the Elm Creek Rest Area.

III. ALTERNATIVES

In addition to the No Build Alternative, several Build Alternatives were considered for:

- I-94 capacity improvements
- Brockton interchange

A more detailed analysis of the Alternatives Analysis is in **Appendix C** including the full alternatives evaluation matrix.

A. NO BUILD ALTERNATIVE

The No Build Alternative provides the basis of comparison, or benchmark, for the Build Alternatives and includes impacts associated with doing nothing. The No Build Alternative will result in no improvements being made along the I-94 project area. Pavement will not be resurfaced, new travel lanes will not be added, an interchange will not be constructed near Brockton Lane, the Elm Creek Rest Area will not be improved, a commercial vehicle inspection site will not be added, and ADA improvements will not be constructed. The ride quality and pavement structure of I-94 in the project area will continue to deteriorate, mobility and congestion concerns will remain, and without an interchange near Brockton Lane, access to I-94 will continue to be limited and congestion will increase at the existing interchanges at TH 101 and I-94, and Maple Grove Parkway and I-94. The No Build Alternative does not preclude ongoing maintenance work.

B. I-94 BUILD ALTERNATIVES

1. I-94 Alternatives Considered

Four alternatives were considered for I-94 in the project area. The paragraphs below describe the alternatives considered. All build alternatives include the following:

- Resurfacing of both westbound and eastbound I-94 via a UBOL for the length of the project.
- Reconstruction of shoulders adjacent to both the inside and outside lanes.
- Full-depth pavement reconstruction or overlays for the interchange ramps at Weaver Lake Road, and Maple Grove Parkway.
- Full-depth pavement reconstruction at the parking lot and entrance/exit ramp to the Elm Creek Rest Area.
- Construction of 12 additional truck parking spaces at the Elm Creek Rest Area.
- Construction of a deer compost area in the City of Dayton.
- Construction of a commercial vehicle inspection site on westbound I-94 between 3,300 feet north of CSAH 81 and 6,300 feet south of TH 101 in Rogers.
- Replacement of deficient culverts and addition of stormwater treatment areas within the project limits.
- Pedestrian improvements to meet ADA requirements within the MnDOT right of way.

2. Alternative I-94-1: Added capacity westbound between TH 610 and TH 101

Alternative I-94-1 evaluates three options (1a, 1b, and 1c) for adding capacity on westbound I-94. The three capacity options include:

i. Alternative I-94-1a: Construction of auxiliary lane westbound between TH 610 and proposed Brockton interchange.

Alternative I-94-1a includes construction of one westbound 12-foot wide auxiliary lane with six-foot-wide shoulder between TH 610 and the proposed Brockton interchange. Auxiliary lanes are lanes leading up to, or away from, entrance and exit ramps and allow traffic to change speed, merge in to/out of the travel lanes, for truck climbing, and facilitate the positioning of drivers at exits and the merging of drivers at entrances. They are used to balance the traffic load and maintain a more uniform level of service on the highway.

ii. *Alternative I-94-1b: Construction of a travel lane westbound between TH 610 and TH 101.*

Alternative I-94-1b includes construction of an additional westbound 12-foot-wide general-purpose travel lane with a 10-foot-wide shoulder between TH 610 and TH 101. This also includes the addition of bridge struts to the center piers of the bridges for the BNSF Railroad, CSAH 81, and Brockton Lane to accommodate an additional lane as well as construction of center median barriers between the proposed Brockton interchange and CSAH 81.

iii. *Alternative I-94-1c: Construction of a dynamic shoulder westbound TH 610 and TH 101.*

Alternative I-94-1c includes construction of a dynamic shoulder westbound between the proposed Brockton interchange and TH 101. The dynamic shoulder will be 14-foot-wide and would only be used during peak periods when the capacity is needed. During off peak periods, it would function as a normal shoulder. This alternative will require additional electronic signage via Intelligent Transportation Systems (ITS) to inform drivers of when the dynamic shoulder was open as a travel lane. This alternative also includes the addition of bridge struts to the center piers of the bridges for the BNSF Railroad, CSAH 81, and Brockton Lane to accommodate an additional lane as well as construction of center median barriers between the proposed Brockton interchange and CSAH 81.

b) *Alternative I-94-2: Added capacity eastbound between from TH 610 to TH 101*

Alternative I-94-2 evaluates three options (2a, 2b, and 2c) for adding capacity on eastbound I-94. The three capacity options include:

i. *Alternative I-94-2a: Construction of auxiliary lane eastbound between TH 610 and proposed Brockton interchange.*

Alternative I-94-2a includes the construction of one eastbound 12-foot-wide auxiliary lane with six-foot-wide shoulder between TH 610 and the proposed Brockton interchange.

ii. *Alternative I-94-2b: Construction of a travel lane on eastbound I-94 between TH 610 and TH 101.*

Alternative I-94-2b will involve the construction of an additional 12-foot-wide general-purpose travel lane with a 10-foot-wide shoulder on eastbound I-94 between TH 101 and TH 610. This alternative includes the construction of a third thru lane on eastbound I-94 through the TH 101 interchange. This also includes the addition of bridge struts to the center piers of the bridges for the BNSF Railroad, CSAH 81, and Brockton Lane to accommodate an additional lane as well as construction of center median barriers between the proposed Brockton interchange and CSAH 81.

iii. *Alternative I-94-2c: Construction of dynamic shoulder eastbound between TH 610 and TH 101.*

Alternative I-94-2c includes construction of a dynamic shoulder eastbound between the TH 610 and TH 101. The dynamic shoulder will be 14-foot-wide and would only be used during peak periods when the capacity is needed. This alternative also includes the addition of bridge struts to the center piers of the bridges for the BNSF Railroad, CSAH 81, and Brockton Lane to accommodate an additional lane as well as construction of center median barriers between the proposed Brockton interchange and CSAH 81.

c) *Alternative I-94-3: Eliminate center lane merge on westbound I-94 at the junction of I-94 and I-494 by adding a lane from the I-494/I-694 interchange to the Maple Grove Parkway exit.*

The Value Engineering team recommended evaluating the elimination of the center lane merge on westbound I-94 at the junction of I-94 and I-494 by adding a lane from this junction to the Maple Grove Parkway exit. This area was raised as a safety concern.

d) *Alternative I-94-4: Construction of an eastbound auxiliary lane between Maple Grove Parkway and Weaver Lake Road*

An eastbound auxiliary lane was evaluated between Maple Grove Parkway and Weaver Lake Road. This alternative was considered since it was identified as part of an evaluation of an add-on to the selected alternative.

e) Other Alternatives Considered

During project scoping, extending TH 610 into a full interchange as well as adding MnPASS lanes were discussed. TH 610 currently allows for westbound traffic on TH 610 to go westbound on I-94. Additionally, traffic in eastbound I-94 can exit to eastbound TH 610. Extending TH 610 into a full interchange would involve reconstructing the interchange to include full interstate access to I-94 and TH 610. MnPASS lanes would involve constructing additional managed high occupancy vehicle (HOV) lanes for travel during peak travel times.

2. Evaluation of I-94 Alternatives

The I-94 Mainline alternatives were first evaluated relative to the project purpose. Alternatives that did not meet the project purpose were eliminated from further consideration. The remaining alternatives were evaluated in more detail relative to their environmental and transportation impacts. A benefit cost analysis was also completed.

a) Initial Screening of Alternatives

The following alternatives were eliminated because they do not meet the project purpose or because they were determined to have operational or safety concerns.

i. *Alternative I-94-1c: Add dynamic shoulders westbound between TH 610 and TH 101.*

Based on the initial screening, Alternative I-94-1c was removed from further consideration based on the following:

- The use of dynamic shoulders through interchange ramps is considered poor design from a geometrics perspective. Lane striping becomes challenging and drivers may not recognize the transition in the lane from a travel to exit/entry lane, which may lead to driver confusion and increased crashes.
- The added signage, ITS, traffic volume monitoring, variable speed limits, queue warning and ramp metering systems, and law enforcement required for dynamic shoulders will increase the cost of operating and maintaining the roadway into the future.
- Dynamic lanes are not used elsewhere on I-94 in Minnesota. This will not be a design that is consistent with the rest of the corridor.
- There is no constraint precluding the construction of an auxiliary or travel lane.
- Local partners and law enforcement do not support this alternative as they believe it will lead to an increase in crashes resulting from driver confusion due to lack of familiarity with the design.

ii. *Alternative I-94-2c: Add dynamic shoulders eastbound between TH 610 and TH 101.*

Alternative I-94-2c was removed from further considered for the same reasons that Alternative I-94-1c was removed.

iii. *Alternative I-94-3: Eliminate Center Lane Merge on westbound I-94 at the junction of I-94 and I-494 by adding a lane from the I-494/I-694 interchange to the Maple Grove Parkway exit.*

This alternative does not meet the purpose and need of this project. Additionally, this section of I-94 does not have above average crash rates or crash types that would indicate a safety problem. The Metropolitan Council and MnDOT are doing a two-year study of system interchanges in the Twin Cities Metropolitan area to prioritize the system interchanges where improvements are needed. The I-494/I-694 interchange, which includes this segment, is included in that study. The I-94 UBOL project is identified as a resurfacing project that will be coordinated with the construction of the Brockton interchange in 2020 and address the congestion created by the TH 610 access. The addition of a lane between I-494 and Maple Grove Parkway goes beyond the scope of this project and is inconsistent with the identified resurfacing project.

iv. Alternative I-94-4: Eastbound auxiliary lane between Maple Grove Parkway and Weaver Lake Road

This alternative also goes beyond the purpose of this project. The existing traffic volumes and speeds show congestion downstream from this location, so there will be limited benefit in terms of improving vehicle mobility. The crash analysis did not indicate a safety problem in this section of I-94. Overall, this alternative will not address mobility on I-94 between TH 610 and TH 101 outlined in the TH 610 IAR and therefore was rejected as it was not consistent with the purpose of the project.

v. Other Alternatives Considered

The other alternatives that were considered include reconstruction of TH 610 into a full interchange as well as adding MnPASS lanes. The TH 610 extension project is not yet identified in any regional plans nor has funding been identified. Regarding adding MnPASS lanes, the project area is a MnPASS Tier III corridor. Tier III is the lowest priority for MnPASS lanes and therefore construction of managed lanes would not be considered until the end of the 20-year plan. Therefore, these options were eliminated from further consideration.

3. Evaluation of Remaining Alternatives

The remaining alternatives were evaluated relative to transportation and environmental factors discussed at the beginning of this section. **Table 2** below summarizes the evaluation of the remaining alternatives and **Appendix C** provides additional information related to the benefits and impacts relative to the criteria. The evaluation is discussed below.

a) No Build

Continued maintenance would occur in the No Build alternative. Recurrent rehabilitation through diamond grinding will continue to reduce the structural capacity of the roadway by reducing concrete thickness, and continued maintenance efforts will become more frequent and costlier. Thus, the No Build Alternative is not considered a practical solution to address long-term needs and is not pursued. The No Build Alternative was evaluated as a basis against which to compare the Build Alternatives in the evaluation of environmental impacts but was not identified as the preferred alternative because it does not meet the project purpose.

b) Alternative I-94-1a: Construction of auxiliary lane westbound between TH 610 and the proposed Brockton interchange.

Alternative I-94-1a will provide some improvement to the project area in terms of mobility by adding capacity between the TH 610 entrance and the exit to the proposed Brockton interchange. This alternative will meet the requirements of the TH 610 IAR. See **Table 2** and **Appendix C** for more analysis.

c) Alternative I-94-1b: Construction of a travel lane westbound between TH 610 and TH 101.

Alternative I-94-1b will improve mobility between TH 610 and TH 101 through a reduction in congestion and reduced travel delays and will maintain consistency in the lane configuration on I-94 when considering the additional lane being added to I-94 between St. Michael and Albertville. Additionally, Alternative I-94-1b will mitigate the operational issues outlined in the TH 610 IAR. See **Table 2** and **Appendix C** for more analysis.

d) Alternative I-94-2a: Construction of auxiliary lane eastbound between TH 610 and proposed Brockton interchange.

Alternative I-94-2a will provide some improvement to the project area in terms of mobility by adding capacity between the proposed Brockton interchange and TH 610. This alternative will meet the TH 610 IAR. However, the auxiliary lane not maintain route consistency as well as an additional travel lane. MnDOT is constructing a third lane on I-94, west of the UBOL project between Albertville and St. Michael. There are currently three eastbound travel lanes on I-94 between TH 241 and TH 101 (western limits of the UBOL project), but the third lane ends at the exit to TH 101. There is already some congestion that occurs at this lane drop and volumes are forecast to increase. Not extending the third lane through the TH

101 interchange will increase the congestion and backups at this lane drop. See **Table 2** and **Appendix C** for more analysis.

e) Alternative I-94-2b: Construction of a travel lane on eastbound I-94 between TH 610 and TH 101.

Alternative I-94-2b addresses vehicle mobility through a reduction in congestion and reduced travel delays and will maintain route consistency in the lane configuration on I-94 when considering the additional lane being added to I-94 between St. Michael and Albertville and the existing three lane section between TH 241 and TH 101. This alternative will also meet the TH 610 IAR. A primary mobility benefit will be that traffic currently traveling on the third lane of eastbound I-94 north of TH 101 will be able to remain in a travel lane as opposed to merging into two lanes of traffic at the same time as traffic merging off TH 101. This will reduce the bottleneck at that location, which is causing operational issues.

Comparing alternatives I-94-1a, I-94-1b, I-94-2a, and I-94-2b, these alternatives have no impact on Section 4(f) and 6(f) resources, historical or archaeological resources, threatened and endangered species, contaminated materials, visual impacts, environmental justice, or farmland. For westbound alternatives I-94-1a and I-94-1b, the wetland and floodplain impacts are the same; the tree removal is slightly higher in Alternative I-94-1b as well as having a greater amount of additional impervious surface since the additional lane is longer than in Alternative I-94-1a. However, Alternative I-94-1b provides better traffic operations and has a higher net benefit than Alternative I-94-1a.

For eastbound alternatives I-94-2a and I-94-2b, the floodplain and tree removal impacts are the same; the wetland impacts are higher in Alternative I-94-2b as well as having a greater amount of additional impervious surface since the additional lane is longer than in Alternative I-94-2a. However, Alternative I-94-2b provides better traffic operations and has a higher net benefit than Alternative I-94-2a.

Table 2: I-94 Alternatives Evaluation Summary

Evaluation Criteria	No-Build	I-94-1a Auxiliary Lanes WB	I-94-1b Added Lanes WB	I-94-2a Auxiliary Lanes EB	I-94-2b: Added Lanes EB
Change in Daily Vehicle Hours of Travel from 2040 No-Build	0	(380)	(738)	(240)	(582)
Change in Daily Vehicle Miles of Travel from 2040 No-Build	0	2,950	11,611	2,327	6,646
Construction Cost	0	\$1,284,900	\$4,318,500	\$1,710,000	\$4,856,600
Net Benefit Compared to No-Build	0	\$34,252,500	\$49,514,790	\$24,105,900	\$44,664,400
Wetland Impact (acres)	0	0.1	0.5	0.5	1.5
Floodplain Impact (cubic yards)	0	0	0	1,850	1,850
Section 4(f) and 6(f) Impact	No	No	No	No	No
Historical	No	No	No	No	No
Archaeological	No	No	No	No	No
Threatened and Endangered Species (state and federal)	No	No	No	No	No
Tree Removal (acres)	0	0.1	0.2	0.7	0.7
Contaminated Materials	No	No	No	No	No
Visual Impacts	No	No	No	No	No

Evaluation Criteria	No-Build	I-94-1a Auxiliary Lanes WB	I-94-1b Added Lanes WB	I-94-2a Auxiliary Lanes EB	I-94-2b: Added Lanes EB
Air Quality	No	No	No	No	No
Noise	No	Yes	Yes	Yes	Yes
Environmental Justice	No	No	No	No	No
Right of Way (permanent right of way acquisition)	None	Low	Medium	Low	Medium
Farmland	None	None	None	None	None
Additional Impervious	0	3.8	7.3	3.5	9.7

C. BROCKTON INTERCHANGE ALTERNATIVES

1. Background

In 2008, the I-94 Sub-Area Study was completed in collaboration with the FHWA, MnDOT, Metropolitan Council, Hennepin County, and the cities of Dayton, Rogers, Corcoran, Maple Grove, and Hassan Township. The purpose of the plan was to investigate the local roadway system in northwest Hennepin County and the impacts an interchange at Brockton Lane may have on the regional area. The results of the analysis indicated that a new interchange near Brockton Lane would help balance traffic on the overall system and improve safety by ensuring regional traffic use of the freeway system, rather than on local roadways. Additional information can be found in **Appendix C**.

In 2011, a Technical Advisory Committee was formed to begin the process of evaluating alternatives for a Brockton interchange. A Project Steering Committee (PSC) was developed that included the cities of Dayton, Rogers, Corcoran, Maple Grove, and Hassan Township, FHWA, MnDOT, Metropolitan Council, Hennepin County, Three Rivers Park District, community representatives, special interest groups, and local business and private sector partners. The PSC confirmed the location of the I-94 and Brockton Lane area interchange on April 27, 2011, where FHWA and MnDOT representatives indicated that the Brockton location was the best location due to spacing with other system interchanges.

Ultimately, the PSC recommended an interchange offset to the east from Brockton Lane. The offset was chosen based on comments received at an open house supporting the offset concept over the other concepts primarily because it allowed for greater flexibility in terms of construction staging and expansion and will be the least disruptive to local residents and businesses.

In 2011, the PSC also recommended a partial cloverleaf (parclo) as the recommended interchange design. The parclo was chosen since it provided high capacity for traffic, which was based on the significant development growth that was forecasted in the area. Since 2011, the development forecasts have been adjusted to show less development growth than anticipated in 2011.

In 2013, the City of Dayton began working on obtaining funding and right of way for the interchange. Obtaining this right of way was completed after the City of Dayton finished the "Interstate 94/Brockton Interchange Project Environmental Assessment Worksheet (EAW)" dated August 2012. The Negative Declaration of Need for an Environmental Impact Statement for that EAW was issued in February 2013. The city completed the first round of right of way acquisition based on the interchange EAW in 2013. The second round of right of way acquisition will begin when the Findings of No Significant Impact (FONSI) is received for this I-94 UBOL Resurfacing Environmental Assessment/Environmental Assessment Worksheet (EA/EAW) in May 2019.

As part of this I-94 EA/EAW, configurations for the interchange were reexamined. The recommended offset location for the interchange east of Brockton Lane remained constant in this evaluation. This analysis considered the adjusted lower growth forecasts and changes to the I-94 corridor that occurred since 2011, such as the completion of the partial interchange at TH 610 in Maple Grove. From this analysis, four

alternatives were considered for the offset Brockton interchange. Only alternatives that met the purpose and need were carried forward for additional study. A description of the alternatives is provided below.

2. Brockton Interchange Alternatives Considered

Four alternatives were considered for the Brockton interchange in the project area. The paragraphs below describe the alternatives considered. All build alternatives include the following:

- Construction of the new Dayton Parkway as a four-lane road with signals and 12-foot-wide lanes in each direction between Brockton Lane and CSAH 81 with full access at I-94.
- Reconstruction of approximately 1,890 feet of Brockton Lane at the new Dayton Parkway intersection with two thru lanes, two left turn lanes, and one right turn lane in the northbound and eastbound directions.
- Reconstruction of approximately 3,175 feet of CSAH 81 at the new Dayton Parkway intersection with two thru lanes, two left turn lanes, and one right turn lane in the westbound and eastbound directions on CSAH 81; and two left turn lanes, one thru lane to future development, and one right turn lane in the northbound direction.
- Construction of an at-grade crossing of the BNSF railroad crossing.
- Construction of a 10-foot-wide trail along Dayton Parkway.
- Construction of stormwater BMPs to treat stormwater to state and federal requirements.

a) Brockton 1 – Partial Cloverleaf (Parclo)

The Brockton 1 Alternative is a partial cloverleaf (Parclo) interchange. A parclo is a modification of a traditional cloverleaf interchange and has four ramps and two loops. A loop ramp from the interchange to eastbound I-94 will be constructed in the northwest quadrant of the interchange, and a loop ramp from westbound I-94 to the interchange will be constructed in the northeast quadrant of the interchange. Ramps from I-94 westbound and eastbound to the interchange will be constructed in the southeast and northwest quadrants. An entrance ramp from the interchange to eastbound and westbound I-94 will be constructed in the southwest and northeast quadrants of the interchange. A five-lane bridge will be required.

b) Brockton 2 – Standard Diamond

The Brockton 2 Alternative is a standard diamond. A standard diamond has four ramps for exiting and entering on to I-94. This alternative has sufficient capacity for vehicles, but not as much as the parclo alternative. Some heavy moves prevent free flow during peak traffic time. A six-lane bridge will be required due to double left-turn lanes.

c) Brockton 3 – Diverging Diamond

The Brockton 3 Alternative is a diverging diamond interchange (DDI). This type of interchange design includes the two directions of traffic on the bridge crossing to the opposite side on either side of the bridge. Traffic on the new Dayton Parkway will travel east-west through the interchange. Traffic headed eastbound or westbound I-94 will take ramps to I-94. The diverging diamond design, which shifts heavy left-turn movements over to the left side of the roadway, will reduce conflicts with thru traffic on new Dayton Parkway and will allow greater progression for left turns. A four-lane bridge will be required.

d) Brockton 4 – Folded Diamond

The Brockton 4 Alternative is a folded diamond interchange. This interchange includes two ramps and two loops like the parclo except that the loops and ramps are all on the same side of the bridge.

3. Evaluation of Brockton Alternatives

The alternatives were evaluated based on the purpose and need, operations and cost, and environmental impacts. Based on this initial screening, some alternatives were rejected before they were further screened for environmental factors. Alternatives that were not rejected with the initial screen were then evaluated based on environmental impacts. **Appendix C, Table 2** contains more information about the metrics used to evaluate the alternatives.

a) Brockton 1 – Partial Cloverleaf (Parclo)

The parclo interchange alternative has the highest traffic capacity. It also has the highest right of way impacts, requires more maintenance, and has the highest costs. However, it does meet the purpose of the project. Therefore, this alternative was carried forward for additional screening. This alternative had the most wetland impact, tree removal, farmland impact, and added the most impervious surface compared to the other alternatives.

b) Brockton 2 – Standard Diamond

This alternative has sufficient initial capacity with fewer right of way impacts in the northwest quadrant but more right of way impacts in the southeast quadrant. However, this alternative did not have the flexibility needed to add capacity in the future to accommodate long-term planned growth within the region. While this alternative was rejected early in the process based on operations and long-term expansion ability, it was included for additional environmental analysis. This alternative had the second least amount of wetland impact but had more floodplain impact and high farmland impact. This alternative was in the middle compared to the other alternatives on tree removal.

c) Brockton 3 – Diverging Diamond

This alternative has sufficient capacity and allows for more efficient left turn movements for vehicles. The right of way needs less than other alternatives. While this type of design is unconventional, it is occurring more frequently in the Twin Cities metropolitan area. This alternative is less costly than the parclo alternative. This alternative meets the purpose of the project. Therefore, this alternative was carried forward for additional screening. This alternative had the least wetland impact and the least amount of tree removal and farmland impact. It had less floodplain impact and the least amount of additional impervious surface.

d) Brockton 4 – Folded Diamond

This alternative has sufficient capacity but has heavy left turn movements. This results in long queues which can cause vehicles to back up and cause congestion in other intersections and along the eastbound and westbound ramps. To accommodate the needed capacity, the bridge will be a five-lane bridge. Additional right of way will be needed for the ramps on the east side of I-94. However, this alternative meets the project purpose. Therefore, this alternative was carried forward for additional screening. This alternative had the higher wetland impact, more floodplain impact, and more tree removal. It was in the middle of the other alternatives for farmland and additional impervious surface.

