



Draft Supplemental Environmental Impact Statement and Section 4(f) Evaluation

August 2019

Prepared for the

I-94 Modernization Project in Detroit from I-96 to Conner Avenue



U.S. Department
of Transportation
**Federal Highway
Administration**

I-94 Modernization Project in the City of Detroit
Wayne County, Michigan
DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
AND DRAFT SECTION 4(F) EVALUATION
Submitted Pursuant to 42 USC 4332(2)(C) and CEQ Regulations (40CFR 1500 (et seq.)) by the:

**U.S. Department of Transportation
Federal Highway Administration**
and
Michigan Department of Transportation
Cooperating Agency:
U.S. Environmental Protection Agency

Date of Approval

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This document describes the social, economic and natural environmental impacts associated with the modernization of approximately 6.7 miles of Interstate freeway (I-94) in the city of Detroit, Michigan between I-96 and Conner Avenue (Project). Improvements include adding a travel lane in each direction, modernizing system and service interchanges, reconstructing bridges crossing over the freeway, and changing existing service drives to maximize efficiencies of the connected local travel patterns. This document includes a summary of the planning basis and of the impacts associated with the proposed Project and the process involved in determining the preferred alternative. Proposed mitigation measures are also included.

After circulation of the Draft Supplemental Environmental Impact Statement (DSEIS), and consideration of the comments received, the Federal Highway Administration (FHWA) may issue a Combined Final Supplemental Environmental Impact Statement and Record of Decision (Combined FSEIS and ROD) document, unless statutory criteria or practicability considerations preclude issuance of the combined document. If comments received on the DSEIS are minor and responses to those comments are limited to factual corrections or explanations of why the comments do not warrant further response, the FHWA may instead issue a FSEIS Errata Sheet in compliance with Section 1319(a) of MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), *Accelerated Decision Making in Environmental Reviews*.

Project purpose: The purpose of the Project is to improve safety, capacity, local connectivity, and condition of the I-94 roadway, service drives, bridges, and interchanges between I-96 and Conner Avenue. The Project improvements will be context sensitive and support the mobility needs of local, regional and interstate commerce as well as national and civil defense in a way that integrates all modes of travel.

Additional information: For additional information concerning the Project or this document please visit the Project website at I94Detroit.org or contact one of the following persons:

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Where to find a review copy: An electronic copy of this document is available on the Project website, I94Detroit.org. Hard copies are located at the Michigan Department of Transportation (MDOT) office, the I-94 Project Office, and select libraries and community centers throughout the Project area. Please contact one of the people listed above for more information or check the Project website. Technical documents referred to in this DSEIS are available at the same locations.

Public hearing: Information on the date, time, and location of the public hearing is published in local newspapers and on the Project website I94Detroit.org.

How to comment: Anyone can comment on this document during the 45-day comment period. We encourage residents to comment because we need to understand resident's concerns so that the Project can be designed to avoid or minimize impacts and if impacts cannot be avoided, that mitigation measures can be developed. Your comments on the DSEIS may be submitted in a variety of ways: You may submit written comments through the Project website at I94Detroit.org, mail your comments to Terry Stepanski at the address above, or email your comments to the Project email box: MDOT-I-94comments@michigan.gov. Also, at the scheduled public hearing, you may give verbal testimony, use comment forms that will be available, or give your verbal testimony to a court reporter at the hearing.

PREFACE

The National Environmental Policy Act of 1969 (NEPA) requires that the social, economic, and natural environmental impacts of any proposed action of the federal government be analyzed for decision-making and public information purposes. There are three classes of action. Class I Actions, which are those that may significantly affect the environment, require the preparation of an EIS. Class II Actions (categorical exclusions) are those that do not individually or cumulatively have a significant effect on the environment, and do not require the preparation of an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). Class III Actions are those for which the significance of impacts is not clearly established. Class III Actions require the preparation of an EA to determine the significance of impacts and the appropriate environmental document to be prepared – either an EIS or a Finding of No Significant Impact (FONSI). An EIS may be supplemented when FHWA determines that new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS. This DSEIS evaluates changes to the Approved Selected Alternative (ASA) identified in the 2004 FEIS and 2005 Record of Decision (ROD) for the Project.

Because of adverse and *de minimis* effects on historic resources and public parks/recreation areas, this document also serves as coordination documentation under Section 106 of the National Historic Preservation Act of 1966, as amended, and as the draft Section 4(f) Evaluation, under Section 4(f) of the Department of Transportation Act of 1966, which requires special consideration of these resources.

STATEMENT OF DISCLOSURE

HNTB Corporation has no interest, financial or otherwise, in the preparation of the I-94 Rehabilitation Project Supplemental Environmental Impact Statement and Section 4(f) Evaluation and Revised ROD other than compensation for the services performed and the general enhancement of HNTB's professional reputation. The team of professionals which HNTB assembled to conduct field studies and analyses was selected based solely upon their qualifications. To the best of HNTB's knowledge, no person or firm contributing to the preparation of this document has any interest in the findings or outcome of the process.

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1. PURPOSE AND NEED

The purpose and need for the I-94 Modernization Project (Project) as described in the 2004 Final Environmental Impact Statement (2004 FEIS), has not changed. The 2004 FEIS can be found online at I94Detroit.org.

1.1. Purpose of the Proposed Action

The purpose of the proposed Project is to improve safety, capacity, local connectivity, and condition of the I-94 roadway, service drives, bridges, and interchanges between I-96 and Conner Avenue. The proposed Project improvements will be context sensitive¹ to the greatest extent practicable and support the mobility needs of local, regional, and interstate commerce as well as national and civil defense in a way that integrates all modes of travel.

1.2. Project Background

Almost 30 years ago, the Michigan Department of Transportation (MDOT) recognized the need to reconstruct I-94 in Detroit, and in the 1990s, the department sought community consensus to repair the Interstate.

In December 2004, the Federal Highway Administration (FHWA) approved an FEIS for the I-94 rehabilitation including one additional through-lane in each direction, continuous service drives, replacement of more than 60 bridges, and interchange modernizations at I-75 (the Fisher Freeway) and M-10 (Aretha L. Franklin Memorial Freeway/Lodge Freeway).

A Record of Decision (ROD) was filed in 2005 that allowed MDOT to proceed to final design and construction activities for the Approved Selected Alternative (ASA).

? What are 'ASA' and 'ASAM'?

The “Approved Selected Alternative” or **ASA** is the selected alternative described in the Project’s 2005 ROD, which affirmed the 2004 FEIS recommended alternative.

The “Approved Selected Alternative with Modifications” or **ASAM** is a proposed modification to the ASA. MDOT has not yet approved or selected the ASAM, but it is the preferred alternative evaluated in this DSEIS.

After a formal public and agency review period and public hearing on the SDEIS, MDOT and FHWA will identify a selected alternative in the Combined FSEIS and ROD.

¹ See “context sensitive” in the Glossary of Terms in **Section 11**.

MDOT completed in 2010 corridor design guidelines and a detailed engineering report that advanced Project conceptual design to a base plan level, which prepared the Project for final design.^{2,3} MDOT secured construction funding, and in summer 2015, the department hosted open-house meetings in Detroit to gather public feedback before beginning Project construction.

At these 2015 meetings, MDOT heard public opposition to continuous service drives, property impacts and a lack of connectivity among neighborhoods. MDOT then worked with stakeholders to address their Project concerns and, the department partnered with the city of Detroit to develop potential modifications to the ASA, focusing on local connectivity improvements over the freeway.

MDOT conducted a series of workshops with the city to review changes in neighborhood mobility and future visions for city residents. **Appendix A** summarizes these workshops, and **Chapter 7** further discusses them. The results of the workshops produced modifications to the ASA without expanding the footprint of the freeway design. The modifications were presented publicly in fall 2016 at a second round of MDOT-hosted open-house meetings in Detroit. Overall, the design modifications to the ASA focus on the following elements:

- Using existing city streets more effectively as local connections instead of building new, continuous service drives adjacent to the freeway, as the ASA proposed
- Modifying local access ramps to and from I-94, M-10 and I-75 to improve operations and safety
- Using the “Complete Streets” approach to design bridges and service drives, making them user-friendly for drivers, bicyclists and pedestrians
- Reducing the overall Project footprint to avoid and minimize impacts

On July 7, 2017, MDOT and FHWA published a Notice of Intent (NOI) in the *Federal Register* announcing plans to prepare this Supplemental EIS (SEIS) for proposed design modifications to the ASA.



What is a ‘Complete Street’?

According to Michigan Public Act (PA) 135 of 2010, a Complete Street provides “appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods whether by car, truck, transit, assistive device, foot or bicycle.”