Additional alternative analysis information is contained in **Appendix C**.

D. ALTERNATIVES UNDER CONSIDERATION IN THE EA

Following analysis of all alternatives, a recommendation was made for which alternatives to carry forward into environmental impact analysis. The preferred alternative for further study (hereby also referred to as the project) combines Alternatives I-94-1b and I-94-2b (added travel lanes) and the Brockton Alternative 3 (Diverging Diamond Interchange). This combined alternative is the alternative studied that best meets the purpose and need of the project and/or had lesser amounts of environmental impacts and thus will be carried forward for additional study. In addition to the Preferred Alternative, a No Build Alternative will be evaluated as a basis of comparison. Both the Preferred and No Build Alternatives are described in detail below. Additional information is contained in **Appendix C**.

1. No Build Alternative

The No Build Alternative will result in no improvements being made to I-94. Pavement will not be resurfaced, new lanes will not be added, the Elm Creek Rest Area will not be repaved or expanded, and the Brockton interchange will not be constructed.

The No Build Alternative does not preclude ongoing maintenance work. The No Build Alternative provides the basis of comparison, or benchmark, for the Build Alternatives and includes impacts associated with doing nothing. Recurrent rehabilitation and resurfacing through diamond grinding will continue to reduce the structural capacity of the roadway by reducing concrete thickness, and continued maintenance efforts will

become more frequent and costlier. The No Build Alternative was evaluated as further described in this section as a basis against which to compare the Build Alternatives in the evaluation of environmental impacts.

2. Preferred Alternative (I-94-1b, I-94-2b and Brockton 3)

See **Figures 6A-G** for the preferred alternative layout. Alternative I-94-1b and I-94-2b have also received local support from the cities of Dayton, Maple Grove, and Rogers as well as the I-94 West Corridor Coalition (see **Appendix C** for letters of support). The project will also obtain municipal consent in mid-2019.

The following text details key components of the preferred alternative.

a) Unbonded Concrete Overlay (UBOL)

The project will include the resurfacing of 9.6 miles of both eastbound and westbound I-94 between the I-494/I-694 interchange in Maple Grove and TH 101 in Rogers via an unbonded concrete overlay (UBOL).

b) Travel Lanes

The preferred alternative includes the construction of additional 12-foot-wide travel lanes with 10-foot-wide shoulders on both eastbound and westbound I-94 between TH 610 and TH 101. To accommodate the addition of the eastbound travel lane near TH 101, an additional lane will be added on eastbound I-94 from the end of the exit ramp to TH 101 to the end of the entrance ramp from TH 101.

c) Other I-94 Roadway Improvements

In addition to the UBOL and additional travel lanes, the following improvements will also be constructed:

- In-kind reconstruction of shoulder on both the inside and outside lanes
- Addition of bridge struts to the BNSF Railroad Bridge, CSAH 81 bridge, the existing Brockton Lane North overpass bridge and the Weaver Lake Road bridge.
- Full-depth pavement reconstruction or overlays of the interchange ramps at Weaver Lake Road, Maple Grove Parkway, and CSAH 81.
- Construction of center median barrier from east of the Brockton interchange to west of CSAH 81.
- Full-depth pavement reconstruction at the parking lot and entrance/exit ramp to the Elm Creek Rest Area.
- Construction of 12 additional truck parking spaces at the Elm Creek Rest Area.
- Construction of a deer compost area in the City of Dayton.
- Construction of a commercial vehicle inspection site on westbound I-94 between 3,300 feet north of CSAH 81 and 6,300 feet south of TH 101 in Rogers.
- Pedestrian improvements to meet ADA requirements within the limits of the project within MnDOT right of way.
- Replacement of culverts along the I-94 corridor.
- Stormwater treatment via wet ponds and infiltration basins.

MnDOT has committed to maintaining six-lanes of traffic during construction of the preferred alternative. To meet this commitment for the maintenance of traffic, an advanced temporary widening project is needed to facilitate completion of the overall project by 2021. The environmental impacts associated with this advanced temporary work are noted when applicable in the environmental review sections of this document. The work associated with the advanced temporary widening is listed below:

- Westbound, east of TH 610, additional temporary shoulder will be added outside the existing travel lanes. This will be removed once the project is complete. This work will begin in 2019.
- Westbound, west of TH 610, the outside shoulder will be removed and replaced with a reinforced shoulder and the temporary widening outside the existing travel lane will be used as the base for the permanent lane in the westbound direction. This work will begin in 2019.
- Westbound, some areas along the inside shoulder will be reinforced and/or temporary pavement will be added. This work will begin in 2019.
- Eastbound along the length of the project, the center shoulder will be reinforced with an 8-foot section.

i. Brockton Interchange

The Brockton interchange will include the construction of a new DDI interchange east of Brockton Lane in Dayton, Minnesota as shown on **Figure 6E**. The new 0.92-mile Dayton Parkway will be constructed as a four-lane roadway with signals and 12-foot-wide lanes in each direction at its new intersection on the east side of Brockton Lane, continue to the east, and then curve to the northeast with a four-lane bridge over I-94 and then continue to connect to CSAH 81 to the northeast. The DDI will have one-lane ramps in the four quadrants of the interchange. A 10-foot-wide trail along Dayton Parkway will also be constructed.

ii. Elm Creek Rest Area

The Elm Creek Rest Area will be improved through the resurfacing of the parking lot and entrance/exit ramps (see **Figure 7**). Improvements will also include the addition of 12 parking spaces for semi-trucks and ADA improvements to sidewalks and parking lot to meet ADA requirements.

iii. Commercial Vehicle Inspection Site

An inspection site for enforcement of commercial vehicle weight limits will be constructed along westbound I-94. The lane to the inspection site will be 20-foot-wide and located between 3,300 feet north of CSAH 81 and 6,300 feet south of TH 101 in Rogers (see **Figure 8**).

iv. Deer Compost Area

There is a deer compost area located in the MnDOT right of way at the existing westbound MnDOT wayside in the City of Dayton. The deer composting location receives roadkill deer from the MnDOT highway system in the metro area. To address the waste, the deer are composted. A new deer composting area will be constructed to replace the existing area. While the area is currently proposed near the new Brockton interchange as shown on **Figure 9**, MnDOT and the City of Dayton will coordinate to find a location more suitable for both entities.

3. Summary of Impacts

An expanded analysis and summary of all the alternative impacts is contained in **Appendix C** (see **Table 1** and **Table 2** of the "Alternatives Analysis Technical Memo" in **Appendix C**).

The I-94-1b and 2b alternative has similar environmental impacts with I-94-1a and 2a except that it has 1.4 acres more wetland impact and 7.1 acres more of additional impervious surface. However, Alternative I-94-1b and 2b provide better mobility (increased peak hour throughput on I-494 of 700 vehicles per hour), route consistency, reduced vehicle hours (by 700 hours more), and benefit/cost (by \$35,820,790) than 1a and 2a and therefore it is the preferred alternative.

The DDI alternative provides the best operations and can handle future growth in the area. Additionally, it had lower wetland impact, lower floodplain impact, and the least amount of tree removal, farmland impact, and additional impervious surface. Therefore, the Brockton 3 DDI is the preferred alternative.

A summary of the impacts associated with the no build and preferred alternatives are listed in **Table 3**.

Table 3: Summary of Impacts of the Preferred Alternative

Possible Impacts	No Build Alternative	PREFERRED ALTERNATIVE: I-94-1b and 2b: Added Travel Lanes	Brockton – 3 Diverging Diamond
Wetland Impact (acres)	0	2.0	1.9
Floodplain Impact (cubic yards)	0	1,850	18,590
Section 4(f) Impact	None	No	No
Section 6(f) Impact	None	No	No
Historic/Archaeological	No	No	No
Threatened and Endangered Species (state and federal)	No	No	No
Tree Removal	0	0.9	5.48
Contaminated Materials	No	No	No
Visual Quality	No	No	No – Consistent with Corridor
Air Quality	No	No	No
Noise	No	Yes	No
Environmental Justice	No	No	No
Right of Way Impact (permanent right of way acquisition)	None	Low	Medium
Farmland Impacts (acres)	None	None	9.3
Additional Impervious (acres)	0	17	16.7
Change in Daily Vehicle Hours of Travel from 2040 No-Build	0	1320	Included in Added Lanes
Change in Daily Vehicle Miles of Travel from 2040 No-Build	0	18,257	Included in Added Lanes
Construction Cost	0	\$9,175,100	To Be Determined
Net Benefit Compared to No-Build	0	\$94,180,000	Included in Added Lanes

E. OTHER PROJECTS NEAR THE PROPOSED PROJECT

In addition to the proposed project, there are two other transportation projects that are currently being developed northwest of the project that have an influence on the project area and were considered when alternatives were being developed.

- I-94 from TH 241 in St. Michael to west of Wright County Road 19 in Albertville**
 This project is planned to start in 2019 and will include pavement resurfacing, adding a third lane in each direction, and making interchange improvements at TH 241, CR 37, and CR 19. By providing additional capacity through this area, additional pressure will be placed on the bottlenecks and congested areas that are present within the project area.
- I-94 Monticello to Clearwater**
 This project is planned for construction in 2019-2021 and will include pavement resurfacing with an unbonded overlay in both directions of I-94 from east of Wright CR 39 in Monticello to TH 24 in Clearwater, Minnesota.

F. PROJECT COST, FUNDING, AND SCHEDULE

1. Project Cost

The anticipated cost of the project is \$135 million for resurfacing and travel lane construction for I-94 and \$25 million for the Brockton interchange. The total project cost is \$160 million. Additional project costs include engineering and construction administration. The costs provided above are based on preliminary estimates. Final project costs and cost shares will be refined by the partner agencies as more detailed design is completed and final partnership agreements are executed.

2. Project Funding

This project is being funded through a variety of local, state, and federal funding sources. Project funding sources and contributions are provided in Table 4.

Table 4: Project Funding

Portion of Project and Funding Source	Amount
I-94 resurfacing and added travel lanes	
State and Federal	\$135,000,000
<i>I-94 Subtotal</i>	<i>\$135,000,000</i>
Brockton interchange*	
State Bonding	\$13,500,000
Federal STP	\$7,000,000
MnDOT	\$500,000
City of Dayton	\$4,000,000
City of Rogers	\$1,500,000
<i>Brockton Subtotal</i>	<i>\$26,500,000</i>
TOTAL	\$161,500,000

*Funding has also been requested from Hennepin County (CIP request) and the City of Corcoran.

3. Project Schedule

The following is a tentative schedule of activities for the project:

I-94 Resurfacing and Brockton Interchange Schedule

<i>Activity</i>	<i>Anticipated Date</i>
EA/EAW.....	January 2019
Public Hearing/Opportunity for Public Hearing.....	January 2019
Preliminary Design Layout.....	November 2018
EIS Need Determination.....	May-June 2019
Right of Way Acquisition.....	Summer 2019
Begin Construction	Spring 2020
Project Completion.....	Fall 2021

IV. SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS (SEE)

This section discusses environmental impacts of alternatives identified in the Alternatives section. It contains two sub-sections:

- State Environmental Assessment Worksheet
- Additional Federal Issues

The EAW is a standard format used in Minnesota for environmental review of projects meeting certain thresholds at Minnesota Rule 4410.4300. Federal environmental regulations not addressed on the EAW are addressed in separate sub-section.

A. ENVIRONMENTAL ASSESSMENT WORKSHEET (EAW)

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at: <http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm>.

The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item or can be addresses collectively under EAW Item 19.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the EQB Monitor. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project Title

I-94 UBOL Resurfacing Maple Grove to Rogers and Brockton Interchange

2. Proposer

Agency: Minnesota Department of Transportation
Contact: Jerome Adams
Title: Metro District Project Manager
Address: 1500 West County Road B2
Address 2: Roseville, MN 55113
Phone: 651-234-7611
Email: jerome.adams@state.mn.us

3. RGU

Agency: Minnesota Department of Transportation
Contact: Rick Dalton
Title: Environmental Coordinator
Address: 1500 West County Road B2
Address 2: Roseville, MN 55113
Phone: 651-234-7677
Email: richard.dalton@state.mn.us

4. Reason for EAW Preparation (check one)

Required:

EIS Scoping

Mandatory EAW

Discretionary:

Citizen petition

RGU discretion

Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

Highway Projects: 4410.4300, Subpart 22, B – “For construction of additional travel lanes on an existing road for a length of one or more miles...”

Highway Projects: 4410.4300, Subpart 22, C – “For the addition of one or more new interchanges to a completed limited access highway...”

5. Project Location

County: Hennepin

City/Township: City of Rogers, City of Dayton, City of Maple Grove

PLS Location: Sections 5, 6, 8, 9, 14, 16, 17, 21, 22, 26, 27; Township 119N; Range 22W

Sections 23, 24, 25, 31, 32, 36; Township 120N; R22W

Watershed (81 major watershed scale): Mississippi River Watershed, North Fork Crow River

GPS Coordinates: 45.158, -93.513

See Appendix A for the following:

- County map showing the general location of the project (Figure 1 and Figure 3)
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (Figure 2 a and Figure 2 b)
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan (Figures 6A- 6G).

6. Project Description

a) Provide the brief project summary to be published in the EQB Monitor, (approximately 50 words).

The I-94 UBOL Resurfacing and Brockton Interchange Project will resurface 9.6 miles of the existing pavement on I-94 from the I-494/I-694 interchange in Maple Grove to TH 101 in Rogers, Minnesota. The project also includes the construction of a new interchange to the east of Brockton Lane in the City of Dayton. Finally, the project will also involve the addition of a new travel lane in both the westbound and eastbound directions of I-94 from TH 610 to TH 101; pavement improvements and expansion of the Elm Creek Rest Area; modifying trails/sidewalks within the MnDOT right of way to make them ADA compliant; replacing deficient stormwater management systems; and constructing a commercial vehicle enforcement lane in the westbound direction between CSAH 81 and TH 101 in the City of Rogers.

b) Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

Refer to Section III of the EA, starting on page 11, which includes a complete description of the preferred and other alternatives, physical manipulation of the environment, and timing and duration of the project. This project will not produce wastes or involve significant demolition.

c) **Project Magnitude**

Project magnitude data are listed in Table 5.

Table 5: Project Magnitude

Total Project Acreage	Approximately 229 Acres
Linear project length	Approx. 9.6 miles
Number and type of residential units	NA
Commercial building area (in square feet)	NA
Industrial building area (in square feet)	NA
Industrial building area (in square feet)	NA
Other uses – specify (in square feet)	NA
Structure height(s)	25-feet (Brockton interchange)

d) **Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.**

Please refer to **Section II** for the purpose and need for the project, which starts on **page 2**.

The project is being led by MnDOT Metro District.

The project will benefit motorists who will have a smoother ride, shorter travel time, and improved mobility on I-94 between the I-494/I-694 interchange and TH 101.

The project will also benefit businesses near the proposed Brockton interchange who will gain increased visibility and access from I-94.

Finally, the project will benefit residents and businesses near the proposed Brockton interchange who will have better local access to/from I-94.

e) **Are future stages of this development including development on any other property planned or likely to happen? __ Yes X No**

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

f) **Is this project a subsequent stage of an earlier project? __ Yes X No**

If yes, briefly describe the past development, timeline and any past environmental review.

7. **Cover Types**

Estimate the acreage of the site with each of the following cover types before and after development

Cover types within the general project right of way are listed in **Table 6**. These cover types represent all the cover types within the right of way. Not all the right of way will be disturbed. Approximately 229 acres of land will be disturbed versus the 605 acres that exist within the right of way. The cover type calculations in **Table 6** were evaluated within a larger right of way study area.

Table 6: Cover Types Before and After Project

Cover Type	Before (acres)	After (acres)
Cropland	27.5	18.2
Wooded/forest	23.7	17.32
Wetlands	9.7	5.43
Brush/Grassland	223.4	198.55
Impervious surface	296.9	330.6
Stormwater Pond	13.1	24.2
Deep water/streams	0.6	0.6

Cover Type	Before (acres)	After (acres)
Lawn/landscaping	10.8	10.8
Other (describe)		
Total	605.7	605.7

8. Permits and Approvals Required

List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Unit of Government	Type of Application/Approval	Status
Federal		
Federal Highway Administration (FHWA)	Environmental Assessment	Approved
	Finding of No Significant Impact (anticipated outcome)	To be requested
MnDOT CRU on behalf of FHWA	Section 106 (Historic/Archaeological)	Consultation Completed
	Tribal Consultation	Completed
MnDOT OES on behalf of FHWA	Section 7 (Endangered Species Act)	Consultation completed
U.S. Army Corps of Engineers (USACE)	Section 404 Permit (Transportation General Permit for I-94 improvements and Letter of Permission for proposed Brockton interchange)	To be obtained
State		
MnDOT	Environmental Assessment Worksheet	Approved
	EIS Need Decision	To be obtained
	Wetland Conservation Act Replacement Plan	To be obtained
	Staff Approved Geometric Layout	To be obtained
	Preliminary Construction Plans	To be obtained
Minnesota Pollution Control Agency	Section 401 Certification	To be obtained
	National Pollutant Discharge Elimination System (NPDES CSW) Stormwater Permit	To be obtained
Minnesota Department of Natural Resources	License to Cross Public Lands and Waters	To be obtained if necessary
	Construction Dewatering	To be obtained by contractor, if necessary
	Public Waters Work Permit	To be obtained
	NHIS Review	Consultation completed
Local		
City of Maple Grove	Municipal Consent/Project Approval	To be obtained
City of Dayton	Municipal Consent/Project Approval	To be obtained
City of Rogers	Municipal Consent/Project Approval	To be obtained
Hennepin County	Project Approval	To be obtained
Elm Creek Watershed Management Organization	Plan Approval	To be obtained

Unit of Government	Type of Application/Approval	Status
Private		
BNSF	Railroad Agreement	To be obtained

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19 [see EAW Item No. 19 for Cumulative Effects Discussion].

9. Land Use

a) Describe:

- i. *Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.*

Land Use

The project is located in the cities of Maple Grove, Dayton, and Rogers in Hennepin County (**Figure 3**). In Maple Grove, the land use along I-94 is primarily residential and commercial (**Figure 10A**). North of Maple Grove Parkway, the land use shifts to more rural, with agricultural areas becoming more prominent. Rice Lake, Fish Lake, and Elm Creek are adjacent to the project within Maple Grove. Various wetlands and roadside ditches are also present along the project corridor.

The land use surrounding the project within Dayton, where the Brockton interchange is proposed, is currently agricultural and industrial (**Figure 10B**). Several wetlands and small, scattered wooded areas are also located within the Brockton Interchange project area.

Within Rogers, the land use includes retail, commercial, agricultural, industrial, and undeveloped (**Figure 10B**).

City-Owned Land

The City of Dayton has purchased land dedicated to right of way for the Brockton interchange.

Park and Trails

Several trails are in proximity to the project area (**Figure 11**) including Medicine Lake Regional Trail, Rice Lake Trail, and various local trails. No trails are proposed to be permanently impacted by the project. Medicine Lake Regional Trail and Rice Lake Trail both pass under I-94. The segments of Medicine Lake Regional Trail and Rice Lake Trail that pass under I-94 have been issued Limited Use Permits (LUP) by MnDOT for construction, maintenance, and operation of the trail within MnDOT right of way (**Appendix D**). The LUPs are subject to cancellation by MnDOT for any other highway or transportation purpose, with short-term (60-90 days) notice. Based on this language, it has been determined that the portions of the trails covered by the LUPs do not constitute a long-term public interest. Therefore, portions of the trails covered by these LUPs are not Section 4(f) resources and are not subject to Section 4(f) protections.

Farmland

The Brockton interchange will result in impacts to land zoned as agricultural in the City of Dayton. The city categorizes this land as either prime farmland, farmland of statewide importance, or prime farmland if drained (**Figure 12**). See farmland impacts in **Section 9b**.

- ii. *Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.*

The portion of the project located within the City of Maple Grove is identified in the city's Comprehensive Plan as Commercial, Low-Medium Density Residential, Medium-Density Residential,

High-Density Residential, Mixed-Use Development, Park, Golf Course, or Protected Open Space, and Wetland or Floodplain (Figure 13A).

The City of Dayton identifies the land adjacent to I-94 as Industrial in their Future Land Use map. The land designated for the proposed Brockton interchange has been dedicated as right of way. Dayton's Future Land Use Map is shown on Figure 13B.

The portion of the project located within the City of Rogers is dedicated as right of way in the city's 2030 Comprehensive Land Use Plan (Figure 13B). Land adjacent to I-94 is designated as Industrial, Mixed Use – Neighborhood, Commercial, Open Water/Wetland, and Business Campus.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

Zoning Ordinances

The City of Maple Grove's Zoning Map (Figure 14A – 14B) allows for a variety of land uses along I-94 corridor but primarily consists of business park, commercial, or residential-agricultural type uses. The shoreland overlay district (1,000 feet from edge of any DNR designated lake) extends into the project area near Fish Lake and Rice Lake. Coordination with DNR and other jurisdictions is being conducted as a part of any sections of this document.

The City of Dayton's Zoning Map (Figure 14C) allows for development in the area along the I-94 corridor as primarily Light Industrial and Business Park, which are compatible uses to the project.

The City of Rogers' Zoning Map (Figure 14C – 14D) allows for mostly industrial and business along the I-94 corridor.

SHORELAND DISTRICTS

The DNR designates minimum shoreland management standards to lakes greater than 25 acres (10 acres in municipalities) and rivers with drainage area two square miles or greater. The Shoreland Management Act regulates all land within 1,000 feet of a lake and 300 feet of a river and its designated floodplain. The DNR requires municipalities to adopt these or stricter standards. In the project area, the cities (Maple Grove, Dayton, and Rogers) have each adopted shoreland regulations, which are described below.

CITY OF MAPLE GROVE

The City of Maple Grove Zoning Ordinance defines shoreland districts within the city and regulates the placement of structures within shoreland areas. The city defines shoreland as land being located within 1,000 feet from the Ordinary High Water (OHW) of a water basin or 300 feet from a watercourse designated by the DNR. The following water bodies within or near the project area are designated in the city's Shoreland Ordinance: Fish Lake and Rice Lake. The following streams within or near the project area are designated in the city's Shoreland Ordinance: Elm Creek and Rush Creek.

CITY OF DAYTON

The City of Dayton's Shoreland ordinance regulates the use of shoreland areas; the size, shape, and arrangement of lots; the size, type, and location of structures on lots; the installation and maintenance of water supply and waste treatment systems; the grading and filling of any shoreland area; and the cutting of shoreland vegetation. The following stream within or near the project area is designated in the city's Shoreland Ordinance: Rush Creek.

CITY OF ROGERS

The City of Rogers Shoreland Protection Ordinance applies to Fox Creek, as defined in Section 109-22 of their City Code. The ordinance regulates the use of public waters; the size and shape of lots; the use, size, type, and location of structures on lots; the installation and maintenance of

water supply and waste treatment systems; the grading and filling of any shoreland area; the cutting of shoreland vegetation; and the subdivision of land. Fox creek is not within the project area.

Floodplain Ordinance

The Federal Emergency Management Agency (FEMA) identifies 100-year floodplain adjacent to the project area at Fish Lake, Rice Lake, Elm Creek, and Rush Creek, east and west of I-94 near 105th Avenue, and north and south of the proposed Brockton Interchange (**Figure 15A – 15G**). Impacts to floodplains require permitting from various agencies and regulatory bodies. A floodplain impact can be described as a disturbance, structure or fill within a 100-year FEMA floodplain Boundary resulting in a change in flood elevation. The following agencies regulate floodplains and floodways adjacent to the project:

- Federal Emergency Management Agency (FEMA).
- Department of Natural Resources (DNR).
- Elm Creek Watershed Management Commission (ECWMC)
- Adjacent Municipalities (Dayton, Maple Grove, and Rogers)

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

Executive Order (EO) 1988 requires all federal agencies to evaluate and, to the extent possible, avoid adverse impacts to floodplain areas. FEMA, through the National Flood Insurance Program (NFIP) regulates floodplains. There are FEMA 100-year floodplains and floodways within the project area as shown on **Figure 15A – 15G**. Placing fill or structures/buildings in the floodway is generally not allowed and would require mitigation to offset the lost floodway storage. Placing fill or structures/buildings in the floodplain is allowed with restrictions.

MN DEPARTMENT OF NATURAL RESOURCES

On behalf of FEMA, the DNR regulates activities that may impact floodplain including activities such as construction, excavation, or deposition of materials over or under water that may affect flood stage, floodplain, and floodway boundaries. The DNR regulates floodplain management through the State Floodplain Management Program. The program oversees the NFIP for Minnesota authorized by FEMA. The DNR does not have a floodplain mitigation requirement.

ELM CREEK WATERSHED MANAGEMENT COMMISSION

The entire project area is within the ECWMC. The ECWMC prohibits any permanent alteration or fill below the 100-year critical flood elevation without first obtaining an approved project review from the Commission or member cities. The Commission prohibits activities that alter or cause a net decrease in flood storage capacity within the 100-year floodplain unless compensatory floodplain mitigation is provided at a 1:1 ratio by volume and it is demonstrated that the 100-year floodplain will not be impacted. Suitable calculations must be submitted demonstrating that filling in the flood fringe will not impact the 100-year flood profile. The flood fringe district includes areas within Zones AE that have a floodway delineated on the flood insurance rate map but are located outside of the floodway.

MUNICIPALITIES

The legislature of the State of Minnesota has delegated the responsibility to local government units to adopt regulations designed to minimize flood losses. Dayton, Maple Grove, and Rogers have floodplain ordinances which apply to all lands within the jurisdiction of each city. Dayton, Maple Grove, and Rogers current floodplain ordinances are described in Section 1001.09, Section 36. Article VII. Division 4, and Section 125-226, respectively, of the City's Code of Ordinances. This division applies to all lands within the jurisdiction of the city shown on the official zoning map and/or the attachments to the map as being located within the boundaries of the floodway, flood fringe, or general floodplain districts.

The cities of Dayton, Rogers and Maple Grove applicable floodplain requirements are generally similar.

- Floodway conditional uses must not cause any increase in the stage of the 1% change or regional flood.
- Developments within the floodplain must not adversely affect the hydraulic capacity of the channel and adjoining floodplain.
- Public Transportation Facilities must be elevated to the regulatory flood protection elevation (RFPE). The RFPE is defined as 1 foot above the flood elevation plus any increases caused by impacts to the floodplain that result from designation of a floodway.

Per Section 6.3.4 of the City of Dayton's Local Surface Water Management Plan, dated December 2007, the City of Dayton prohibits activities that impact the storage volume within the 100-year floodplain unless compensatory floodplain mitigation is provided at a 1:1 ratio by volume and demonstrated that the 100-year floodplain will not be impacted, as described by ECWMC's requirements.

Per Section 7.4.1 of the City of Maple Grove's Local Surface Water Management Plan, dated February 2009, the City of Maple Grove will modify its floodplain management ordinance to meet ECWMC's requirement of compensatory storage at 1:1 ratio for floodplain fill.

b) Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

i. Land Use

The project is consistent with the land uses and zoning guidance within the project area. The bulk of the land is guided for industrial, commercial, or recreational/open space areas. Careful land use planning has been conducted in Dayton to accommodate the future interchange, therefore there is consistency with right of way needs and future land uses in that area. The interchange will provide economic development and accessibility opportunities that are consistent with the industrial existing and future land uses in that area.

ii. Shoreland Districts

Within the project area, Fish Lake, Rice Lake, Elm Creek, and Rush Creek are within shoreland zoning areas. These waterbodies are within the City of Maple Grove and the project crosses portions of the shoreland zoning area. Elm Creek in the City of Dayton will not be impacted by this project. The proposed widening is within the median through the portion of the project within the Shoreland District for Rush Creek. Therefore, there are no impacts due to the project.

Within this area, the project will consist of resurfacing via an unbonded concrete overlay on the existing alignment and is compatible with the City's shoreland zoning.

iii. Floodplain

Figures 15A – 15G shows the FEMA flood insurance rate map (FIRM) within the project corridor (Community Panel No. 27053C 0044 F, 0180 F, 0176F, 0063F revised November 2016). There is FEMA floodplain associated with Rice Lake, Elm Creek, Rush Creek, and the North Fork of Rush Creek within the project limits. Rice Lake, Elm Creek, and Rush Creek are categorized as Zone AE floodplain. The southwest segment of Brockton Interchange, near CSAH 101, is within Zone A floodplain for the North Fork of Rush Creek. There is also a designated floodway within the project limits, associated with Rush Creek. The applicable floodplain elevations are as follows:

- Rush Creek at the existing box culvert (Bridge no. 91178) under I-94 912.33 (NAVD 88)
- Rush Creek at the wetland confluence with the North Fork, upstream of the existing box culvert 913.33 (NAVD 88)
- Rice Lake Floodplain 894.00 (NGVD 29)

- North Fork of Rush Creek adjacent to Brockton Interchange 913.33 (NAVD 88)

The DNR has accepted the Base Flood Elevation of 913.33, for the Zone A segment of the North Fork of Rush Creek at Brockton Interchange. See correspondence in **Appendix E**.

Figures 15A – 15G and **Table 7** shows the locations where the project impacts FEMA floodplain. There are no impacts at Rice Lake or Elm Creek. The existing bridges on I-94 in this area will not be replaced as a part of this project.

Table 7: Floodplain Encroachment Locations

Floodplain	Type of Encroachment	Length
Rice Lake DNR PWI No. 27-0116, Existing Bridge No 27969	Transverse	50 feet
Rice Lake DNR PWI No. 27-0116, Existing Bridge No 27968	Transverse	50 feet
Rice Lake	Longitudinal	4740 feet
Rush Creek, Existing Bridge No 91178	Transverse	30 feet
Rush Creek	Longitudinal	1200 feet
North Fork of Rush Creek	Longitudinal	1400 feet

Floodplain impacts were estimated based on conceptual design of the preferred alternative. There are approximately 1,850 cubic yards of floodplain fill in Rush Creek from the auxiliary lanes on I-94. This fill is also within the floodway which requires additional permitting process through the DNR and FEMA if not mitigated. The primary impacts are associated with fill into the floodplain on the upstream (south) side of bridge number 91178, a dual 10' x 10' box culvert. It is possible to eliminate the floodplain and floodway impacts at the bridge if guardrail is utilized along this segment. There is existing guardrail. The project will be incorporating guardrail at the bridge to eliminate the floodplain and floodway impacts.

The impacts to the northwest of the existing box culvert (approximately 160 cubic yards) can be mitigated by modifications to the existing I-94 eastbound ditch and construction of a proposed BMP to provide compensatory storage. The ditch and BMP are hydraulically connected to the floodplain. The project will be incorporating these measures to mitigate floodplain impacts.

There are approximately 18,590 cubic yards of floodplain fill associated with the Brockton interchange. This fill is within the North Fork of Rush Creek FEMA Zone A floodplain. The fill is primarily a result of Dayton Parkway and CSAH 101 improvements. Several locations, hydraulically connected to the North Fork of Rush Creek, are being vetted for potential floodplain mitigation as shown on **Figures 15A – 15G**. There are no proposed impacts to the existing bridge 27B87 that conveys the North Fork of Rush Creek under CSAH 101.

Per Minnesota Rules, any change that increases the Zone A 100-year floodplain by 0.5 feet or more requires MN DNR review. Increase the elevation by a foot or more and Federal review is also required. Any change that increases the Zone AE 100-year floodplain by 0.00 feet or more requires DNR and FEMA review. Based on the above assessment, no significant floodplain impacts are expected, and the project is compatible with the floodplain zoning.

iv. Farmland

Approximately 30.9 acres of potential farmland exist within the project area, 27.5 acres of which are prime or unique farmlands (**Figure 12**). Of the 27.5 acres, approximately 9 acres are actively being farmed and the remaining is either wooded or wetland. Farmland will be converted to road right of way for construction of the Brockton interchange. The City of Dayton owns a portion of the land proposed for the interchange and currently leases it out for farming practices. This land has been acquired for right of way. Since the right of way was acquired, the preferred alternative for the Brockton interchange design has changed and will have a reduced right of way impact. In the interim, agricultural uses will continue. The project will not prohibit the use of non-converted farmland for current farming practices.

Coordination with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) has been completed as required by the Farmland Policy Protection Act (42 U.S.C. § 4201 et seq.). See the attached NRCS Form AD 1006 (**Appendix F**).

c) Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

The project is compatible with the cities' long-range plans for the area. Any environmental impacts to the surrounding land uses are proposed to be mitigated in other sections of this document.

i. Floodplain

This project will not result in any significant floodplain impacts for the following reasons:

- No significant interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evaluation route.
 - All roadway grades will be constructed above the 100-year floodplain elevation. There is not recorded evidence of overtopping or flooding of the roadway at the Rice Lake or Rush Creek bridge crossings under I-94.
- No significant adverse impact on natural or beneficial floodplain values are anticipated to result from this project.
 - No fisheries impacts are anticipated. Construction operations that may impact the floodplain will not occur during fish spawning and migration periods without approval from the MnDNR. Exact dates and allowable work will be subject to DNR permit conditions.
 - The existing bridges/box culvert structure will not be replaced. Therefore, fish movements should not be affected.
 - Wetland impacts associated with the floodplain have been minimized during the preliminary design phase. Additional minimization measures (guardrail, steeper slopes) will be further considered during final design.
 - No threatened or endangered plants or animals have been identified in the floodplains.
 - Appropriate turf establishment and erosion control measures will be used.
- No significant increased risk of flooding will result.
 - There are no known flooding problems at the Rush Creek or Rice Lake crossings.
 - There is no apparent flood damage potential upstream because no changes are proposed to the existing bridges
 - No significant change in the headwater or tailwater elevations will result. The floodplain impacts due to Brockton interchange will be mitigated at 1:1 in accordance with local ordinances.
- This project should not result in any incompatible floodplain development.
 - Dayton, Rogers, and Maple Grove have floodplain ordinances that regulate floodplain development. The ordinances conform to the MnDNR floodplain management guidelines.

The project involves widening the highway corridor to add lanes on its existing alignment, avoiding encroachment into the floodplain is nearly impossible given the proximity of the floodplain. The proposed improvements are not expected to result in significant impacts to the floodway or the 100-year water surface elevation of any of the adjacent FEMA regulated waterbodies. The Floodplain Assessment is included in **Appendix Q**.

10. Geology, Soils and Topography/Land Forms

- a) **Geology – Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.**

The project will include approximately 9.6 miles of roadway improvements that cross a Wisconsin Age surficial glacial terrain with 50 to over 200 feet of glacial silty till overlying sedimentary Paleozoic age bedrock. Soils in this area are principally derived from glacial till with alluvium along the stream terraces.

Ordovician and Cambrian age units of silty to sandy textured sandstone, dolostone, shale, and calcareous limestone composition underlay the thick glacial till in the project area. Much of the project area overlies Upper Cambrian age sandstone, siltstone, shale, and dolostone bedrock. The bedrock layers shallowly dip towards the downtown Minneapolis-St. Paul area. The Twin Cities Basin overlies younger, Ordovician age sedimentary bedrock. The southeast corner of the project area encounters this Ordovician age bedrock, which is mostly composed of shale, dolomitic limestone, and sandstone. The bedrock is deeply buried beneath the till. There are no bedrock exposures, no karst features, and no known geologic hazards due to the bedrock within the project area.

Surficial geologic mapping in the area shows the project area overlying Wisconsin age glacial Grantsburg sublobe loamy till underlain by till of the Superior lobe that varies at a depth of 20 to 50 feet throughout the area. The Grantsburg sublobe is an offshoot of the Des Moines lobe. Deposits in which Des Moines lobe sediments overlay or include Superior lobe sediments, such as the deposit underlying the project area, can be further defined as part of the Twin Cities Formation. The midsection of the project area crosses over sandy glacial till interbedded with small gravel deposits and inclusions of post-glacial organic and floodplain alluvial till usually present around stream or creek boundaries. The southeast corner of the project area continues to overly sandy and loamy glacial till and encounters a small inclusion of ice-contact sandy stratified deposits belonging to the Cromwell Formation of the Superior lobe at the I-94 and I-494 intersection.

The Prairie Du Chien-Jordan aquifer is the most heavily used source of groundwater in Hennepin County. However, other near-surface sandy buried, confined, and unconfined aquifers within the thick glacial till and bedrock are also utilized throughout the county. The project area overlies the Prairie Du Chien and Franconia-Ironton-Galesville aquifers. The water table elevations vary widely throughout the length of the project area. A review of well logs within the project area, documented in the Minnesota Department of Health County Well Index, shows a range of well completion depths from 15 to 260 feet with completion intervals in multiple buried glacial aquifers described on well logs as "sand" or "sand & gravel." Several wells in the area encountered bedrock at depths between 160 to 200 feet. The static water levels vary from 4 to 90 feet below the surface are dependent on both the topography and well depth indicating that shallow water levels are local manifestations of unconfined aquifers and in parts of the area there is a direct and rapid connection between surface water and shallow groundwater.

The deeper glacial sediments and deeply buried bedrock do not present any limitations to the proposed roadway project. The shallow subsurface contains materials suitable for road fill and several small sand and gravel deposits are currently utilized near the project area for commercial aggregate. Other aggregate deposits are likely within the area but have not been investigated and mapped.

Excavations, borrow, and grading are expected to be in the upper 20 feet of the existing surface and are not anticipated to encounter geologic bedrock hazards; however, soil limitations for roadways, discussed in more detail below, and a potential to impact shallow alluvial aquifers requires engineering assessments and preparation of plans and specifications that acknowledge the limitations and risks.

- b) Soils and topography – Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

Figures 16A – 16D shows the soil classification codes for soils within and near the project area. Topography in the project area is generally flat. Elevations range from 892 feet near Rice Lake to 982 feet in Rogers.

Soil data were obtained from the NRCS Web Soil Survey for Hennepin County. Table 8 lists the soils present, acreages and percent, within approximately 500 feet of the project limits. They also contain information on percent slopes and erodibility. This information was used to assess various soil limitations such as hydric characteristics and the limitations for local roads and streets.

Table 8: Soil Survey – Hennepin County, Minnesota (MN 053)

Map Symbol	Name	Percent Slopes	HEL Determination	Acres	Percent of Project Area
L9A ⁽³⁾	Minnetonka silty clay loam	0-2	NHEL	27.2	1.4%
L14A ⁽²⁾	Houghton muck	0-1	NHEL	23.1	1.2%
L15A ⁽¹⁾	Klossner, Okoboji, and Glencoe soils, ponded	0-1	NHEL	2.4	0.1%
L16A ⁽¹⁾	Muskego, Blue Earth, and Houghton soils, ponded	0-1	NHEL	27.4	1.4%
L18A ⁽³⁾	Shields silty clay loam	0-3	NHEL	24.1	1.3%
L21A ⁽³⁾	Canisteo clay loam	0-2	NHEL	3.5	0.2%
L22C2 ⁽²⁾	Lester loam	6-10	PHEL	168.5	8.8%
L22D2 ⁽¹⁾	Lester loam	10-16	HEL	43.0	2.2%
L22E ⁽¹⁾	Lester loam	10-22	HEL	10.0	0.5%
L23A ⁽³⁾	Cordova loam	0-2	NHEL	290.0	15.1%
L24A ⁽³⁾	Glencoe clay loam	0-1	NHEL	127.7	6.7%
L25A ⁽⁴⁾	Le Sueur loam	1-3	NHEL	110.2	5.8%
L26A ⁽⁴⁾	Shorewood silty clay loam	1-3	NHEL	2.9	0.2%
L26B ⁽⁴⁾	Shorewood silty clay loam	3-6	NHEL	9.5	0.5%
L26C2 ⁽²⁾	Shorewood silty clay loam	6-12	HEL	7.8	0.4%
L27A ⁽¹⁾	Sucker creek loam	0-2	NHEL	10.3	0.5%
L35A ⁽⁴⁾	Lerdal loam	1-3	NHEL	17.7	0.9%
L36A ⁽³⁾	Hamel, overwash-Hamel complex	0-3	NHEL	66.0	3.4%
L37B ⁽⁴⁾	Angus loam	2-6	NHEL	220.8	11.5%
L40B ⁽⁴⁾	Angus-Kilkenny complex	2-6	NHEL	148.2	7.7%
L41C2 ⁽²⁾	Lester-Kilkenny complex	6-10	PHEL	29.0	1.5%
L41D2 ⁽¹⁾	Lester-Kilkenny complex	10-16	HEL	24.3	1.3%
L41E ⁽¹⁾	Lester-Kilkenny complex	16-22	HEL	6.9	0.4%
L44A ⁽⁴⁾	Nessel loam	1-3	NHEL	111.4	5.8%
L45A ⁽³⁾	Dundas-Cordova complex	0-3	NHEL	45.7	2.4%
L49A ⁽¹⁾	Klossner soils, depressional	0-1	NHEL	51.0	2.7%

Map Symbol	Name	Percent Slopes	HEL Determination	Acres	Percent of Project Area
L50A ⁽¹⁾	Muskego and Houghton soils	0-1	NHEL	11.8	0.6%
L58B ⁽⁴⁾	Koronis-Kingsley complex	2-6	NHEL	39.3	2.1%
L58C2 ⁽²⁾	Koronis-Kingsley complex	6-12	NHEL	20.3	1.1%
L58D2 ⁽¹⁾	Koronis-Kingsley complex	12-18	HEL	5.0	0.3%
L59A ⁽³⁾	Forestcity – Lundlake, depressional, complex	0-3	NHEL	2.0	0.1%
L61C2 ⁽²⁾	Lester-Metea complex	6-12	NHEL	3.6	0.2%
L64A ⁽¹⁾	Tadkee-Tadkee, depressional, complex	0-2	NHEL	9.7	0.5%
L70C2 ⁽²⁾	Lester-Malardi complex	6-12	PHEL	4.9	0.3%
L72A ⁽³⁾	Lundlake loam, depressional	0-1	NHEL	0.9	0.0%
L132A ⁽³⁾	Hamel-Glencoe complex	0-2		17.6	0.9%
U1A ⁽¹⁾	Urban land – Udorthents, wet substratum, complex	0-2	NHEL	0.9	0.0%
U2A ⁽¹⁾	Udorthents, wet substratum	0-2	NHEL	30.6	1.6%
U6B ⁽¹⁾	Urban land – Udorthents (cut and fill land) complex	0-6	NHEL	109.5	5.7%
W ⁽¹⁾	Water	N/A	N/A	50.2	2.6%
Total				1,915.0	100.0%

Source: U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Soil Survey for Hennepin County, Minnesota

HEL = Highly Erodible Land, PHEL = Potentially Highly Erodible Land, NHEL = Not Highly Erodible Land

- 1) Not prime farmland
- 2) Farmland of statewide importance
- 3) Prime farmland if drained
- 4) All areas are prime farmland

A review of the hydric soils shows that hydric soils exist across approximately 40% of the project area indicating shallow water tables, soil saturation, and inundation. Soils are classified in hydrologic groups A, B, C, and D. Soils in Groups A and B have low to moderately low runoff potential when thoroughly wet. Soils in Group C and D have moderately high to high runoff potential when thoroughly wet.

Approximately 229 acres of soil will be graded for the proposed project. The estimated volume of soil excavation is approximately 320,479 cubic yards. Project soils do not present any situations that will require unique soil stabilization methods, soil correction, or other measures. Poor soils within the project area will be excavated and replaced with material suitable for roadway subgrades.

During construction, drainage and erosion control measures will be implemented as part of the project design, contracts and the NPDES Permit for Construction Site Activities. Temporary features such as silt fence, site stabilization with temporary vegetation, temporary ponds, drainage control, and treatment features will be necessary for each phase of the project. More details are discussed in **Section IV. 11.b.ii**. In addition, a Stormwater Pollution Prevention Plan (SWPPP) will be developed for the project. All disturbed areas will be revegetated in accordance with the SWPPP and related permitting requirements.

Permanent drainage improvements, storm water rate control and water quality treatment features will be required as post construction water management features. More information on permanent treatment is found under the following section (Water Resources).

11. Water Resources

a) Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

- i. *Surface water – lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.*

Various water resources exist within the proposed project limits including lakes, wetlands, streams, and ditches (**Figures 17A – 17D**). Rice Lake (PWI No. 116P), Fish Lake (PWI No. 118P), and Elm Creek (No. M-062) are located adjacent to the project between Fish Lake interchange and Maple Grove Parkway. An unnamed stream (M-062-008) crosses the corridor between Maple Grove Parkway and TH 610. An unnamed wetland (PWI No. 114W) and Rush Creek (M-062-004) also cross the project corridor north of TH 610. North of the proposed Brockton interchange, one unnamed Public Water (PWI No. 296W) is located west of I-94 and southeast of TH 101. At the proposed Brockton interchange, one DNR Public Water (No. 307W) is located west of I-94.

A Level 2 wetland delineation was conducted within the project area in July and August 2018. Seventeen wetlands were identified within the project area. In addition to wetlands, 15 stormwater ponds and numerous wet ditches were also identified. See **Section IV.A.11.b.iv** for more details on wetlands.

No trout streams or lakes, migratory waterfowl feeding/resting areas, wildlife lakes, or outstanding resource value waters were identified within the project limits.

Based on a review of the Section 303(d) List and MPCA website, the following impaired waters were identified within 1 mile of the project area (**Table 9**) and are shown on **Figures 17A – 17D**:

Table 9: Impaired Waters

Waterbody Name	AUID	Impairment (Pollutant)	TMDL approved for:
Cedar Island Lake	27-0119-00	Nutrient/eutrophication biological indicators	Nutrients
Fish Lake	27-0118-00	Mercury in fish tissue, Nutrient/eutrophication biological indicators	Hg-F; Nutrients
Elm Creek	07010206-508	Aquatic macroinvertebrate bioassessments, Chloride, Dissolved oxygen, Fishes bioassessments, Escherichia coli	Cl-, DO, E. Coli, Fish Bioassessment, Invertebrate Bioassessment
Rice Main Lake	27-0116-01	Nutrient/eutrophication biological indicators	Nutrients
Weaver Lake	27-0117-00	Mercury in fish tissue	Hg-F
Rush Creek, South Fork	07010206-732	Aquatic macroinvertebrate bioassessments, Chloride, Dissolved oxygen, Fishes bioassessments, Escherichia coli	Cl-, E. Coli, Fish Bioassessment, Invertebrate Bioassessment
Rush Creek	07010206-528	Aquatic macroinvertebrate bioassessments, Dissolved oxygen	DO, E. Coli, Fish Bioassessment, Invertebrate Bioassessment

Hg-F = Mercury in fish tissue, Cl- = Chloride, DO = Dissolved oxygen

AUID = Assessment Unit Identifier

Impaired waters on the Section 303(d) List are subject to a Total Maximum Daily Load (TMDL) study, which is an assessment of a water body's ability to sustain itself from pollution. The TMDL study

process consists of data collection and assessment, listing those waters not meeting water quality standards as impaired waters, developing a pollution reduction plan, implementing the plan, and then evaluating the implementation by collecting more data. The impairment for mercury in Fish Lake and Weaver Lake is addressed in Minnesota's Statewide Mercury TMDL that was approved by the U.S. EPA in March 2007. Nutrient impairments to Fish Lake and impairments to Rice Lake, Elm Creek, Cedar Island Lake, Rush Creek, and the South Fork of Rush Creek are addressed in The Elm Creek Watershed Management Organization Watershed-wide TMDL and Protection and Implementation Plan that was approved by the U.S. EPA in June 2017.

- ii. *Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.*

Depth to Groundwater

Depth to groundwater for the project area varies from 4 to 90 feet based on the data for individual wells. During the Phase II drilling investigation, the depth to shallow groundwater throughout the project area was encountered between 1.25 to 24.6 feet below ground surface.

MDH Wellhead Protection Area

Two wellhead protection areas, Maple Grove and Rogers South, are located within the project area (**Figures 18A – 18D**). A wellhead protection plan has been created for the wellhead protection areas.

The project area is located along the I-94 roadway between Maple Grove and Rogers. Both towns utilize Quaternary Buried Artesian Aquifers (QBAA) for drinking water supply. According to the Minnesota Department of Health (MDH), two DWSMAs have been determined and lie within the project area. The project boundaries encounter a DSWMA (MN-00571) in Maple Grove and a DWSMA (MN-00633) in Rogers (**Figures 18A – 18D**). Minnesota Department of Health and Minnesota Pollution Control Agency (MPCA) guidance will be used to evaluate the feasibility of stormwater infiltration practices within the wellhead protection area. The MPCA prohibits infiltration best management practices within high and very high vulnerability DWSMAs.

The eastern terminus of the project is located adjacent to a moderate to high vulnerability DWSMA and Wellhead Protection Area. In this area, the project consists of resurfacing and will not disturb soils outside of the right of way. Infiltration is not acceptable in high vulnerability DWSMA based on the MDH guidance due to the potential for adverse impacts to the aquifer. The western project terminus is located within a low vulnerability DWSMA.

Onsite and Nearby Wells

The Minnesota Department of Health County Well Index was reviewed, and forty wells were identified within a 500-foot boundary around the project area. Identified wells were scattered throughout the project area and primarily serve domestic use. Twenty-six of the wells were noted as active, and indicated uses of the wells included domestic, industrial, commercial, monitoring, irrigation, and dewatering. Fourteen wells within the project area and 500-foot boundary were identified as sealed and are no longer in use. Groundwater depth ranged from 4 to 90 feet throughout the length of the project area.

Figures 18A – 18D shows the wells and **Table 10** lists the well, its status, its use, and its groundwater elevation. Well logs are available in **Appendix G**.

Any wells that will be impacted by the project will be sealed by a licensed well contractor according to Minnesota Rules, Chapter 4725, or be relocated and coordinated with the MPCA and MDH.

Table 10: Project Area Wells

Well ID	Status	Use	Water Elevation (feet)
435834	Sealed	Domestic	35
612314	Active	Domestic	60
587146	Active	Domestic	63
547632	Active	Domestic	58
485741	Active	Industrial	65
435887	Active	Domestic	20
579120	Active	Domestic	70
439969	Active	Domestic	65
574013	Active	Domestic	65
524226	Sealed	Domestic	45
556724	Active	Domestic	55
401401	Active	Domestic	55
581548	Active	Domestic	50
137728	Active	Domestic	73.5
204775	Active	Domestic	45
568771	Sealed	Monitor Well	4.4
568739	Sealed	Monitor Well	4
568740	Sealed	Monitor Well	4
568741	Sealed	Monitor Well	5
475695	Sealed	Monitor Well	7.8
495978	Sealed	Monitor Well	7
495977	Sealed	Monitor Well	7
492564	Sealed	Monitor Well	8.7
492563	Sealed	Monitor Well	9.9
475696	Sealed	Monitor Well	8
500346	Active	Domestic	90
505628	Active	Commercial	81
169562	Active	Domestic	75
169565	Active	Domestic	80
559029	Active	Domestic	20
439843	Active	Commercial	70
439865	Active	Commercial	72
457901	Sealed	Test Well	16
457298	Active	Domestic	8
458521	Active	Domestic	22
460815	Active	Domestic	20
688314	Active	Elevator	Unknown
458823	Active	Irrigation	28
578919	Active	Industrial	80
745605	Sealed	Dewatering	20

b) Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. **Wastewater – For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.**

1) **If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.**

This section is not applicable as the proposed project will not generate any wastewater nor discharge wastewater to a publicly owned treatment facility.

2) **If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.**

This section is not applicable as the proposed project will not generate any wastewater nor discharge wastewater to a subsurface sewage treatment system.

3) **If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.**

This section is not applicable as the proposed project will not generate any wastewater nor discharge wastewater to surface water.

ii. **Stormwater – Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.**

Existing Conditions

The majority of the stormwater runoff from the project on I-94 is a rural section and for existing conditions drains into the center median ditch and outside shoulder ditches. Drainage in the future Brockton Interchange discharges to the I-94 right of way, North Fork of Rush Creek, and adjacent wetlands.

There are a few existing stormwater BMPs along the project corridor. There are recently constructed existing wet ponds at TH 610, several small infiltration basins and pretreatment near CSAH 81, BMPs within the Weaver Lake Interchange, wet pond at TH 101, and BMPs within the gore areas of Maple Grove Parkway.

Stormwater runoff from the project corridor is conveyed to multiple different receiving water bodies, including Rice Lake, Fish Lake, Cedar Island Lake, Rush Creek, French Lake, Grass Lake, and the Crow River.

Proposed Conditions Stormwater Management Plan

The proposed project will increase the impervious surfaces within the project area by approximately 33.7 acres compared to existing conditions. Existing drainage patterns will be maintained to the extent that is feasible. The existing rural road section for I-94 will be maintained for proposed conditions for the majority of the project. There are segments of the I-94 median that will be converted to urban section where there are constrictions due to bridges that require the new lanes to be shifted into the median. There are also segments of the Brockton interchange that will be urban section.

The project will need to comply with the National Pollution Discharge Elimination System (NPDES) Minnesota Pollution Control Agency (MPCA) Construction General Permit. The project will be designed to meet the Cities of Maple Grove, Rogers, and Dayton stormwater standards; Hennepin County; MnDOT; and Shingle Creek Watershed Management Commission (SCWMC) and Elm Creek Watershed Management Commission (ECWMC) standards.

The ECWMC requirements for BMPs are the most stringent. The primary regulatory stormwater objectives that will apply to the project are as follows:

- Rate Control: Proposed Conditions 2, 10, and 100-year, 24-hour storm events not exceed existing runoff rates.
- Volume Reduction: 1.1-inch runoff generated from new impervious surfaces must be infiltrated/abstracted.
- Water Quality Treatment: No net increase in total phosphorus (TP) or total suspended solids (TSS) from pre-development land cover to post-development land cover.

The Soil Conservation Survey (SCS) soil survey was used to determine existing soils. The soils onsite are primarily classified as hydrologic soil group (HSG) C and D. Soil borings were not complete as of the writing of this EA. Due to the poorly draining soils, infiltration will likely not be feasible for the majority of the project area. Therefore, filtration will be proposed to meet the ECWMC requirements. Additionally, the rural ditch system along I-94 will continue to provide water quality treatment prior to discharge into the downstream waterbodies.

The proposed stormwater management plan for the project is summarized below:

- Crow River: Stormwater runoff tributary to the Crow River from I-94 west of Cabela's will follow existing drainage patterns. Proposed BMPs within the gore areas of the I-94/TH 101 Interchange are proposed to treat the new impervious from the auxiliary lane. This stormwater runoff is conveyed through the existing I-94 ditch system to the Crow River.
- Grass Lake: Stormwater runoff from I-94 between Cabela's and the CSAH 81 overpass will be conveyed to a proposed filtration system on the northeast side of I-94. These BMPs are also required for the proposed commercial vehicle inspection site located within this subwatershed. Runoff from the BMP will be discharged into the wetlands upstream of Grass Lake.
- French Lake: There is a small portion of the runoff from the proposed improvements on CSAH 81 that is tributary to French Lake. The area generally west of 113th Avenue North to the project limits on CSAH 81 is tributary to French Lake. A portion of CSAH 81 additional impervious surfaces will be routed south into the existing pond in the southwest quadrant of CSAH 81 and Dayton Parkway. This pond is proposed to be expanded.
- Rush Creek: Stormwater runoff from the majority of Brockton interchange and I-94 from CSAH 81 overpass to TH 610 is tributary to Rush Creek. Multiple BMPs are proposed within and adjacent to the gore areas of the Brockton interchange ramp loops and areas of existing MnDOT right of way through this segment. The majority of the increase in impervious surfaces for the project is related to Brockton Interchange. The BMPs within the Brockton interchange are proposed to meet the regulatory requirements for the increase in impervious surfaces in this area.
- Rice Lake: Runoff from I-94 from southeast of TH 610 to roughly Weaver Lake Road interchange is tributary to Rice Lake. There is no net new impervious proposed within this segment of I-94; therefore, no new BMPs are proposed. The new impervious surfaces from the expanded parking at the Rest Area will be treated with proposed BMPs adjacent to the on-ramp from the Rest Area.
- Fish Lake: There are no net new impervious surfaces proposed within the Fish Lake subwatershed. Runoff from I-94 from roughly Weaver Lake Road interchange to just northwest of the I-94/I-494 Interchange is tributary to Fish Lake. No new BMPs are proposed.

- Cedar Island Lake: There are no new impervious surfaces proposed within the Cedar Island Lake subwatershed. Runoff from I-94/I-494 interchange is tributary to Cedar Island Lake located within the SCWMC jurisdictional boundaries. No new BMPs are proposed.

The proposed project will not contribute to the impairments of the receiving waters. The proposed stormwater management system will satisfy permit compliance for the proposed roadway improvements by provide water quality treatment, volume control and rate control. **Figures 19A – 19G** show the preliminary locations of the proposed BMPs. Stormwater BMPs will be designed to meet ECWMC requirements, the most stringent of the applicable regulatory requirements. Additionally, while the advanced temporary widening to accommodate the management of traffic will not be required to provide permanent stormwater BMP's, ditch checks or other similar BMP's may be used within the existing right of way to provide further stormwater management as part of that temporary project.

Stormwater Pollution Prevention Plans

A SWPPP will be developed for this project as required by the MPCA NPDES Construction General Permit. The SWPPP will include MnDOT best management practices for erosion control, sedimentation, and stabilization measures. Some of these measures will include silt fence, bioroll check dams, erosion control blanket, and temporary basins. The type and extent of erosion control BMPs will be dependent on the impairment of the downstream waterbody.

- iii. Water appropriation – Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.*

It is anticipated that activities associated with culvert construction/replacement/ extension will result in water appropriation. Dewatering BMPs will be identified in the SWPPP, and a dewatering plan will be included in the construction documents. BMPs in the SWPPP and dewatering plan will be utilized to ensure that the discharge does not adversely affect receiving waters and the inlet and the discharge points will be adequately protected from erosion and scour. Any other locations determined to require dewatering will be included in the dewatering plan. If dewatering rates during construction exceed 10,000 gallons per day or a million gallons per year, a DNR water appropriation permit will be required and will be acquired by the contractor.

The project will not connect to an existing municipal water supply and will not impact municipal water infrastructure.

- iv. Surface waters*

a. Wetlands – Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.

Aquatic resource delineation identified 22 wetlands, 10 stormwater ponds, two tributaries, one lake, and numerous wet ditches within the project area. Wetland delineation was completed for the project area in July and August 2018 and is currently under review by MnDOT as the Local

Government Unit (LGU) and US Army Corps of Engineers (USACE). Approval of the delineation is expected in January 2019. The locations of aquatic resources are shown on **Figures 17A – 17D**.

Aquatic resource impacts (wetlands, roadside wetland ditches, stormwater features, tributaries, streams, lakes) will not be completely avoidable with construction of the project due to its extent of 9.6 miles of roadway improvements and construction of the new Brockton interchange. Approximately 21.4 acres of aquatic resource impacts will result based on preliminary design construction limits and delineated resources (**Table 11**). However, not all the impacted aquatic resources are regulated.

Table 11: Overview of Aquatic Resource Impacts

Definition	Project Element	Wetland Impacts (acres)	Tributary Impacts (acres)*	Wet Ditch Impacts (acres)*	Stormwater Pond Impacts (acres)*	Total Impact (acres)
Wetlands, tributaries, roadside wet ditches, stormwater features, and ditches	I-94 Added Lanes	2.0	0.4	14.9	0.4	17.7
	Brockton DDI	1.9	0	1.8	0	3.7

**Resources do not fall under the jurisdiction of the Wetland Conservation Act*

AVOIDANCE MEASURES

Several alternatives were analyzed for the proposed project, each resulting in varying levels of wetland impacts. The No-Build Alternative will result in zero acres of wetland impacts but will not address the needs of this project. The resulting wetland impacts from the alternatives and the preferred alternative are discussed in detail in a Wetland Assessment and Two-Part Finding (**Appendix H**).

The preferred alternative for this project is designed to avoid wetlands to the maximum extent where feasible. Wetland impacts from the preferred alternative are estimated to total approximately 3.9 acres (**Table 11**). Wetland types that will be impacted from this project include Type 1/Seasonally Flooded Basin, Type 2/Fresh (wet) Meadow, Type 3/Shallow Marsh, and Type /Shallow Open Water.

MINIMIZATION

To minimize impacts to wetlands, the diverging diamond interchange was chosen as the preferred alternative for the Brockton interchange. This alternative had fewer impacts than the partial cloverleaf, standard diamond, or folded diamond interchange designs. On I-94, side slopes along wetlands were steepened from the normal 1:6 to 1:4 or steeper to reduce wetland impacts.

WETLAND CONSERVATION ACT (WCA) REGULATED WETLANDS

The preferred alternative would result in approximately 3.9 acres of impact to delineated wetlands (**Table 11**). Approximately 1.9 acres of impact is attributed to the proposed Brockton interchange construction. The proposed I-94 UBOL and travel lane construction would result in approximately 2.0 acres of wetland impact. Temporary widening for the I-94 UBOL project is also expected to impact 0.04 acre of wet ditch. Impacts to incidental wetlands such as wet ditches and stormwater ponds do not require compensatory mitigation under the Wetland Conservation Act. A breakdown of wetland impacts, and compensation can be found in the attached Wetland Assessment and Two-part Finding (**Appendix H**).

Wetland impacts resulting from the project are proposed to be mitigated through either wetland banks or through onsite mitigation. Mitigation for the UBOL resurfacing and travel lane construction on I-94 will come from the MnDOT wetland banks. Mitigation for the construction of the proposed Brockton interchange will come from private wetland banks or through construction of onsite mitigation. Mitigation for these wetland impacts will comply with the wetland sequencing and siting requirements of the Wetland Conservation Act and will be replaced through the purchase of approved wetland bank credits at a ratio of 2:1.

As the project progresses, aquatic resource types and impacts will be refined in accordance with the WCA and USACE permitting requirements. Wetland impacts to USACE jurisdictional wetlands will be replaced using approved bank credits. The assumed mitigation for this project will be provided at a minimum 2:1 ratio.

b. Other Surface Waters – Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

In addition to the wetlands described above, various lakes, creeks, and tributaries are located adjacent to the project, including Rice Lake (PWI No. 116P), Fish Lake (PWI No. 118P), Elm Creek (M-062), Rush Creek (M-062-004), and an unnamed tributary (M-062-008). The DNR regulates these waters. The only DNR-regulated water the proposed project will impact is Rush Creek, which will be impacted because of a culvert extension.

WET DITCHES

Numerous wet ditches were delineated within the project area (**Figures 17A – 17D**) and are summarized in **Appendix H, Table 4**. Wet ditches are areas, such as constructed roadside ditches, that have formed wetland characteristics over time due to the topographic position and the frequency of hydrology from runoff. These areas may meet wetland criteria but were not constructed for the purpose of creating a wetland area. Proposed impacts to wet ditches are estimated to be approximately 16.7 acres (**Table 11**).

STORMWATER PONDS

Ten stormwater ponds were delineated within the project area (**Figures 17A – 17D**). Stormwater ponds are areas that were constructed for the management of stormwater runoff from developed areas (e.g., roadways, buildings, parking lots). Like wet ditches, these areas may display wetland characteristics but were not constructed with the purpose of creating a wetland. Proposed impacts to stormwater ponds are estimated to be approximately 0.4 acre (**Table 11**).

The proposed impacts will not substantially alter the surface waters within the project area. Best management practices will be used to avoid unnecessary impacts to surface waters during construction and will be included in the project SWPPP and dewatering plans. Potential BMPs to be considered will include down-gradient perimeter sediment control such as silt fence, ditch checks, rapid stabilization measures, pump inlet/outlet protection from scouring, stabilized construction access, etc.

12. Contamination/Hazardous Materials/Wastes

- a) **Pre-project site conditions – Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.**

The section of I-94 within the project area was constructed between 1969 and 1973. Prior to 1969, the entire project corridor consisted of primarily agricultural land, interspersed with farmsteads and patches of wooded land. Commercial properties were initially developed in the western portion of the project corridor near the City of Rogers in the late 1970s and early 1980s. The central section of the project area remained primarily in agricultural use. Residences were developed in the eastern section of the project area near the City of Maple Grove beginning in the 1980s, followed by commercial developments in the early 2000s.

A Limited Phase I Environmental Site Assessment (Phase I ESA) was completed for the project area in 2018. A portion of this study is in **Appendix I**. The purpose of the study was to identify potential soil, groundwater, soil vapor, or debris-impacted sites within the project corridor. Sites were identified that were within or partially within a 500-foot buffer around the I-94 corridor and within 700-feet of the Brockton interchange area. In accordance with MnDOT specifications, sites within the project area were assigned risk classifications based on their potential for contamination. The risk ranking classifications are as follows:

- **High:** Sites with high potential for contamination include all active and inactive properties listed in the Voluntary Investigation and Cleanup (VIC) program, Minnesota Environmental Response and Liability Act (MERLA) program, or Superfund program. This classification also includes all active and inactive dump sites, all active Leaking Underground Storage Tank (LUST) sites, all dry cleaners, all bulk chemical facilities, active agricultural release sites, railroad fueling or maintenance yards, and historical industrial sites with likely chemical use on the premises.
- **Medium:** Sites with medium potential contamination include all closed LUST sites, properties with underground storage tanks (USTs), aboveground storage tanks (ASTs), machine shops, historical vehicle repair, historic lumber yards, and closed agricultural release sites.
- **Low:** Sites with low potential for contamination include hazardous waste generators, railroad lines, current lumber yards, and some farmsteads, residences, or commercial properties with poor housekeeping practices or a demolished structure.
- **De minimis:** Properties that do not qualify as low, medium, or high are unlikely for contamination and are ranked as de minimis.

The Phase I ESA identified 110 sites total, with nine sites ranked as high, 60 sites ranked as medium, and 41 sites ranked as low. All other sites in the project area were assigned *a de minimis* ranking. Of these sites, 38 sites are near the project construction area and 25 sites were recommended for additional evaluation with a Phase II ESA.

The 25 sites recommended for additional evaluation included sites with a history of spills, leaks, historic dumping, or outdoor storage of materials that could result in contaminated stormwater runoff to the right of way. These sites were former or current gas stations, auto repair shops, underground storage tank sites, current or former manufacturing or industrial sites, spill or dump sites, former VIC sites, and/or a former CERCLA/solvent recovery sites.

The Phase II ESA is being completed and the results are being reviewed by MnDOT. Soil and groundwater contamination was encountered at some of the sites. Detections of chemicals in the soil above the laboratory detection limits were reported for Diesel Range Organics (DRO), Gasoline Range Organics (GRO), Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs) metals, and nitrogen. However, only DRO exceeded the applicable criteria, in this case the MPCA's Best Management Practices for the Off-Site Reuse of Unregulated Fill (c-rem1-01). DRO was identified at two locations (DP-

17A and DP-17B) exceeding the 100 mg/kg criteria, these results were 118 and 538 mg/kg, respectively. The type and concentration levels of soil contamination identified can be managed during construction and did not require clean up or remediation before the project could start. The project will be required to manage these contaminated soil areas in conformance with MnDOT specifications.

Detections of chemicals in the groundwater above laboratory detection limits were reported for DRO, GRO, VOCs, SVOCs, and metals. However, only DRO, one SVOC, and various metals exceeded the applicable criteria. The type and concentration levels of groundwater contamination identified can be managed during construction and did not require clean up or remediation before the project could start. The project will be required to manage these contaminated groundwater areas in conformance with MnDOT specifications.

It is anticipated that the existing MnDOT West Wayside (MnDOT right of way) as well as one house and associated accessory structures (City of Dayton right of way) that are located within the footprint of the proposed Brockton interchange will be demolished and removed as part of the construction of the proposed interchange. It is likely, given the ages of the buildings, that there may be localized and limited regulated waste (such as asbestos, mercury, lead, etc. within structures or surficial contamination from fuel tanks associated with heating, etc.). MnDOT will be responsible for the testing and demolition of the West Wayside structure. The City of Dayton will be responsible for the pre-demolition assessment and abatement, as removal of these structures.

For any buildings that will be removed/demolished as part of the project, MnDOT or the City of Dayton (depending on the location) will contract with experts in regulated waste to inspect the properties for the presence of regulated or contaminated materials. MnDOT or the City of Dayton will implement standard measures to help avoid, control and manage potential effects from contaminated materials, such as preparing and implementing a project-specific scope of work, site-specific health and safety plan and hazardous material management plan. Any regulated or contaminated materials identified will be disposed of in accordance with applicable federal, state, and local regulations in advance of construction of the project.

- b) Project related generation/storage of solid wastes – Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.**

Construction of the project will generate solid waste and construction debris normal to construction. Management of this material will be in accordance with state guidelines and regulations. All solid wastes generated by construction of the proposed project will be disposed of properly in a permitted, licensed solid waste facility. Project demolition of concrete, asphalt, and other potentially recyclable construction materials will be directed to the appropriate storage, crushing, or renovation facility for recycling.

Following construction, the project will not generate solid wastes.

- c) Project related use/storage of hazardous materials – Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.**

i. Construction

Toxic or hazardous materials, such as fuel for construction equipment, and construction materials (sealant, paint, contaminated rags, acids, bases, herbicides, and pesticides) will likely be used during site preparation and road and rail construction. The potential for substantial fuel or other chemical spills during and after road and rail construction activities is considered low. Best management

practices will be used to minimize the chance of such spills. If a spill were to take place during construction, appropriate action to remedy the situation will be taken immediately in accordance with MPCA guidelines and regulations.

Any contaminated spills or leaks that occur during construction will be the responsibility of the contractor, who will notify the Duty Officer and work with the MPCA to contain and remediate contaminated soil/materials in accordance with state and federal standards

Once the project has been constructed, there will be no above or below ground petroleum storage tanks within the site.

- d) **Project related generation/storage of hazardous wastes – Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.**

It is anticipated that building removal will occur as part of the proposed Brockton interchange. Buildings to be removed will be treated as demolition debris. Prior to the demolition of structures, assessments for asbestos-containing materials, lead-based paints, and other regulated materials/wastes will be performed. The appropriate notifications will be submitted to regulatory authorities prior to asbestos abatement, structure demolition or relocation activities, regardless of whether regulated waste or asbestos was discovered during the assessment. All regulated materials and waste, including hazardous waste, from such buildings will be removed and properly disposed of prior to demolition.

A licensed asbestos abatement contractor will be used to remove any asbestos containing materials identified. Any green-treated wood will be documented and disposed of in a MPCA permitted Mixed Municipal Solid Waste (sanitary) landfill or Industrial Waste Landfill.

Any contaminated soil removed on site will be disposed of in a MPCA permitted landfill.

Following completion of the project, the roadway will not generate hazardous wastes.

13. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)

- a) **Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.**

Most of the project area has been previously disturbed for development or is used for agriculture. As such, habitat present in the project area and vicinity has been fragmented or degraded. In general, the project area consists of the right of way of I-94, except for the area needed for construction of the Brockton interchange.

Natural resources in the project area consist of scattered stands of trees, some of which line the I-94 right of way, grassy areas, lakes, streams, and wetlands. Grassed areas are primarily in the right of way of I-94. At the proposed Brockton interchange, resources consist of larger stands of trees and wetland areas. Much of the land within the Brockton interchange project area is used for agricultural activity.

Rice Lake and Fish Lake are located adjacent to the project area and Elm Creek and Rush Creek cross the roadway. Each of these water resources is listed as impaired for various uses. Additional detail regarding these resources and the impairments is in **Item 11.a.i.**

A total of 22 wetlands were identified within or adjacent to the project area. Wetlands were a combination of Fresh (wet) Meadow, Shallow Marsh, and Shallow Open Water wetlands. Wetlands and aquatic resources are further discussed in **Item 11.a.i.**

- b) Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-) and/or correspondence number (ERDB) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.**

The DNR reviewed the proposed project (ERBD No. 20190125). Correspondence from the DNR is included in **Appendix E**. No additional habitat or species survey work was conducted or recommended by the DNR. A search of the NHIS Database was conducted by DNR staff to identify rare features within the project area. The NHIS database comprises locational records of rare plants, animals, and other features including native plant communities, geologic features, and animal aggregations (such as nesting colonies). To ensure future protection of these sensitive resources, the location information is not provided in this document. Instead, the document generally identifies the sensitive resources in the project area and describes measures to avoid, minimize or mitigate impacts to those resources.

Resources in the NHIS identified included the following rare features that may be adversely affected by the project:

- Blanding's turtles (*Emydoidea blandingii*), a state-listed threatened species, have been reported in the Elm Creek Watershed and may be encountered on site. If Blanding's turtles are found on the site, state law and rules prohibit the destruction of threatened or endangered species, except under certain prescribed conditions. If turtles are in imminent danger they need to be moved by hand out of harm's way, otherwise they should be left undisturbed.
- Trumpeter swans (*Cygnus buccinator*) is a state-listed species of special concern and has been documented in the vicinity of the project. Construction activities that occur during the breeding season could disrupt nesting of these species, if present.
- Common gallinule (*Gallinula galeata*) is also a state-listed species of special concern and has been documented in the vicinity of the project. Construction activities that occur during the breeding season could disrupt nesting of these species, if present.

The northern long-eared bat (*Myotis septentrionalis*) is federally listed as threatened and state listed as special concern. During the winter this species hibernates in caves and mines, and during the active seasons (approximately April-October) it roosts underneath bark, in cavities, or in crevices of both live and dead trees. According to the Minnesota DNR and USFW databases, there are no known maternity roost trees and/or hibernacula entrances documented for the northern long-eared bat within an approximate one-mile radius of the proposed project.

MnDOT's Office of Environmental Stewardship (OES) reviewed the project for Section 7 impacts (discussed in **Section IV.B.9**) and determined that the project may affect, but will not adversely affect the bat (**Appendix J**).

In addition to the NHIS search, it is noted that Aquatic Invasive Species and Noxious Weeds are known to be in the project area. Eurasian water milfoil is known to exist in the Rice Lake basins that extend into MnDOT right of way. Noxious weed infestations of Canada thistle, tansy, leafy spurge, purple loosestrife, and nonnative *Phragmites* (Giant phragmites) are also present within the project area. MnDOT also noted that although there are no active nests identified, bald eagles (*Haliaeetus leucocephalus*) may nest in the area. Bald eagles are federally protected under the Migratory Bird Treaty Act and under the Bald and Golden Eagle Protection Act. Both acts prohibit killing, selling, or otherwise harming eagles, their nests, or eggs. If there will be any tree removal associated with the proposed project, the trees will be inspected for nests prior to being cut down. Nest observation may be necessary if active eagle nests are present near the project.

- c) **Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.**

Much of the project area has been previously disturbed and used for the existing I-94 roadway, commercial or industrial development, or agriculture. Wildlife expected within the project area will be that typical of frequently disturbed areas. Any wildlife displaced by the project or during construction of the project will likely relocate to suitable nearby areas, including lands immediately adjacent to the project area.

There will be vegetation impacts because of the project, including herbaceous vegetation and tree impacts. The herbaceous vegetation that will likely be impacted is located primarily within the right of way of I-94.

Tree impacts will occur because of the project. The areas likely to be impacted will include scattered stands of trees within the Brockton interchange project area and along the right of way of I-94.

- d) **Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.**

The following section identifies measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources should the preferred alternative be constructed.

i. ***The Blanding's turtles (*Emydoidea blandingii*)***

A Blanding's turtle fact sheet is attached that describes the habitat use and life history of this species (**Appendix E**). The fact sheet provides recommendations for avoiding and minimizing impacts to this rare turtle. Also included in **Appendix E** is a flyer will be given to all contractors working in the area. In general, recommendations for avoidance and minimization include:

- Any use of Category 3 or 4 erosion control blanket shall be limited to 'bio-netting' or 'natural netting' types (category 3N or 4N), and specifically not allow plastic mesh netting.
- New curb, if proposed in the project, is recommended to be a mountable design (Type D, Type R, or Type S) to also allow animals to exit the roadway should they attempt to cross the road.
- Culverts between wetlands and on streams should be oversized (minimum 36") to allow turtles the opportunity to utilize these structures for safe passage under the road.

ii. ***The Bald eagle (*Haliaeetus leucocephalus*)***

Tree removal is proposed with the project. The trees will be inspected for Bald Eagle nests prior to being cut down. If necessary, the USFWS does issue permits for unintentional disturbance and for the taking of a tree with Bald Eagle nests present.

Approximately 6.38 acres of tree removal will occur as part of the project. There are no documented maternity roost trees and/or hibernacula within the project area. However, the project schedule will perform winter tree removal (November 1 to March 31) to avoid possible impacts to the species during the northern long-eared bat (*Myotis septentrionalis*) active season.

iii. ***Aquatic Invasive Species***

Eurasian water milfoil is known to exist in the Rice Lake basins that extend into MnDOT right of way. Any equipment that contacts the Rice Lake basins will be inspected for vegetation, and if present, removed prior to transport.

iv. ***Noxious Weeds***

Infestations of tansy, giant phragmites, and leafy spurge are of greatest concern within the project area; though MnDOT will still make efforts to control Canada thistle. It is recommended to

aggressively treat giant phragmites before the construction begins and that soil from these areas, if moved or excavated, be separated and tracked. If possible, soil will be left in place.

Any soil moved during construction that contains noxious weeds or weed parts will be kept within the project right of way, on the same side of the highway, and buried under the final roadway grade where possible. If MnDOT's contractors chose to move soil from the project area that contains noxious weed parts, permits to transport this soil will be obtained from the appropriate County Agricultural Inspectors.

Additionally, the following practices will be used to limit the spread of noxious weeds during the construction phase:

- identify where weeds are present during the growing season or when weeds are visible
- prioritize these areas for weed control before construction begins
- post construction monitor for noxious weeds and control as necessary

For the remainder of the project area, all revegetation of disturbed soils will be a native seed mix in those areas that are not proposed for mowed turf grass. Local seed source is recommended. There may also be opportunities to plant trees and shrubs as well as other vegetative areas.

14. Historic Properties

- a) Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

i. Summary

The project area (the area of potential effect or APE for purposes of Section 106) has been reviewed for the presence of culturally-significant archeological and/or architecture-history resources by MnDOT's Cultural Resource Unit (CRU). Based upon initial staff review, there was potential for architecture-history and archaeological resources within the project area. MnDOT conducted architecture-history and archaeological field studies for further analysis.

ii. Architecture-History

A Phase I and II architecture-history investigation was completed in the project area. The Phase I architecture-history investigation surveyed a total of 31 properties that were 45 years in age or older. The Phase I architecture-history investigation identified seven properties in the architecture-history APE that had been previously inventoried. Three of the properties were found to have been razed. None of the inventoried properties were currently listed in the NRHP.

Phase II evaluations were conducted for six properties to evaluate their eligibility for listing in the National Register. The six properties were the Dayton Segment of the Osseo Branch, StPM&M Railroad Corridor Historic District (HE-DYC-018); the Schoch Farmstead (HE-DYC-020); the Cardinal Farmstead (HE-DYC-022); the StPM&M Railroad Bridge over Rush Creek (HE-DYC-025); the StPM&M Railroad Bridge in Rogers (HE-RGC-011); and the StPM&M Railroad Bridge over the Crow River (HE-RGC-014).

The Phase I and II architecture-history investigations recommended that 26 of the 31 inventoried properties were not eligible for listing in the National Register. The remaining five properties were recommended eligible for the National Register as contributing resources in the Osseo Branch, StPM&M Railroad Corridor Historic District. The five properties are the Dayton (HE-DYC-018), Hassan Township (HE-HAT-055), and Rogers (HE-RGC-011) segments of the Osseo Branch, StPM&M Railroad Corridor Historic District; the StPM&M Railroad Bridge over Rush Creek (HE-DYC-025); and the StPM&M Railroad Bridge over the Crow River (HE-RGC-014).

MnDOT's CRU has coordinated with the Minnesota State Historic Preservation Office (MnSHPO). MnDOT's CRU found that the project will have no adverse effect to any historic properties. MnSHPO provided agreement with MnCRU's findings. MnDOT's CRU findings letter and MnSHPO's response letter are included in **Appendix K**.

iii. Archaeological

A Phase I archaeological survey was completed in the project area. Prior to that study, four archaeological sites and two site leads had been recorded within or partially within the archaeological APE. A site lead is the reported location of a potential archaeological resource that has not been verified by a professional archaeologist. Two additional sites were newly identified during the Phase I archaeological survey.

One previously identified archaeological site is a burial mound group (21HE76 – Rice Lake Mounds) located within the I-94 right of way. The two mounds within this group are subject to the Private Cemeteries Act (Minnesota Statutes 307.08). Protection measures sufficient to prevent inadvertent disturbance during construction are to be coordinated with the Office of the State Archaeologist and the Minnesota Indian Affairs Council.

The three remaining previously identified sites are Native American heritage artifact scatters or lithic scatters. Site 21HE187 previously underwent a Phase I survey and Phase II evaluation resulting in the recommendation that this small Native American resource-procurement site is eligible for listing in the National Register of Historic Places. Intact archaeological deposits are located beyond the chain link highway fence. Similarly, intact archeological deposits associated with 21HE130 (unevaluated lithic scatter) are located beyond of the top of the highway backslope. Visual barriers will be placed during construction to avoid inadvertent disturbance of these site locations.

Site 21HE249 was previously excavated and its location since destroyed by subsequent development and as such is not eligible for listing in the National Register of Historic Places.

The two site leads within the APE are for a mound group (21HEe) that was fully-excavated in 1968 and its location since developed; and for a reported single mound (21HEs) that tangential evidence suggests is likely one of the mounds within 21HE76 (Rice Lake Mounds) (see above). No further investigation of either of these site leads is recommended.

The two archaeological sites near the proposed Brockton interchange (21HE511 and 21HE512) identified during the 2018 survey are isolated single lithic find spots that have limited information potential and as such are recommended as not eligible for listing in the National Register of Historic Places.

In summary, none of the archaeological sites potentially eligible for listing in the National Register of Historic Places will be directly impacted by the proposed construction activities. Protective measures during construction will be used to avoid inadvertent disturbance to previously identified archaeological sites 21HE76, 21HE130, and 21HE187. These protective measures will include the establishment of a buffer in consultation with MnSHPO, OSA, and MIAC; the use of visual barriers such as construction fence to demarcate the buffer; and notations on project plans.

MnDOT's CRU has coordinated with the Minnesota State Historic Preservation Office (MnSHPO) and State Archeologist. MnDOT CRU found that the project will have no adverse effect to any historic properties or cultural resources provided that the following conditions are met:

- Project specific wording will be developed and incorporated into the project construction plans to provide protection to select identified burial and archaeological sites.
- MnDOT CRU's contact information will be included in the construction documents and if anything is altered from the current review, the contractor will notify MnDOT CRU.
- Survey of one pond location that could not be reviewed due to landowner permission will be completed prior to construction if disturbance to this area is proposed.

MnSHPO provided agreement with MnCRU's findings. MnDOT's CRU findings letter, MnSHPO's response letter, and the State Archaeologist's response letter are included in **Appendix K**.

iv. Tribal Coordination

In addition to investigation of the project area, MnDOT's CRU also sent out a letter regarding the proposed project to Tribal Governments on May 10, 2018. No responses to the letter were received within the 30-day comment period. **Appendix K** includes the tribal coordination letter.

15. Visual

- a) **Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.**

The project area landscape consists of level terrain. South of Weaver Lake Road views generally consist of commercial and residential developments. Between Weaver Lake Road and approximately Maple Grove Parkway the views consist of Rice Lake to the east and wooded and wetland areas to the west. Between Maple Grove Parkway and Brockton Lane, the views transition to agricultural land. North of Brockton Lane North, views transition back to commercial development.

The project consists of resurfacing via an unbonded overlay between I-494/I-694 interchange and TH 101 as well as construction of a travel lane between TH 610 and TH 101. In portions of the project area east of TH 610 or west of TH 101, travelers and surrounding communities will not experience any changes in visual characteristics. Between TH 610 and TH 101, widening for the travel lane will occur entirely within the existing right of way. Additionally, noise walls will be constructed in some locations along the corridor.

The project also consists of the construction of a new interchange east of Brockton Lane. The visual characteristics of this segment of the project will be changed for both travelers and City of Dayton residents and business owners. The proposed interchange will introduce a 25-foot structure and graded road elevations on embankments. The proposed interchange will be consistent with existing adjacent transportation corridor, agricultural, and industrial land uses. The proposed interchange will require additional pavement, elevated grades and a structure, removal of one house, and clearing of trees. Road users traveling east-west on I-94 will experience a visual change, as the roadway will pass under the new interchange (which will be visible from I-94). The new interchange will be elevated above I-94 and new roadways will be constructed both east and west of the interchange to connect to the existing CSAH 81 to the northeast and Brockton Lane to the west.

The project will introduce new light sources due to intersection lighting at the new interchange. Lights will be placed on the interchange for safety of travelers in this area. The area surrounding the proposed interchange is primarily commercial, with few residences, so the new lighting sources are not anticipated to create a major impact. The nearest residence is approximately 1,300 feet east of the proposed interchange. It is expected that project will have minimal light and visual impacts.

16. Air

- a) **Stationary source emissions – Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.**

This project will not include permanent stationary sources of air emissions.

- b) **Vehicle emissions** – Describe the effect of the project’s traffic generation on air emissions. Discuss the project’s vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

A detailed response to this question is provided in the Air Quality Report and the Quantitative Mobile Source Air Toxics (MSAT) section of that report in **Appendix O**.

Motorized vehicles affect air quality by emitting airborne pollutants. Changes in traffic volumes, travel patterns, and roadway locations affect air quality as the number of vehicles and congestion levels in a given area change. The adverse impacts this project could have on air quality have been analyzed by addressing criteria air pollutants, a group of common air pollutants that are regulated by the U.S. Environmental Protection Agency (EPA) on the basis of specific criteria that reflect the effects of pollution on public health and the environment. The criteria air pollutants identified by the EPA are ozone, particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. Potential impacts resulting from these pollutants are assessed by comparing the project’s projected concentrations to National Ambient Air Quality Standards (NAAQS).

In addition to the criteria air pollutants, the EPA also regulates a category of pollutants known as air toxics, which are generated by emissions from mobile sources. The Federal Highway Administration (FHWA) provides guidance for the assessment of Mobile Source Air Toxic (MSAT) effects for transportation projects in the National Environmental Policy Act (NEPA) process. A quantitative evaluation of MSATs has been performed for this project. The scope and methods of the analysis performed were developed in collaboration with the Minnesota Department of Transportation (MnDOT), the Minnesota Pollution Control Agency (MPCA), and the FHWA.

i. Conformity to Minnesota’s State Implementation Plan (SIP)

The project area is designated by the EPA as being in attainment (or complying) with the National Ambient Air Quality Standards (NAAQS) for all air pollutants. However, while the project area is in attainment with the carbon monoxide (CO) NAAQS, the project area was formerly a nonattainment area for CO and is currently a “maintenance” area for this pollutant. Therefore, the Transportation Conformity rules (40 CFR 93, Subpart A) apply only to vehicle emissions of CO in the project area.

In addition to addressing hot-spot analysis, Transportation Conformity rules require that a project be in conformance with the regional emissions budget for CO. When a project has been included in the analysis prepared for the area’s Long Range Transportation Policy Plan (LRTPP) and is listed in the Transportation Improvement Program (TIP) list of planned projects, it is presumed to conform with the regional CO emissions budget. The proposed project was addressed in the latest approved LRTPP and is listed in the latest TIP, and therefore conforms to the regional emissions budget for CO.

ii. Carbon Monoxide (CO) Analysis

For existing conditions and for both the No Build and Preferred Alternative, the maximum annual average daily traffic (AADT) levels at signalized intersections will be less than the MnDOT CO hot-spot screening threshold of 82,300 entering vehicles per day (vpd) for signalized intersections. Therefore, signalized intersections affected by the project are not required to conduct a hot-spot analysis.

On November 8, 2010, the EPA approved a limited maintenance plan request for the Twin Cities maintenance area. Under a limited maintenance plan, the EPA has determined that there is no requirement to project emissions over the maintenance period and that "an emission budget may be treated as essentially not constraining for the length of the maintenance period. The reason is that it is unreasonable to expect that our maintenance area will experience so much growth within this period that a violation of CO National Ambient Air Quality Standard (NAAQS) would result." (US EPA Limited Maintenance Plan Option for Nonclassifiable CO Nonattainment Areas, October 6, 1995). Therefore, no regional modeling analysis for the LRTPP and TIP is required; however federally funded and state funded projects are still subject to "hot-spot" analysis requirements. The limited

maintenance plan adopted in 2010 determines that the level of CO emissions and resulting ambient concentrations will continue to demonstrate attainment of the CO NAAQS.

This project does not interfere with implementation of any transportation control measure included in the SIP. The 2019-2022 TIP implements, and is consistent with, the region's long-range transportation plan (LRTP), titled the Transportation Policy Plan (TPP), adopted by the Metropolitan Council on January 14, 2015, with US DOT conformity determination established on March 13, 2015. The project's design concept and scope are not significantly different from that used in the TIP conformity analyses. As demonstrated by the above information, this project conforms to the requirements of the CAAA and to the Conformity Rules, 40 CFR 93.

iii. Mobile Source Air Toxic (MSAT) Analysis

A quantitative evaluation of MSAT has been performed for this project. Results of the air toxics analysis show a reduction in long-term emissions for air toxics related to the project in the traffic study area, the full report is provided in **Appendix O**. Table 1 in the report presents the emissions for each MSAT included in this analysis (1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter) for the four scenarios: existing year (2017), first full opening year (2021) and design year (2040) for the No Build and Build Alternative. Table 1 in the report shows that the emissions from the Preferred Alternative scenario are slightly higher than for the No Build scenario by 0.1%.

FHWA and MnDOT have provided a quantitative analysis of MSAT emissions relative to the No Build Alternative and the Project. The FHWA and MnDOT have acknowledged that a future project in the study area may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain. Because of this uncertainty, the health effects from these emissions cannot be reliably estimated.

- c) Dust and odors – Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.**

i. Dust

Dust generated during construction will be minimized through standard dust control measures such as applying water to exposed soils and limiting the extent and duration of exposed soil conditions. Construction contractors will be required to control dust and other airborne particulates in accordance with MnDOT specifications in place at the time of project construction.

During construction, particulate emissions will temporarily increase due to the generation of fugitive dust associated with activities such as grading and other soil disturbance. The following dust control measures will be undertaken as necessary:

- Minimize the duration and extent of areas being exposed or regraded at any one time.
- Spray construction areas and haul roads with water, especially during periods of high wind or high levels of construction activity.
- Minimize the use of vehicles on unpaved surfaces when feasible.
- Tarp trucks hauling soil, sand, and other loose materials or require trucks to maintain at least two feet of freeboard.
- Pave, apply water as needed, or apply (non-toxic) soil stabilizers on unpaved access roads, parking areas and staging areas at construction sites.
- Use water sweepers to sweep paved access roads, parking areas, and staging areas at construction sites.
- Use water sweepers to sweep streets if visible soil material is carried onto adjacent public streets.

- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water, or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Utilize appropriate erosion control measures to reduce silt runoff to public roadways.
- Replant vegetation as quickly as possible to minimize erosion in disturbed areas.
- Use alternative fuels for construction equipment when feasible.
- Minimize equipment idling time.
- Maintain properly tuned equipment.

After construction is complete, dust levels are anticipated to be minimal because all soil surfaces exposed during construction will be in permanent cover (i.e., tracked, paved, or revegetated areas).

ii. Odors

Odors could be generated by exhaust from diesel engines engaged in construction activities and fuel storage areas. All machinery will be properly equipped to control emissions.

17. Noise

- a) Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

The proposed project will result in noise impacts during both construction and operation. Information on construction is provided below. Information about project operation is discussed in **Section IV.B.6** due to both state and federal impacts and evaluations.

b) Construction

Construction activities associated with implementation of the preferred alternative will result in increased noise levels relative to existing conditions. These impacts will primarily be associated with construction equipment and pile driving. **Table 12** shows peak noise levels monitored at 50 feet from various type of construction equipment. This equipment is primarily associated with site grading/preparation, which are generally the construction phases associated with the greatest noise levels.

Increase noise levels are, to a degree, unavoidable for this type of project. MnDOT will require that construction equipment be properly muffled and in proper working order. While MnDOT and its contractors are exempt from local noise ordinances, it is the practice to require contractors to comply with applicable local (City of Maple Grove, Dayton, or Rogers) noise restrictions and ordinances to the extent that is reasonable. Construction of the project is expected to last two construction seasons. Advanced notice to the cities will be provided of any abnormally loud construction activities such as use of high-impact equipment, pile driving, pavement sawing, or air hammering.

Table 12: Typical Construction Equipment Noise Levels at 50 Feet

Equipment Type ¹	Manufacturers Sampled	Total Number of Models in Sample	Peak Noise Level (dBA) Range	Peak Noise Level (dBA) Average
Backhoes	5	6	74-92	83
Front Loaders	5	30	75-96	85
Dozers ²	8	41	65-95	85
Graders	3	15	72-92	84
Scrapers	2	27	76-98	87
Pile Drivers	NA	NA	95-105	101

¹Source: Environmental Protection Agency (EPA) and Federal Highway Administration (FHWA)

²Track laying machine (for railway construction) would be similar to a dozer.

Any associated high-impact equipment noise, such as pile driving, pavement sawing, or jack hammering will be unavoidable with construction of the project. Pile driving noise is associated with the bridge construction. High-impact noise construction activities will be limited in duration to the greatest extent possible. The anticipated duration of project construction is approximately 1.5 years.

Nighttime construction may be needed to expedite construction or minimize traffic impacts. Noisy work at night will be limited as much as possible but could occur periodically. Construction activities that will be prohibited between 8:30 pm and 7:00 am include pile driving, concrete pavement demolition, pavement sawing, concrete crushing operations, and jack-hammering.

A traffic noise study was conducted for the project and is summarized in **Section IV.B.6** and the full report is available in **Appendix N**.

18. Transportation

- a) Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

i. Existing and Proposed Additional Parking Spaces

The Elm Creek Rest Area currently provides approximately 45 spaces for cars and 16 spaces for semi-trucks. The proposed project will add 12 additional spaces for semi-trucks.

ii. Traffic Generation

The project will not generate traffic, but it will result in changes to travel patterns and future traffic volumes because of a new interchange with I-94 between Maple Grove Parkway and TH 101 and an additional lane in each direction between TH 610 and TH 101.

iii. Traffic Forecasts

Traffic forecasts were developed to provide guidance on the design of the proposed I-94 interchange near Brockton Lane and the I-94 auxiliary lanes adjacent to the interchange. The Metropolitan Council regional travel demand model (dated June 27, 2018) was utilized to develop 2040 and opening day traffic forecasts for this project for a Preferred (build) and No Build Alternative. The No Build Alternative assumes the Brockton Interchange is not constructed and lanes are not added between TH 610 and TH 101. The Preferred Alternative assumes a diverging diamond Interchange on I-94 with a new road called Dayton Parkway that connects Brockton Lane and CSAH 81. It also assumes an additional lane on I-94 between TH 610 and TH 101.

The Metropolitan Council's model contains a network of roads that encompasses the entire Minneapolis/St. Paul region. The model network was reviewed within the project study area and surrounding vicinity for accuracy. Number of lanes, functional class, speeds, and connectivity were among the attributes that were reviewed. Within the model, traffic is assigned to roads based on various road attributes, such as speed, capacity, and travel time. Socio-economic data such as population, households and employment are utilized to generate and attract trips to areas around the metro region.

Daily traffic forecasts were developed for the project study area, which includes the following freeway corridors:

- I-94 from the TH 241 interchange to the Hemlock Lane interchange.
- I-494 from the I-94/I-494 interchange to the Bass Lake Road interchange.
- TH 610 from I-94 to the Maple Grove Parkway interchange.

For a detailed description of the model forecast volume methodology, please refer to the Model Methodology memo (October 2018) in **Appendix M**.

Table 13 below shows the I-94 daily traffic forecasts for the year 2040 No Build scenario and the year 2040 Preferred Alternative.

Table 13: I-94 Daily Traffic Forecasts

I-94/I-494 Segment	Year 2017 Count (veh per day)	2040 No Build (veh per day)	2040 Preferred (veh per day)	Difference – No Build to Preferred (veh per day)
I-94: West of Hwy 241	71,000	98,400	103,400	5,000
I-94: East of Hwy 241	81,000	108,000	113,100	5,100
I-94: East of Hwy 101	97,000	119,900	135,600	15,700
I-94: East of Brockton/Dayton Pkwy	97,000	119,900	155,700	35,800
I-94: East of TH 610	83,300	114,400	132,500	18,100
I-94: East of Maple Grove Pkwy	117,000	132,900	142,200	9,300
I-94: East of Weaver Lake Rd	117,000	132,100	139,100	7,000
I-94: East of I-494	122,000	139,100	143,200	4,100
I-494: South of I-94	78,000	95,800	97,500	1,700
I-494: South of Bass Lake Rd	80,000	97,200	98,800	1,600

Table 13 above shows that Preferred Alternative attracts more daily traffic to the I-94 corridor in the study area, especially between the proposed Brockton Interchange and TH 610. The forecast volumes are also higher in other sections of the corridor due to the added lane in each direction between TH 610 and TH 101.

Table 14 below shows the daily traffic forecasts near the I-94/Brockton Interchange and along Dayton Pkwy.

Table 14: I-94/Brockton Interchange Daily Volume Forecasts – Future Year 2040

Roadway	Segment	2040 No Build (veh per day)	2040 Preferred (veh per day)
I-94	West of Dayton Pkwy	119,000	135,600
I-94	East of Dayton Pkwy	119,000	155,700
I-94	Eastbound exit ramp	NA	1,800
I-94	Eastbound entrance ramp	NA	13,100
I-94	Westbound exit ramp	NA	14,900
I-94	Westbound entrance ramp	NA	1,500
Dayton Pkwy	West of Brockton Ln	NA	6,600
Dayton Pkwy	West of I-94	NA	23,000
Dayton Pkwy	East of I-94	NA	15,300
Dayton Pkwy	East of Hwy 81	NA	13,000

The proposed Brockton Interchange is expected to open in year 2021. There is no year 2021 travel demand model to develop opening year traffic projections. Therefore, the year 2021 daily projections were developed by interpolating between the existing base year (2015) model assignments with the Brockton interchange and added lanes on I-94 and the 2040 Preferred Alternative scenario model assignments. The year 2021 No Build traffic projections were developed by interpolating between the year 2017 count and the year 2040 No Build scenario forecasts. **Table 15** below shows the opening year 2021 daily forecasts at the I-94/Brockton Lane interchange and along Dayton Pkwy.

Table 15: Brockton Interchange Daily Volume Forecasts – Opening Year 2021

Road	Segment	2017 Count (veh per day)	2021 No Build (veh per day)	2021 Preferred (veh per day)
I-94	West of Dayton Pkwy	97,000	100,800	103,500
I-94	East of Dayton Pkwy	97,000	100,800	115,200
I-94	Eastbound exit ramp	NA	NA	1,400
I-94	Eastbound entrance ramp	NA	NA	9,700
I-94	Westbound exit ramp	NA	NA	11,000
I-94	Westbound entrance ramp	NA	NA	1,100
Dayton Pkwy	West of Brockton Ln	NA	NA	5,000
Dayton Pkwy	West of I-94	NA	NA	17,300
Dayton Pkwy	East of I-94	NA	NA	11,500
Dayton Pkwy	East of Hwy 81	NA	NA	9,800

- b) Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (*available at: <http://www.dot.state.mn.us/accessmanagement/resources.html>*) or a similar local guidance.

i. Vehicle-Miles Traveled and Vehicle-Hours Traveled

Vehicle-Miles and Vehicle-Hours of travel on the entire system provide a measure of how the proposed improvements would impact times and delay on the regional system. A comparative analysis of vehicle miles-traveled (VMT) and vehicle hours-traveled (VHT) was conducted for the year 2040 No Build Scenario and the year 2040 Preferred Build Alternative Scenario for a selected sub-area of the regional system. The Metropolitan Council's travel demand model outputs were used to determine VMT and VHT data. The analysis covered a subarea centered on the proposed I-94/Brockton Interchange. The boundaries of the subarea are roughly TH 25 to the west, TH 12 to the south, TH 65 to the east, and TH 10 and Viking Blvd to the north. The subarea was considered the area where traffic would generally be expected to change their route with the new interchange in place. **Table 16** below shows the VMT and VHT difference between the 2040 No Build and Preferred Build Alternative Scenarios.

Table 16: Comparison of Daily VMT & VHT – Subarea Analysis – Future Year 2040

Scenario	Daily VMT	Daily VHT
2040 No Build	21,168,737	453,101
2040 Preferred	21,191,348	452,363
Difference	22,611	(738)

Table 16 above shows that within the subarea the 2040 Preferred Build Alternative Scenario is expected to create 22,611 more vehicle miles of travel but 738 fewer vehicle hours of travel. This indicates that the Preferred Alternative scenario is going to accommodate longer trips at higher speeds.

ii. I-94 Traffic Operations

Table 17 shows the 2040 No Build AM and PM levels of service for I-94 between Hemlock Lane and TH 241. Because the 2040 No Build alternative only has two eastbound lanes on I-94 between the ramps at TH 101 and I-94 Interchange, the section of I-94 under TH 101 is a bottleneck in the AM peak period and the traffic flows downstream are less than in the Preferred Alternative scenario. This

is reflected in the traffic forecasts and is also reflected in the speeds and levels of service. It is also consistent with the regional model VMT and VHT data that shows higher VMT and lower VHT for the 2040 Preferred Alternative (Table 16). In the PM peak there is congestion in the westbound direction that begins at the junction of I-494 and I-94 as shown in Table 18. Again, this congestion extends to the TH 610 entrance ramp. The speeds and LOS improve west of TH 610 because the flows are restricted by the upstream bottleneck between I-494 and TH 610. There is also congestion in the eastbound direction beginning at Maple Grove Parkway and extending east to Hemlock Lane because of higher forecast traffic volumes.

Table 17: 2040 No Build Mainline Level of Service

Roadway	Segment	Lanes	AM Peak				PM Peak			
			Speed (mph)	Volume (vph)	Density (vpmp/ft)	LOS	Speed (mph)	Volume (vph)	Density (vpmp/ft)	LOS
I-94 EB	TH 241 to TH 101	3	15	4019	90	F	67	2665	13	B
	Between TH 101 Ramps	2	48	3180	33	D	66	2078	16	B
	TH 101 to Brockton	3	56	4931	30	D	64	3737	19	B
	Brockton to TH 610	3	64	3548	18	B	66	3108	16	B
	TH 610 to Maple Grove Pkwy	3	58	4559	25	C	60	4361	23	C
	Maple Grove Pkwy to Weaver Lake Rd	3	39	5271	43	F	35	5010	45	F
	Weaver Lake Rd to I-494 SB Exit	3	63	5181	20	C	26	5893	57	F
I-94 WB	Hemlock to I-494 SB Exit	3	44	4854	36	E	33	4593	45	F
	I-494 NB Merge to Weaver Lake Rd	3	50	3609	22	C	38	4625	42	E
	Weaver Lake Rd to Maple Grove Pkwy	3	59	3293	20	B	33	4741	48	F
	Maple Grove Pkwy to TH610	3	67	2417	12	B	16	3941	79	F
	TH 610 to TH 101	3	66	3014	15	B	57	5078	28	D
	Between TH 101 Ramps	3	67	1819	9	A	65	3196	16	B
	TH 101 to TH 241	3	66	1980	10	A	62	3918	21	C

Table 18: 2040 Preferred Alternative Level of Service

Roadway	Segment	Lanes	AM Peak				PM Peak			
			Speed (mph)	Volume (vph)	Density (vpmp/ft)	LOS	Speed (mph)	Volume (vph)	Density (vpmp/ft)	LOS
1-94 EB	TH 241 to TH 101	3	46	497	36	E	67	2665	13	B
	Between TH 101 Ramps	3	63	3856	20	C	68	2208	11	C
	TH 101 to Brockton	3	29	5545	55	F	65	3807	15	B
	Brockton to TH 610	4	25	6004	61	F	60	4739	19	B
	TH 610 to Maple Grove Pkwy	3	24	4381	69	F	64	3895	20	C
	Maple Grove Pkwy to Weaver Lake Rd	3	19	4781	78	F	21	4635	75	F
	Weaver Lake Rd to I-494 SB Exit	3	33	5426	49	F	32	4972	48	F
	I-494 NB Entrance to Hemlock	4	62	5472	22	C	26	5909	58	F
1-94 WB	Hemlock to I-494 SB Exit	3	46	4840	34	D	33	4239	46	F
	I-494 NB Merge to Weaver Lake Rd	3	51	3621	22	C	32	4668	51	F
	Weaver Lake Rd to Maple Grove Pkwy	3	64	3303	16	B	48	4880	32	D
	Maple Grove Pkwy to TH610	3	66	2591	13	B	58	4394	24	C
	TH 610 to Brockton	3	66	3426	13	B	60	6145	26	C
	Brockton to TH 101	4	62	2898	13	B	63	5324	21	C
	Between TH 101 Ramps	3	62	1179	6	A	65	3424	18	B

Roadway	Segment	Lanes	AM Peak				PM Peak			
			Speed (mph)	Volume (vph)	Density (vpmp/l)	LOS	Speed (mph)	Volume (vph)	Density (vpmp/l)	LOS
	TH 101 to TH 241	3	67	1382	7	A	61	4129	22	C

iii. Brockton Interchange Traffic Operations

The traffic operations at the Brockton Interchange for the opening year and for 2040 are shown in the tables below. The major intersections at this location are expected to operate at an acceptable level of service for both the opening year (Table 19) and for 2040 forecast traffic volumes (Table 20).

Table 19: Dayton Parkway/Brockton Interchange Year of Opening (2021) LOS

Intersection	AM Peak Delay	AM Peak LOS	PM Peak Delay	PM Peak LOS
Dayton Pkwy/I-94 EB Off Ramp	14.2	B	13.5	B
Dayton Pkwy/I-94 WB Off Ramp	21.5	C	7.6	A
Dayton Pkwy/Brockton Ln	37.0	D	34.8	C
Dayton Pkwy/CSAH 81	18.1	B	42.5	D

Table 20: Dayton Parkway/Brockton Interchange 2040 Preferred Alternative LOS

Intersection	AM Peak Delay	AM Peak LOS	PM Peak Delay	PM Peak LOS
Dayton Pkwy/I-94 EB Off Ramp	16.2	B	13.4	B
Dayton Pkwy/I-94 WB Off Ramp	26.4	C	13.1	B
Dayton Pkwy/Brockton Ln	46.9	D	39.6	D
Dayton Pkwy/CSAH 81	37.2	D	48.6	D

Identify measures that will be taken to minimize or mitigate project related transportation effects.

An analysis was completed of traffic impacts during construction to determine both temporary and permanent improvements that should be considered to avoid major delays and backups during construction. I-94 currently has six-lanes (three lanes each direction) for traffic between I-494 and TH 101 and traffic volumes for about 12 hours a day exceed the capacity of a four-lane facility. The Metropolitan Council Regional Travel Model 2015 calibrated model was used to test a four-lane, five-lane and six-lane alternative. The daily vehicle hours of travel for the four-lane alternative was about 10,000 vehicle hours per day more than without construction. The six-lane alternative was about 5000 vehicle hours per day more than without construction, which was primarily because of lower speeds in the construction zone and some reduction in capacity due to narrower lanes and no shoulders. The amount of traffic diverted to the city and county roadways was significantly less with the six-lane option versus the 4-lane option. MnDOT has committed to maintaining six lanes on I-94 during construction and will also monitor the local roadways that could be impacted by traffic diverting from I-94. The specific intersections MnDOT has committed to monitoring include the following:

- Territorial Road/Main Street
- Territorial Road/CR 116 (Fletcher Lane)
- Territorial Road/Brockton Lane (CR 101)
- CSAH 30 and CR 116
- CSAH 30 and CR 101

Potential improvements at these intersections will include temporary traffic signals and potential restriping of existing lanes. No additional impervious surface will be needed to implement the improvements. An analysis of the intersections with the temporary improvements indicated that they

can accommodate up to 20 percent higher volumes than existing and maintain traffic operations at an acceptable level or better than the existing operations. Any improvements implemented at these intersections will be temporary and removed after construction. MnDOT will meet with the cities and county on a weekly basis during construction to understand if there are major impacts on the local system.

iv. Availability of Transit and/or other Alternative Transportation Modes

Maple Grove Transit provides commuter express service to and from downtown Minneapolis Monday through Friday. Maple Grove Transit operates five express routes and three scheduled service routes:

- Route 780, 781, 782, 783 and 785: express routes
- Route 788: acts as a collector and transfers customers to Route 783
- Route 787: a flex route that offers an off-peak ride to the other park-and-ride lots from the Maple Grove Transit Station
- Route 789: provides service to the University of Minnesota

All Maple Grove Transit routes utilize the I-94 corridor to service downtown Minneapolis and the University of Minnesota. Routes 785 and 787 enter/exit I-94 at Maple Grove Parkway. Route 783 enters/exits I-94 at Weaver Lake Road while the remaining routes enter/exit I-94 at Hemlock Lane.

Maple Grove Transit also operates My Ride, and dial-a-ride service. My Ride is an advanced reservation, shared-ride, curb-to-curb service available to the general public. The service area includes the City of Maple Grove, City of Osseo, Hennepin Technical College/North Hennepin Community College and Starlight Transit Station (next to Cub Foods in Brooklyn Park).

Prairie Five Rides utilizes the I-94 corridor from St. Cloud into the Twin Cities. They operate on-demand service to the Twin Cities on Monday, Wednesday, and Friday.

Because of ramp closures during construction the project will potentially impact the Maple Grove services. During these short-term closures alternate routes will be identified to get to I-94. In the long term the project will not affect transit services.

19. Cumulative Potential Effects

a) Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

Cumulative effects are defined as “the impact on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency or persons undertakes such actions.” The geographic areas considered are those areas directly adjacent to the project, and the timeframe of the next few years.

Project related environmental effects that could combine with other environmental effects and the geographic extent of the anticipated impacts are summarized in Table 21 and on the following page.

Table 21: Project Related Environmental Effects and Geographical Extent

Reference (Section in EA)	Topic/Issue	Project-Related Environmental Effects	Geographic Extent
Section IV.A.9 (EAW Item 9)	Land Use	Reduction in farmland (30.9 acres)	Primarily Brockton interchange area.
Section IV.A.10 (EAW Item 10)	Geology, Soils and Topography	Disturbed ground/soils during project construction.	Throughout project area.

Reference (Section in EA)	Topic/Issue	Project-Related Environmental Effects	Geographic Extent
Section IV.A.11 (EAW Item 11)	Water Resources	Increase in impervious surface (33.7 acres) Impacts to all aquatic resources (21.4 acres) Impacts to wetlands (3.9 acres) Water appropriation during construction	Throughout project area (all but last item) Water appropriation at culvert replacement locations
Section IV.A.12 (EAW Item 12)	Contamination	Regulated waste removal from two properties and management of minor soil contamination during construction	Future Brockton interchange and various places along the corridor
Section IV.A.13 (EAW Item 13)	Fish, Wildlife, Plant Communities and Sensitive Ecological Resources	Tree removal – bat habitat Construction impacts and vehicle collisions – Blanding’s turtle Construction impacts – Trumpeter Swan and common gallinule	Tree removal primarily in area of Brockton interchange Throughout project for impacts to other species
Section IV.A.14 (EAW Item 14)	Historic	No adverse effect anticipated (to be determined)	BNSF Rail line in Dayton south of CSAH 81 and west of proposed Dayton Parkway
Section IV.A.17 (EAW Item 17) and Section IV.B.6	Construction Noise	Modeled noise levels above state standards	Highway noise impacts along project.
Section IV.A.18 (EAW Item 18) Transportation	Improved ride quality and restored pavement structure Improved mobility	Improved access to I-94	Ride quality and pavement structure will be throughout the entire project. Improved mobility and access will be generally between TH 610 and TH 101
Section IV.B.5 (EA Item 5)	Right of Way Acquisition	Right of way acquisition required for Brockton interchange project and I-94 BMPs. Property owners will be compensated for land needed to construct the project.	Brockton interchange area and along the existing right of way of I-94 for stormwater BMP locations.
Section IV.B.6 (EA Item 6)	Noise	Modeled noise levels above state standards	Highway noise impacts along project
Section IV.B.9 (EA Item 9)	Federal Species	Tree removal – bat habitat	Tree removal primarily in area of Brockton interchange

- b) Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

The 2019 – 2022 State Transportation Improvement Program (STIP), the Hennepin County 2030 Transportation Systems Plan, and the City of Maple Grove, Dayton, and Rogers websites were reviewed to

identify present and other reasonably foreseeable future projects near the limits of the project. Reasonably foreseeable future projects include those that have preliminary plat approval through the city. These projects include:

- I-94 between Albertville and St. Michael: pavement reconstruction and construction of an additional lane (2019 construction)
- Development of 18,000-sf medical building in Maple Grove (2020)
- Development of 476-home residential development (Laurel Creek) in Rogers (2019)
- Development of RDO Construction Equipment Sales and Maintenance Facility in Dayton (2018 construction)

Future industrial development is anticipated following construction of the Brockton interchange. Individual developments will be required to complete a State environmental review, if necessary, and obtain necessary environmental permits.

c) Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

Past actions that have occurred recently in the project area include:

- CR 30 Mill and Overlay (Maple Grove)
- CR 18/CR 101 Intersection Improvements (Rogers)

Environmental effects resulting from the proposed project are described in EAW item 7 through 18. The other present and reasonably foreseeable future projects may also impact these same resources. Future development is taken into consideration in the traffic analysis, and the cumulative impact of future transportation improvements are expected to result in improved traffic conditions. Impacts from the other projects listed above would be addressed via federal, state, and local review and permitting processes and would be individually mitigated to ensure minimal cumulative impacts occur.

Considering the types of projects that are planned to occur or have recently occurred, and considering regulatory permitting and approval processes, the proposed project along with other reasonably foreseeable projects will have a minimal cumulative impact on the environment.

20. Other Potential Environmental Effects

If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

This project is not believed to cause any anticipated adverse environmental impacts that have not been addressed by this EAW or in the accompanying Environmental Assessment related to federal issues.

RGU CERTIFICATION. (The Environmental Quality Board will only accept SIGNED Environmental Assessment Worksheets for public notice in the EQB Monitor.)

I hereby certify that:

The information contained in this document is accurate and complete to the best of my knowledge.

The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.

Copies of this EAW are being sent to the entire EQB distribution list.

Signature _____

Date _____

Title _____

Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at the Minnesota Department of Administration, Office of Geographic and Demographic Analysis. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-201-2492, or <http://www.eqb.state.mn.us>

B. ADDITIONAL FEDERAL ISSUES

FHWA Technical Advisory T 6640.8A, Guidance for Preparing Environmental and Section 4(f) Documents, effective November 27, 1987 provides guidance in the format, content and processing of NEPA and Section 4(f) studies and documents. It includes the following impact categories not addressed in the EAW:

- Social Impacts
- Considerations Relating to Pedestrians and Bicyclists
- Environmental Justice
- Economics
- Right of Way and Relocations
- Noise and Vibration
- Section 4(f) – Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites
- Section 6(f) – Land and Water Conservation Act
- Section 7 – Endangered Species Act
- Section 404 – Clean Water Act
- Section 401 – Clean Water Act
- Indirect Effects

1. Social Impacts

The following social impacts were evaluated for the project:

- Travel patterns and access
- Accessibility
- Community facilities and public services
- Community and neighborhood cohesiveness
- Transportation sensitive populations
- Income equity
- Quality of life

2. Travel Patterns and Access

The construction of a new interchange east of Brockton Lane would shift travel patterns and access in and near the City of Dayton as well as along the county roads in the area. This will provide for local access for residents and businesses in the area.

3. Accessibility

ADA improvements for pedestrians and bicyclists would be provided at the Weaver Lake Road, Maple Grove Parkway, 93rd Avenue, and TH 101 interchanges. Improvements will include pedestrian ramp and signal improvements. A new pedestrian access will be provided at the Brockton interchange.

Given the project primarily involves an interstate corridor, it is not anticipated that the design would include any other accessibility options. There are no other pedestrian or bicycle facilities in the area that would be connected because of the project.

4. Community Facilities and Public Services

The project would improve access to businesses, residential areas, and industrial areas located in Dayton and would improve access for motorists in Dayton and surrounding areas to I-94.

Emergency responders would have additional access to I-94 at the new Dayton interchange.

5. Community and Neighborhood Cohesiveness

The project area spans from Maple Grove to Rogers. The added lanes and will improve travel between Rogers and Dayton. Construction of the Brockton interchange will improve connectivity from I-94 to the City of Dayton and surrounding areas. Resurfacing will not affect community or neighborhood cohesiveness.

e) **Transportation Sensitive Populations**

Transportation sensitive populations including transit dependent, elderly, and handicapped individuals that rely on public transportation would not be impacted by the project. The project would not alter the availability of transit within the cities of Maple Grove, Dayton, or Rogers or within Hennepin County.

f) **Income Equity**

The project would not place an unequal burden on lower income individuals or transportation sensitive populations. The project would not charge for individuals to utilize highway facilities or local roadways. Existing routes would continue to be accessible by those with lower incomes or who are transit dependent.

g) **Quality of Life**

The project would be expected to provide a positive long-term social impact for residents, businesses, and the surrounding communities. The construction of additional travel lanes would decrease commute times and increase mobility on I-94 between TH 610 and TH 101. The construction of the Brockton interchange would improve access to I-94 and to surrounding businesses and industrial areas in Dayton.

2. **Considerations Relating to Pedestrians and Bicyclists**

The project will not negatively impact any existing non-motorized transportation facility or activity on a permanent basis or preclude construction of future planned facilities. The project will briefly interrupt pedestrian and bicycle flow on trails receiving ADA improvements during construction of those improvements. Post construction, there would be no negative impacts to pedestrian or bicycle movements.

a) **Environmental Justice**

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, dated February 11, 1994, directed that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States..." The proposed project has federal funding and federal permit requirements and is considered a federal project for purposes of compliance with the Executive Order.

FHWA Order 6640.23A FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations establishes policies and procedures for the Federal Highway Administration (FHWA) to use in complying with Executive Order 12898. FHWA issued Order 6640.23A on June 14, 2012.

For more information on the regulatory context, see the Environmental Justice (EJ) Technical Memo (**Appendix L**). A summary is provided below.

i. ***EJ Study Area***

The EJ study area is the geographic area where the proposed project has potential for human health or environmental effects. The study area of influence is defined as one-quarter mile from the existing I-94 freeway centerline, from the I-94/I-494 interchange in Maple Grove to TH 101 in Rogers. The study area of influence identifies low-income and/or minority populations within the study area and determines whether the project will have adverse impacts on these identified environmental justice populations (EJ populations).

ii. ***Minority Populations***

Minority populations were identified using the demographics from the 2010 Census data; field review; discussion with local and MnDOT staff; and public outreach. **Appendix L** shows block groups with higher minority populations data than the city and county level. Data from 2010 indicates that the block group in the City of Dayton is the only block group with a minority community greater than Hennepin County.

iii. Low-Income Populations

ACS data (2012-2016) was used to analyze low-income populations. Data is reported at the block group and tract level and is compared to the county and city low-income population. None of the block groups have higher concentrations of low-income than the Hennepin County average. There were other methods of data analysis to determine whether there were concentrations of low-income populations within the area of influence. Other methods included a desktop review of aerials, information provided by city staff and from discussions during public information meetings. This additional information revealed a few considerations. First, there is a manufactured home community in Block Group 2, Census Tract 269.10. Residents of mobile home communities may be low-income individuals. Secondly, there may be some homeless individuals using the Elm Creek Rest Area located in Block Group 3, Census Tract 267.14. People experiencing homelessness who do not have a permanent address will not be included in existing ACS data.

iv. EJ Population Summary

Based on the efforts described above, there are readily identifiable minority and low-income populations in the EJ study area. For the analysis, while both county and city comparisons were analyzed, comparing the study area to Hennepin County demographics was deemed appropriate as I-94 is a regionally important transportation corridor and the county ranges in diversity compared with the city level data. These EJ populations are near the Brockton interchange and Elm Creek Rest Area.

v. Impacts of Project on EJ Populations

Executive Order 12898 requires that the proposed actions be reviewed to determine if there are “disproportionately” high or adverse impacts on these populations. Disproportionately high and adverse effect on minority and low-income populations means an adverse effect that:

- is predominately borne by a minority population and/or a low-income population, or
- will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

As described in the EA/EAW (environmental document), the proposed action would have impacts on human health and environment associated with the following topics: physical impacts to property, air, noise, and traffic. Based on the analysis as discussed in **Appendix L**, there are no disproportionately high or adverse impacts to EJ populations in the study area.

vi. Environmental Justice Finding

The purpose of Executive Order 12898 is to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations. Readily identifiable minority and low-income populations are affected by the project. However, the adverse effects of the project will not be predominately borne by the identified minority or low-income population, nor will they be appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority or non-low-income population. Therefore, the proposed action will not have disproportionality high or adverse human health or environmental effects on any minority population or low-income population.

b) Economics

I-94 is a regionally-important transportation corridor. It is designated by MnDOT as a high-priority interregional corridor (IRC) facility that carries substantial volumes of commercial, freight, commuter, and recreational traffic. I-94 provides access to regional job centers and to local communities as well as supports local and regional economic development. The proposed project will increase mobility and provide local access to I-94 that will continue to support economic growth and development.

The proposed new interchange east of Brockton Lane will also provide the infrastructure needed to support the growth and development plans of the City of Dayton as identified in their Comprehensive

Plan. The City of Dayton has planned for additional development in the area. Additionally, residential development is occurring west of the Brockton Lane in the City of Rogers.

In addition to the anticipated development in the City of Dayton, there are several industrial businesses between Maple Grove Parkway and TH 101 including FedEx, Clam, Ruan, King Solutions, and Cemstone. These businesses not only rely on I-94 to transport goods, but they also need efficient access to I-94. The addition of the new interchange east of Brockton Lane will reduce additional system-wide vehicle miles of travel, vehicle hours of travel, energy use, and vehicle emissions, thus improving the economics of the region.

While some additional right of way will be needed for the project, no businesses will be displaced or relocated as part of the project. Additionally, this project will not divert large traffic volumes from existing commercial routes.

c) Right-of-Way Acquisition and Relocation

Right of way refers to a piece of land that is used as a transportation corridor. Property owned by MnDOT, Hennepin County, or the cities of Maple Grove, Dayton, or Rogers is therefore called right of way. Many highway projects require purchasing land that the agency does not currently own. If a property or a portion of a property is needed to construct a project, the act of the agency purchasing the needed property is called right of way acquisition. If an entire parcel of property is needed, it is considered a total take. If there is a home or a business that is on a parcel for which a total take is required, that resident or business will need to be relocated at the agency's expense.

Much of the property needed for construction of the project is currently owned by MnDOT or the City of Dayton. The City of Dayton acquired property for the future construction of the Brockton interchange in 2014 and 2015 after the city completed the Environmental Assessment Worksheet for the interchange in 2013 in conformance with the Uniform Relocation Act. **Figure 20H** shows the right of way that the city acquired as well as land they already owned. Environmental impacts associated with the right of way that was previously acquired as well as areas that need to be acquired are included in this environmental assessment document.

There are portions of properties that will need to be acquired as part of the project that are currently held by private property owners. The right of way required has been minimized throughout the project design as the stormwater design progressed. Initially, there were more areas proposed for stormwater ponding. However, through reducing impervious surface and siting ponds within existing right of way, right of way acquisition has been reduced. Additionally, the right of way that was obtained by the City of Dayton previously was for a partial cloverleaf. Since that time, the preferred alternative has changed to a diverging diamond that will ultimately require less right of way. Therefore, right of way impacts have been reduced. The following subsections discuss the partial acquisitions that will be required from private property owners to construct the project. Based on the proposed design for the project, there will be no total parcel acquisitions needed to construct the project.

i. Partial Acquisitions

Partial acquisitions can be both permanent and temporary. Permanent acquisition or acquisition of permanent easements enable the agency (MnDOT or City of Dayton) to have ownership or use of the property in perpetuity. Temporary easements are portions of property that are needed to construct the project (access to the parcel, grading, storage of equipment or materials, etc.) but remain the property of the property owner.

The project will result in both permanent and temporary acquisitions as summarized in Table 22. **Table 23** lists the number of parcels impacted and their associated acreage. **Figures 20A – 20H** show the property that will be needed to construct the I-94 project and/or the property the City of Dayton previously acquired for the Brockton interchange. The right of way that was acquired by the City of Dayton for the interchange in 2014 and 2015 was based on a previous design of the interchange as a partial cloverleaf (**Figure 20H**). As discussed in this document, a diverging diamond interchange is now the preferred alternative and will require less right of way. Revised right of way limits are

currently being determined. Because the project will be refined further as design progresses, it is anticipated that some right of way impacts will be modified through the right of way negotiation process and as design is completed. An update on right of way impacts will be provided in the Findings of Fact and Conclusions.

Table 22: Right of Way Impacts

Type of Acquisition	Acres	Number of Parcels	Number of Property Owners	Portion of Project
Permanent Right of Way / Permanent Easement	1.39	2	2	I-94
Temporary Easement	1.16	4	4	I-94
Permanent Right of Way	3.83	4	4	Brockton interchange
Temporary Easement	0.71	4	4	Brockton interchange
Right of way previously obtained by City of Dayton	25.9	3	3	Brockton interchange

Table 23: Individual Parcel Impacts

Parcel Number/ Name	Permanent Right of Way / Permanent Easement (acres)	Temporary Easement (acres)	Portion of Project
1	0.79	0.08	I-94
2	0	0.20	I-94
3	0	0.14	I-94
4	1.86	0.15	Brockton interchange
5	0	0.06	Brockton interchange
6	0.52	0.50	Brockton interchange
7	0.60	0.74	I-94
8	0.14	0	Brockton interchange
9	1.31	0	Brockton interchange
Total	5.22	1.87	

All right of way acquisition will be done in accordance with the Uniform Relocation and Real Property Acquisition Act of 1970, as amended by the Surface Transportation Uniform Relocation Assistance Act of 1987 and 49 CFR, Part 24, and effective April 1989. MnDOT is responsible for all right of way acquisition related to the proposed roadway improvements related to the I-94 improvements. The City of Dayton is responsible for all right of way acquisition related to the proposed Brockton interchange.

ii. Relocations

One home exists within property intended for the Brockton interchange, located south of the I-94 and proposed Dayton Parkway intersection. The home is located on property currently owned by the City of Dayton. The home is rented, and the city has an agreement that the tenants must vacate the building within a 60-day notice. Relocation will be in conformance with the Uniform Relocation Act.

d) Noise and Vibration

Noise was studied as part of the project evaluation as the proposed modifications meet the definition of a Type I project due to the addition of an interchange and auxiliary lanes. Therefore, a traffic noise analysis following the requirements of 23 CFR 772 is required for the project (**Appendix N**). The purpose of the noise analysis is to document the effect of the project on traffic generated noise levels and analyze the

possible installation of noise barriers for properties along the project area in order to mitigate noise impacts.

The project area includes I-94 from the I-494/I-694 interchange in Maple Grove to the I-94/TH 101 interchange in Rogers. The project area also extends from CSAH 81 to Brockton Lane North in the vicinity of the proposed Brockton interchange, which is located approximately 3,000 feet southeast of Brockton Lane North. Noise receptors within approximately 500 feet of the proposed auxiliary lanes on eastbound and westbound I-94, the proposed interchange in Dayton, and the proposed truck parking expansion at the Elm Creek Rest Area were modeled.

i. Highway traffic noise analysis

Traffic noise impacts from the project were evaluated based on Federal Noise Abatement Criteria in conformance with corresponding Federal and State regulations and guidance, and the National Environmental Policy Act (NEPA). This traffic noise analysis was completed consistent with the guidance and requirements described in the Noise Requirements for MnDOT and other Type I Federal-aid projects (effective July 10, 2017).

Introduction

Noise is defined as any unwanted sound. Sound travels in a wave motion and is measured as a sound pressure level. This sound pressure level is commonly measured in decibels. Decibels (dB) represent the logarithm of the ratio of a sound energy relative to a reference sound energy. For highway traffic noise, an adjustment, or weighting, of the high-and low-pitched sound is made to approximate the way that an average person hears sound. The adjusted sound levels are stated in units of “A-weighted decibels” (dBA). A sound level increase of 3 dBA is barely noticeable by the human ear, a 5 dBA increase is clearly noticeable, and a 10 dBA increase is heard as twice as loud.

The Federal Highway Administration’s (FHWA) Procedures for Abatement of Highway Traffic Noise and Construction Noise is presented in the Code of Federal Regulations, Title 23 Part 772 (23 CFR 772). 23 CFR 772 requires the identification of highway traffic noise impacts and the evaluation of potential noise abatement measures, along with other considerations, in conjunction with the planning and design of a Federal-aid highway project. The MnDOT policy for implementation of the requirements of 23 CFR 772 is described in the Noise Requirements for MnDOT and other Type I Federal-aid projects (effective July 10, 2017). The MnDOT Noise Requirements apply to all projects that receive Federal-aid funds or projects that are subject to FHWA approval.

23 CFR 772 established the noise abatement criteria (NAC) for various land uses. Noise abatement measures will be considered when the predicted noise levels approach or exceed those values shown for the appropriate activity category in **Table 24** or when the predicted traffic noise levels substantially exceed the existing noise levels by 5 dBA or more.

Table 24: FHWA Noise Abatement Criteria

Activity Category	Activity Criteria ^(1,2) L ₁₀ dBA	Activity Description
A	57 dBA (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 ⁽³⁾	67 dBA (Exterior)	Residential
C ⁽³⁾	67 dBA (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.

Activity Category	Activity Criteria ^(1,2) L ₁₀ dBA	Activity Description
D	52 dBA (Interior)	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.
E ⁽³⁾⁽⁴⁾	72 dBA (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	NA	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical) and warehousing.
G	NA	Undeveloped lands that are not permitted.

1) $L_{eq}(h)$ shall be used for impact assessment.

2) The $L_{eq}(h)$ Activity Criteria values are for impact determination only and are not design standards for noise abatement measures.

3) Includes undeveloped lands permitted for this activity category.

4) Hotels and motels that function as apartment buildings are classified under Activity Category B.

Traffic noise impacts in Minnesota are evaluated by measuring and/or modeling the worst-hour traffic noise levels using the equivalent sound pressure level (L_{eq}) noise descriptor. L_{eq} is defined as the continuous steady sound level that would have the same total A-weighted sound energy as the real fluctuating sound measured over a given period of time. MnDOT defines a traffic noise impact as follows:

- Predicted traffic noise levels approach (within 1 dBA) or exceed the FHWA noise abatement criteria (NAC), or
- Predicted traffic noise levels substantially exceed (an increase of 5 dBA or greater in the L_{eq}) existing noise levels.

The noise modeling was completed using TNM 2.5. Noise model input files were developed based on the following assumptions:

- Traffic data included existing (2017) and future No Build and Build (2040) forecasted traffic volumes.
- The 12:00 pm to 1:00 pm period of the day was selected as the loudest hour based on eastbound and westbound traffic data on I-94 from TH 101 to Weaver Lake Road.
- A stationary source modeling procedure for parked and idling trucks and truck parking expansion was completed for the Elm Creek Rest Area per MnDOT's 2017 guidance.

Available project engineering plans, topographic contours and aerial imagery were used to create a three-dimensional model in TNM of the geometry of the existing and future design roadway configurations and the surrounding terrain and buildings. Inputs to the model include three-dimensional physical characteristics of road alignments (e.g., curves, hills, depressed, elevated, etc.); hourly traffic volumes in defined vehicle classes (e.g., cars, medium trucks, heavy trucks, buses, and motorcycles); vehicle speeds; receptor location and height; and data on the characteristics and locations of specific ground types, topographical features, and other features likely to influence the propagation of traffic noise between the roadway and receptors. Existing barriers in the project area were included in the model.

Traffic Noise Evaluation and Results

Existing noise level measurements were conducted on June 5, 2018 at twelve representative sites in the project vicinity. Traffic counts were taken at each site, concurrent with the noise measurements. FHWA's Traffic Noise Model Version 2.5 (TNM 2.5) was used to model the twelve field sites using traffic counts taken in the field. The results of the modeling were then compared to the measured noise levels. Comparing the modeled noise levels to the measured noise levels confirms the

applicability of the computer model to the specific project. Modeled noise levels at the twelve measurement sites were within ± 3 decibels of the measured noise levels (see Table 3 of the Traffic Noise Study Report, **Appendix N**).

Noise impacts were assessed by modeling noise levels at 715 representative locations in the project area. These receivers were selected to model the noise levels at 17 office and bank buildings, 16 restaurants (seven with outdoor use), four hotels (two with outdoor use), one movie theater, three rest stop picnic areas, 144 recreational facilities (library, playgrounds and trails), 60 industrial facilities, and 588 residential receptors (modeled as 470 noise receivers). The locations of the receivers are shown on Figure 2 through Figure 16 in Appendix A of the Traffic Noise Study Report (**Appendix N**).

The results of the modeling for the 715 representative receivers are presented in Table 5 of the Traffic Noise Study Report (**Appendix N**). No substantial increase noise impacts are predicted with the project.

In general, the proposed improvements would result in minor changes in traffic noise levels compared to existing conditions. The analysis shows that under the Future No Build alternative, Leq modeled traffic noise levels vary 0.1 dBA to 1.9 dBA over existing conditions. Modeled Leq noise levels under the Build Alternative vary 0 dBA to 4.7 dBA from existing (2017) conditions. A summary of the impacted noise receptors is provided in Table 25. The 2040 build Leq noise levels approach or exceed federal noise abatement criteria at 171 receptors. These include 74 NAC B receptors and 97 NAC C receptors.

Table 25: Summary of Impacted Noise Receptors

Modeled Year	Existing (2017)	Future No Build (2040)	Future Build Alternative (2040)
Receptors Exceed FHWA Noise Abatement Criteria	148	162	171
Leq Modeled Noise Level Ranges (low/high)	46.1 to 81.3 dBA	46.7 to 81.8 dBA	46.9 to 82.1 dBA

Traffic Noise Abatement Analysis

MnDOT's policies and procedures for evaluating noise barrier feasibility and reasonableness are set forth in Section 5.2 (Feasibility) and Section 5.3 (Reasonableness) of the 2017 MnDOT Noise Requirements. The factors for determining noise barrier feasibility and reasonableness as described in the MnDOT Noise Requirements are summarized below. Noise barrier construction decisions are based on a study of feasibility and reasonableness.

Acoustic feasibility requires that a noise abatement measure must achieve a 5 dBA reduction at an impacted receptor for that receptor to be considered benefited. Engineering feasibility is determined by physical and/or engineering constraints taking into consideration safety, topography, drainage, utilities, and maintenance. MnDOT has established a maximum noise barrier height of 20 feet above the finished ground line at the noise barrier.

There are three reasonableness factors that must be met for a noise abatement measure to be considered reasonable:

- One benefited receptor must achieve the noise reduction design goal of at least 7 dBA;
- The cost effectiveness (CE) of the noise barrier cannot exceed \$78,500 per benefited receptor based on an estimated noise barrier construction cost of \$36/sq. ft. plus any additional costs for rub rails, retaining wall reinforcement, etc.; and
- The viewpoints of benefited residents and property owners must be solicited, recorded and considered in reaching a decision on the proposed noise abatement measure.

Thirteen noise barriers were analyzed along the I-94 project corridor. Barrier NB10 did not achieve 5 dBA at any receptors to be considered feasible and was eliminated from further consideration. Eight barriers were able to achieve the MnDOT noise reduction design goal of at least 7 dBA for at least one benefited receptor, but the cost per benefited receptor exceeded MnDOT's cost effectiveness reasonableness threshold of \$78,500 per receptor. These barriers were not considered reasonable and were eliminated from further consideration. Four barriers were found to meet MnDOT's cost effectiveness reasonableness threshold and noise reduction design goal. Therefore, these barriers are proposed for the project and will move forward to collect the viewpoints of benefited receptors. A brief summary of each proposed barrier can be found below:

- Barrier NB1 has a preliminary cost per benefited receptor of \$77,976. There is a total of 21 benefited receptors, and the barrier is proposed at 20 feet high with a length of 2,255 feet.
- Barrier NB3 has a preliminary cost per benefited receptor of \$44,311. There is a total of 53 benefited receptors, and the barrier is proposed at 20 feet high with a length of 3,255 feet.
- Barrier NB12 has a preliminary cost per benefited receptor of \$28,735. There is a total of 94 benefited receptors, and the barrier is proposed at 20 feet high with a length of 3,765 feet.
- Barrier NB13 has a preliminary cost per benefited receptor of \$29,010. There is a total of 30 benefited receptors, and the barrier is proposed at 20 feet high with a length of 1,190 feet.

Viewpoints of the residents and owners of the benefited receptors will be collected in early 2019.

Statement of Likelihood

The traffic noise analysis for the proposed noise barriers described above is based upon preliminary design studies completed to date. Final mitigation decisions will be subject to final design considerations and the viewpoint of benefited residents and property owners. If it subsequently develops during final design that conditions have substantially changed, noise abatement measures may not be provided. Affected benefited receptors and local officials would be notified of plans to eliminate or substantially modify a noise abatement measure prior to the completion of the final design process. This notification would explain changes in site conditions (if any), additional site information, any design changes implemented during the final design process, and an explanation of noise barrier feasibility and reasonableness. A final decision regarding installation of the proposed abatement measure will be made upon completion of the project's final design and the public involvement process.

ii. Construction noise

Information regarding construction noise anticipated as part of the project is discussed in Section **Section IV.A.17** and of the Traffic Noise Study Report (**Appendix N**).

3. Section 4(f) – Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites

a) Background

Section 4(f) refers to the original section within the U.S. Department of Transportation Act of 1966 that set the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. The law, now codified in two places (49 USC 303 and 23 USC 138), is implemented by FHWA through regulations found at 23 CFR Part 774. The 23 CFR Part 774 regulations utilized by FHWA are applied for the analysis in this EA. Section 4(f) applies to all projects that receive funding from or require approval by an agency of the U.S. Department of Transportation (USDOT).

FHWA defines a Section 4(f) "use" as either a direct use or constructive use. A direct use occurs when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of land that is adverse to a resource protection under Section 4(f). Constructive use occurs when a project's proximity impacts are so severe that the protected activities, features or attributes that qualify a resource for protection under Section 4(f) are "substantially impaired."

Before approving a project that "uses" a Section 4(f) resource, FHWA must find that there is no prudent and feasible alternative and that the selected alternative minimizes harm to the resource. If there is a

prudent and feasible alternative that completely avoids Section 4(f) resources, it must be selected. If there is no prudent and feasible alternative that avoids Section 4(f) resources, FHWA has some discretion in selecting that alternative that causes the least harm to those resources.

In addition, FHWA regulations state that when a Section 4(f) use is anticipated, applicable regulations also require consultations with the official having jurisdiction over the resource to verify the site's significance and coordinate conclusions on use of the land, including efforts to avoid or mitigate the impacts.

FHWA may allow the selection of an alternative that causes a temporary occupancy (not use) of a Section 4(f) resource if all of the following are true:

- Duration is temporary (less than needed for project construction)
- No change in ownership of the land
- Scope of work is minor (i.e., the nature and magnitude of the changes to the resource are minimal)
- No anticipated permanent adverse physical impacts
- No interference with the activities or purpose of the resource (either temporary or permanent)
- The land used will be fully restored (to a condition at least as good as before the project)
- There is documented agreement from the official with jurisdiction over the resource regarding the above conditions

b) Project Section 4(f) resources

Figure 11 shows park and trail Section 4(f) resources inside and outside the project area. The project proposes to make minor ADA improvements to existing pedestrian pathways located on the Weaver Lake Road, 93rd Avenue, Maple Grove Parkway, and TH 101 overpasses to I-94. Two trail resources, Medicine Lake Regional Trail and a city of Maple Grove trail, pass under I-94 via pedestrian underpasses. No improvements are proposed to the trails.

Each resource described above had been issued a Limited Use Permit (LUP) by MnDOT for construction, maintenance, and operation of the trail within MnDOT right of way (**Appendix D**). The LUPs are subject to cancellation by MnDOT for any other highway or transportation purpose, with short-term (60, 90 days) notice. Based upon this language, it has been determined that the portions of the trails covered by the LUPs do not constitute a long-term public interest. Therefore, portions of the trail covered by these LUPs are not Section 4(f) resources and not subject to Section 4(f) protections.

c) Section 4(f) resources outside the project area

As noted under the Section 4(f) background information, a "use" can occur when a project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are "substantially impaired." There are several potential Section 4(f) resources located outside of the project area that will need to be considered. These resources include:

- Wedgewood Park
- Cedar Island Lake Linear Park
- Shadow Creek Linear Park
- Rice Lake Trails
- Medicine Lake Regional Trail
- North Hennepin Regional Trail
- City of Maple Grove Trail

These resources are shown on **Figure 11**. All resources, except for trail sections discussed above, are located outside of the project's construction limits. Temporary impacts may occur to the trails beneath I-94, but as discussed above this use does not constitute a Section 4(f) impact per the Limited Use Permits for those trails.

Given the location of these resources in relation to the project and the limited impacts anticipated with the project, it is not anticipated that the project will result in a Section 4(f) "use" of these resources.

4. Section 6(f) – Land and Water Conservation Act

Section 6(f) of the Land and Water Conservation Fund Act of 1965 (LAWCON) stipulates that any land or facility planned, developed, or improved with LAWCON funds cannot be converted to uses other than parks, recreation, or open space unless land of at least equal fair market value and reasonably equivalent usefulness is provided. Anytime a transportation project will cause such a conversion, regardless of funding sources, replacement land must be provided.

The Minnesota DNR maintains a list of properties that are subject to Section 6(f) requirements. This list is available on the DNR's website. This list was reviewed, and the Medicine Lake Regional Trail Corridor was identified as a property subject to Section 6(f) requirements. Medicine Lake Regional Trail is owned by Three Rivers Park District.

The project will not result in acquisition of, or physical alteration to, the Medicine Lake Regional Trail Corridor. Temporary impacts may occur to the section of the trail that passes under I-94 within MnDOT right of way. These impacts consist of limited trail closure for the safety of trail users while unbonded overlay work is occurring on I-94. Temporary closures are expected to last less than six months. Coordination with the DNR occurred and documented the location and duration of temporary impacts. Based on this coordination, Section 6(f) review with the National Park Service is not anticipated (**Appendix D**).

5. Section 7 – Federal Endangered Species

a) Background

Section 7 of the Endangered Species Act of 1973, as amended, requires federal agencies to review any action that it funds, authorizes, or carries out to determine whether it may affect federally listed threatened, endangered, or proposed species or listed critical habitat. Federal agencies (or their designated representatives) must consult with the U.S. Fish and Wildlife Service (USFWS) if any such effects may occur as a result of their actions. Consultation with the USFWS is not necessary if the proposed action will not directly or indirectly affect listed species or critical habitat. If a federal agency (or its representative) finds that an action will have no effect on listed species or critical habitat, it should maintain a written record of that finding that includes supporting rationale.

b) Project area species and effects

MnDOT's Office of Environmental Stewardship (OES), is FHWA's designated representative to review Section 7 resources within Minnesota for federally funded projects. OES staff reviewed the project area for federally listed species. There were four species identified within Hennepin County: the northern long-eared bat (*Myotis septentrionalis*), Higgins eye pearl mussel (*Lampsilis higginsii*), snuffbox (*Epioblasma triquetra*), and rusty-patched bumble bee (*Bombus affinis*).

The northern long-eared bat is a federally-listed threatened species and has the potential to be present within Hennepin County. The northern long-eared bat hibernates in caves and mines in the winter months and roosts and forages in upland forests during spring and summer. Although no critical habitat has been designated for this species, removal of trees can result in a loss of habitat. Approximately 6.38 acres of tree removal will occur as part of the project.

Staff from OES determined that the project "may affect but is not likely to adversely affect" the northern long-eared bat. OES staff noted that the project will occur within the northern long-eared bat's range, but there are no documented maternity roosts and/or hibernacula within the project area. Tree removal will occur during the winter during the bat's inactive season and the loss of habitat will be spread along a long linear corridor that is already subject to disturbance. OES staff shared its determination with representatives from the USFWS (**Appendix J**). USFWS concurred in writing with OES staff's determination.

Staff from OES determined that the project will have "no effect" on the Higgins eye pearl mussel snuffbox, and rusty-patched bumble bee as no documented occurrences of these species exist within the project area and no suitable habitat will be impacted by the project.

OES staff did recommend that the project should include minimization measures to prevent effects to the bat. The project must perform winter tree removal (November 1 to March 31) to avoid possible impacts to the species during the bat's active season. Disturbed areas must be revegetated using native seed mixes per DNR, MnDOT, and USFWS guidance. In addition, the project must utilize bio-netting or natural netting for erosion control (if erosion control blanket is used), which will reduce the risk of bat or other wildlife entrapment. MnDOT has agreed to these requests for construction and these measures will be noted in construction documents and requests for proposals for construction.

6. Section 404 – Clean Water Act

a) Background

Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into the Waters of the United States (wetlands, tributaries, lakes, etc.), excluding those wetlands that are hydrologically isolated on the landscape. Section 404 of the CWA is under the purview of the United States Army Corps of Engineers (USACE) and requires a permit to be issued by the USACE prior to the placement of any dredged or fill material into any Water of the United States, including wetlands. The USACE is responsible for administering the Section 404 permitting program, conducting Approved or Preliminary Jurisdictional Determinations (JD), developing policy and guidance, and enforcing all other Section 404 provisions.

Transportation projects qualify for coverage by the Transportation Regional General permit if:

- Each single and complete project will not cause the permanent loss of more than one acre of Waters of the US; or
- The overall project (including all single and complete projects) results in the permanent loss of three acres or less of Waters of the US. In this case, the one-acre threshold for each single and complete project would not apply.

Projects with permanent impacts that do not qualify for the Transportation General permit require a Letter of Permission (LOP). Impacts of more than five acres, and not qualifying for a Transportation General Permit or LOP, require a Standard Individual Permit and public comment period.

b) Project impacts

Several water resources were identified within or near the project area, including 22 wetlands, 10 stormwater ponds, two tributaries, two lakes, and numerous wet ditches. **Appendix H** contains information about the wetlands in the project area and the Wetland Two-Part Finding.

Wetlands were delineated in July and August 2018, and boundaries are currently under review by the LGU and USACE. Boundary approval is anticipated in January 2019. Jurisdictional determination of these aquatic resources will be determined prior to permitting.

Seventeen wetlands will be impacted because of the preferred alternative and compensatory mitigation may be required for these aquatic resources. The I-94 UBOL resurfacing and travel lane construction may be permitted separately from the proposed Brockton interchange project. An early widening project may also be permitted separately to accommodate construction and is expected to impact 0.04 acre of wet ditch. If compensatory mitigation is required for the impacts to aquatic resources that the USACE has jurisdiction over, or has the potential to claim jurisdiction over, it is anticipated that the I-94 portion of the project will qualify for a Transportation Regional General Permit. The proposed Brockton interchange project is expected to require a Letter of Permission.

The total project will be anticipated to result in approximately 3.9 acres of impacts to wetlands (**Table 11**). Impacts by resource type are shown in **Table 26**. The I-94 portion of the project (2.0 acres) is expected to qualify for a Transportation Regional General Permit. The proposed Brockton interchange project (1.9 acres) is expected to qualify for a Letter of Permission.

Table 26: Approximate Impacts to USACE Regulated Aquatic Resources

Aquatic Resource	Approximate Impact (acres)
Wetland	3.9
Stormwater Pond	0.4
Wet Ditch	16.7
Tributary	0.4
Total Impact	21.4

7. Section 401 – Clean Water Act

a) Background

Section 401 of the Clean Water Act establishes a program under which any applicant for a Federal license or permit to conduct an activity that may result in discharge of a pollutant in to a water of the United States must provide the licensing or permitting agency with a certificate from the State in which the activity is occurring that states that the discharge is in compliance with the Clean Water Act. In Minnesota, this program is administered by the MPCA.

b) Project impacts

Any waters that are determined to be under the jurisdiction of the USACE will also require Section 401 Water Quality Certification. As described in Section 10 above, this will involve approximately 21.4 acres of USACE-regulated aquatic resources.

The MPCA has provided 401 certification for projects and activities that qualify for authorization under the Transportation Regional General Permit. MPCA has waived 401 Certification for projects authorized under a LOP.

8. Indirect Effects

a) Background

The Council on Environmental Quality's *Regulation for Implementing the Procedural Permissions of the National Environmental Policy Act* requires that both direct and indirect impacts of a proposed action be evaluated. Direct effects are caused by, and coincide in time and place, with the proposed action. Indirect effects are caused by the action but are later in time or further removed in the distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects related to changes in the pattern of land use, population density, or growth rate and related effects on air, water and other natural systems.

b) Project Impacts

The proposed project is consistent with long-term plans for MnDOT, Hennepin County, and the cities of Maple Grove, Dayton, and Rogers.

Environmental effects would likely occur in both the No Build alternative and Preferred alternative as described in the Cumulative Potential Effects section (Section IV.A.19). However, the added lanes and new interchange may increase the attractiveness of the city of Dayton to business, leading to a shortened build-out timeframe. For future actions, there would be regulations and permits that would have to be followed and obtained as that development occurs, minimizing the cumulative impacts associated with the project.

V. PUBLIC AND AGENCY INVOLVEMENT (AND PERMITS/APPROVALS)

A. PUBLIC INVOLVEMENT PLAN

The first step in developing a Public Involvement Plan (PIP) was to undertake the Conflict Assessment and Management Process (CAMP). This process identified all stakeholders, identifies and evaluates any risks to successful project delivery, and proposes strategies (primarily around stakeholder engagement) to minimize these risks. The PIP was then written after stakeholder identification and the CAMP process, and public and stakeholder engagement activities were implemented throughout the process. The PIP established a framework for communication between MnDOT and project stakeholders and has given MnDOT a better understanding of the issues and opportunities presented by the proposed project from the perspective of the public and partner agencies. This document has also served as a means to inform the public and partner agencies about the purpose of the project, as well as the standards, procedures, and constraints that MnDOT must take into consideration while developing the project.

The PIP outlines the goals of the project, its principles, and the desired outcomes of the public engagement efforts. The plan also describes the key stakeholder groups that the project is seeking to engage and includes a detailed description of the methods in which these stakeholders will be reached. Over 60 different stakeholder groups were identified as part of the PIP. The key stakeholder groups identified include:

- City of Dayton
- City of Maple Grove
- City of Rogers
- City of Corcoran
- Hennepin County
- Metro Transit
- Metropolitan Council
- BNSF
- Adjacent Businesses
- Freight
- Travelling Public
- Possible EJ population

The project's public involvement process was designed to provide meaningful and interactive outreach opportunities for all stakeholders. Also, the development of the PIP allowed the project team to directly address the issues of potential conflict and scope a public process specifically around those issues.

The overarching goals for public involvement are to inform and educate stakeholders and the public about the background and purpose of the project and to provide opportunities for interested parties to identify issues, concerns and priorities. The following sections describe the project's public and agency engagement efforts in more detail.

B. COORDINATION MEETINGS AND CONTACTS

The following is a summary of the events held and activities conducted as well as those that are expected to occur during and following the release of this document to the public. The public involvement opportunities were divided into two phases, the first of which being engagement during the development of the EA. Due to schedule constraints, Phase I included a six-month public involvement process. Phase II will be completed once the alternative is selected and the EA is open for public comment.

1. Open Houses

Two open houses were held to provide an introduction to the project to the local and regional community and obtain their input in-person. Open houses were held at Maple Grove Municipal Center, a centrally identified location on the following dates:

- July 19, 2018
- November 26, 2018 – City of Dayton Brockton interchange open house

- Winter 2019

In addition, a public meeting/hearing will be held as part of the public comment period for this EA. The public meeting will provide a venue for attendees to ask questions and formally submit public comments verbally and/or in writing.

In general, the public is supportive of the proposed project. In the evaluation of the alternatives, several comments were received from stakeholders that the dynamic shoulder should not be included, and that an additional lane was a better approach. The dynamic shoulder alternative was ultimately removed from consideration for a variety of reasons.

Summaries of the questions and responses from open house meetings can be found in the Frequently Asked Questions section on the project webpage: <http://www.dot.state.mn.us/metro/projects/i94rogers/>.

2. City Council Presentations

The project team made presentations to the City Councils of Dayton, Maple Grove, and Rogers to provide project updates and help foster consent building. City Council meetings were also broadcasted on the local community access television channel. These presentations were completed at two stages of the EA development – once as a project introduction, and a second time upon selection of the preferred alternative. The dates of the city council presentations are below:

- City of Dayton City Council – July 25, 2018
- City of Maple Grove City Council – August 6, 2018
- City of Rogers City Council – August 28, 2018
- 3. Website, News Releases, Social Media

MnDOT is hosting a project webpage to serve as an information resource that is used to provide updates as the project progresses. The website is also a tool to collect information from people who are interested in receiving email updates about the project: <http://www.dot.state.mn.us/metro/projects/i94rogers/>.

Several news releases were also completed to announce open houses. MnDOT utilized its social media platform and partnered with agencies to use their platforms as well to disseminate information about project milestones, open houses, and public hearings.

3. Community Noise Engagement

This project included the convening of a Community Noise Engagement (CNE) committee to inform, discuss, and ultimately vote on the noise walls. The committee met three times during the public involvement process. The first meeting was to discuss MnDOT's noise process in general. All residents within 500 feet of the project were notified of this meeting. Additionally, the property manager of an affordable housing community that is within a ¼ mile of the study area was informed of the meeting. At that meeting volunteers were requested to join the advisory committee and names were collected to invitations to the remaining two meetings. The second meeting conveyed the results of the noise analysis and collected input from individuals. The third meeting shared proposed noise wall locations and reviewed the voting process. The CNE allowed MnDOT to engage directly with residents potentially affected by noise. The CNE met on the following dates:

- July 31, 2018 (general meeting where all potentially affected residents were invited)
- September 19, 2018
- December 4, 2018
- Final voting by benefited receptors in early 2019

4. Freight Communication

The I-94 corridor is a major freight thoroughfare. Also, given the closure of the state's busiest rest area, it was critical to specifically engage the trucking and freight community. Communication to the freight industry and users of the rest area is being planned.

5. On-Going Engagement

Per the PIP, there are a number of engagement activities to be completed between the draft of this document and the project construction. These include:

- Ongoing website updates and news releases
- Changeable Message Signs along the corridor
- Social Media campaign and deployment
- Project videos
- Meetings with property owners
- E-blasts and hotline

C. PROJECT ADVISORY COMMITTEES

In addition to the public engagement opportunities described above, there were means of communication with project partners and other public agencies, as described below.

1. Project Management Team (PMT) Meetings

MnDOT met weekly with internal staff to discuss the project and different project elements. The meetings were used to keep the different functional groups within MnDOT informed about the project development and to address technical issues arising from the project. Items related to design, environmental documentation, property acquisition, agreements with partner agencies, and permitting were discussed.

2. Technical Advisory Committee Meetings

The purpose of the Technical Advisory Committee (TAC) was to provide key agency stakeholders timely and pertinent information and get input from the members. Members of the TAC included representatives from the cities of Maple Grove, Dayton, Corcoran, and Rogers, Hennepin County, Metropolitan Council, and Federal Highway Administration.

This group weighed in on traffic methodology, traffic management planning, project phasing, design alternatives, and public involvement. They met six times and provided significant feedback to inform the alternatives analysis.

D. SUMMARY OF EARLY COORDINATION COMMENTS

As a result of the early coordination meetings and contacts, comments and concerns about the proposed project were received, both verbally and in writing. Substantive comments will be listed below if received during the process. To date, general support for the project has been received. Summaries of the questions and responses from open house meetings can be found in the Frequently Asked Questions section on the project webpage: <http://www.dot.state.mn.us/metro/projects/i94rogers/>.

E. PERMITS AND APPROVAL REQUIREMENTS

The permits and approvals needed for the project are shown in **Section IV.A. Item 8**. Environmental commitments are summarized in **Appendix P**.

F. PUBLIC COMMENT PERIOD AND PUBLIC HEARING

Comments from the public and agencies affected by this project are requested during the public comment period. A combined public informational meeting/public hearing will be held after this Environmental Assessment has been distributed to the public and to the required and interested federal, Native American Tribes, and state and local agencies for their review.

At the informational meeting/public hearing, preliminary design layouts for the alternatives under consideration along with other project documentation will be available for public review. The public will also be given the opportunity to express their comments, ideas, and concerns about the proposed project. These comments will be

received at the hearing and during the remainder of the comment period and will become a part of the official hearing record.

G. REPORT DISTRIBUTION

Copies of this document have been sent to agencies, local government units, libraries and others as per Minnesota Rule 4410.1500 (Publication and Distribution of an EAW). A copy of the EA is also available at the MnDOT Metro District Office (1500 CR B2 W, Roseville, Minnesota)

Local units of government with copies of the document include the City of Maple Grove (Government Center – 12800 Arbor Lake Pkwy), City of Dayton (City Hall – 1226 S. Diamond Lake Road), City of Rogers (City Hall – 22350 S. Diamond Lake Road), and Hennepin County (County Government Center – 300 S. 6th Street, Minneapolis). A copy was also provided to the Maple Grove Library (8001 Main Avenue N.) and Rogers Library (21300 John Milless Drive).

H. PROCESS BEYOND THE HEARING

Following the comment period, MnDOT and FHWA will make a determination as to the adequacy of the environmental documentation. If further documentation is necessary it could be accomplished by preparing an Environmental Impact Statement (EIS), by revising the Environmental Assessment, or by clarification in the Findings of Fact and Conclusion, whichever is appropriate.

When the environmental documentation is determined adequate, MnDOT will choose a project alternative, either the No Build or the alternatives under consideration.

If an EIS is not necessary, as currently anticipated, MnDOT will prepare a "Negative Declaration" for the state environmental requirements. MnDOT will also prepare a request for a "Finding of No Significant Impacts" (FONSI) that will be submitted to the FHWA. If the FHWA agrees that this finding is appropriate, it will issue a FONSI.

Notices of the federal and state decisions and availability of the above documents will be placed in the Federal Register and the Minnesota Environmental Quality Boards (EQB) Monitor. MnDOT will also distribute the Negative Declaration and FONSI to the Environmental Assessment Worksheet (EAW) distribution list announcing the environmental and project alternative decisions that were made.

VI. APPENDICES

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- Appendix B: Technical Memo: Purpose and Need
- Appendix C: Technical Memo: Alternatives Analysis
- Appendix D: Trail Limited Use Permits and Section 6(f) Coordination
- Appendix E: DNR Correspondence
- Appendix F: NRCS Farmland Conversion
- Appendix G: Well Logs
- Appendix H: Wetland Assessment and Two-Part Finding
- Appendix I: Phase I Environmental Site Assessment
- Appendix J: Section 7 Coordination
- Appendix K: Cultural Resources Studies and Approvals
- Appendix L: Technical Memo: Environmental Justice Analysis
- Appendix M: Model Methodology Memo
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Appendix B: Technical Memo: Purpose and Need

Appendix C: Technical Memo: Alternatives Analysis

Appendix D: Trail Limited Use Permits and Section 6(f) Coordination

Section 6(f) Coordination Email

LUP 2780-097

LUP 2780-020

LUP 2780-057

LUP 2780-087

LUP 2780-098

LUP 2780-0128

LUP 2780-0129

LUP 2780-0151

Appendix E: DNR Correspondence

Natural Heritage Review Letter

DNR Fact Sheet: Preventing Entanglement by Erosion Control Blanket

DNR Fact Sheet: Blanding's Turtle

Base Flood Elevation Acceptance Letter for North Fork Rush Creek

Appendix F: NRCS Farmland Conversion

NRCS Form AD-1006

Appendix G: Well Logs

Appendix H: Wetland Assessment and Two-Part Finding

Wetland Assessment and Two-Part Finding Form

Figure 1 – 7: Wetland Delineation

Appendix I: Phase I Environmental Site Assessment

Appendix J: Section 7 Coordination

MnDOT Office of Environmental Stewardship Section 7 Request for Concurrence Letter
USFWS Concurrence Email

Appendix K: Cultural Resources Studies and Approvals

MnDOT Office of Environmental Stewardship Tribal Request for Comment Letter

MnDOT CRU Findings Letter

MnSHPO and State Archeologist Concurrence Letter

Appendix L: Technical Memo: Environmental Justice Analysis

Appendix M: Model Methodology Memo

Appendix N: Traffic Noise Study Report

Appendix O: Air Analysis Report

Appendix P: Environmental Commitment Sheets

Appendix Q: Floodplain Assessment