² Michigan Department of Transportation. I-94 Rehabilitation Project Corridor Design Guidelines. Lansing: Michigan Department of Transportation. Retrieved from https://www.michigan.gov/documents/mdot/MDOT_I-94CorridorDesignGuidelines_332502_7.pdf.

³ Michigan Department of Transportation. (2010, June). I-94 Rehabilitation Detailed Engineering Report From I-96 to Conner Avenue (JN 32587, CS 82024) Detroit, Michigan. Lansing, Michigan: MDOT.

1.3. Description of the Project Limits

1.3. Description of the Project Limits

The Project extends along the following corridors (see **Figure 1-1**):

- I-94 from east of the I-94/I-96 interchange to east of the I-94/Conner Avenue interchange
- M-10 from Martin Luther King, Jr. Boulevard to Seward Avenue
- I-75 from Warren Avenue to Custer Street
- Conner Avenue from Shoemaker Street to Harper Avenue

Figure 1-1: I-94 Project Limits



1.3.1. Logical Termini and Independent Utility

As required under federal regulations to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the Project must:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.⁴

The logical termini developed in the 2001 Draft Environmental Impact Statement (2001 DEIS), from I-96 to Conner Avenue, has not substantially changed. Based on more detailed design, the Project limits were extended approximately 350 feet south on Conner Avenue so that the transitions from on-street bike lanes and off street existing and planned paths can be properly designed. The Project continues to address specific needs within those termini and the Project's usefulness does not depend on other improvements being constructed. The Project therefore continues to exhibit independent utility.

⁴ Environmental Impact and Related Procedures, Title 23, CFR, Part 771.111(f) (2018)

1.4. Need for Project

I-94 is vital to the local, regional, and international freight and passenger transportation system in Detroit. It serves major international border crossings and carries substantial amounts of local and regional traffic. As a result of neighborhood and stakeholder engagement, the need for local connectivity and walkability has come to the forefront. Information and data that was used in the 2004 FEIS as evidence of a need has been updated to ensure the needs are still relevant and reflect current conditions and updated plans.

1.4.1. Outdated Design

Outdated design features include narrow shoulder width, left-hand on- and off-ramps, and the lack of adequate acceleration-deceleration lanes for merging and weaving. These outdated design features exacerbate traffic congestion and crash frequency. Traffic congestion causes delays in travel time, which contribute to losses in personal and economic productivity. Stop-and-go traffic increases fuel consumption, which results in increased emissions and travel costs. Cargo delays on I-94 increase the cost to deliver goods to local, regional, and international markets.

1.4.2. Infrastructure Condition

This section of I-94 roadway was constructed during the mid-20th century, making it one of the oldest urban Interstate highways in the country. Since construction, MDOT has made as-needed spot repairs and done routine maintenance but there has not been a comprehensive rehabilitation or reconstruction within the Project limits. The pavement was milled and resurfaced in 2002 as a short-term improvement intended to provide an acceptable riding surface until major rehabilitation could be initiated. The pavement resurfacing was expected to last five to seven years and is already past its life expectancy.

Annually MDOT assesses the condition of the paved federal-aid road system using Pavement Surface Evaluation and Rating (PASER) rating system. PASER is a visual inspection that evaluates the surface of the pavements rating them as Poor, Fair or Good. Once substantial deterioration begins and the pavement ages, the pavement condition declines rapidly (see **Figure 1-2**). PASER ratings are recorded on an interactive map found at <https://www.mcgi.state.mi.us/tamcMap/>.⁵ The most recent assessment shows that the pavement in the Project limits is rated from Good to Poor with the section between M-10 and I-75 and from Saint Aubin Street to Conner Avenue being rated Poor and the section from Russel Street to Saint Aubin Street being the only segment with a Good rating. Many of the service drives are also rated Poor.

⁵ TAMC, T. A. (2018, 04 11). TAMC Interactive Map. Retrieved from Michigan.gov: <https://www.mcgi.state.mi.us/tamcMap/#/identify>.

Figure 1-2: PASER Ratings Scale



Pavement Surface Evaluation and Rating PASER Manual Asphalt Roads. *Wisconsin Transportation Information Center. UW-Madison. 2002. Revised 2013.*

Ratings of several bridges within the Project limits required their closure, removal, and/or replacement since the 2005 ROD was published. Since 2005, the Trumbull, Woodward, Gratiot, Chene, and Van Dyke bridges have been replaced, the Helen, Rohns, and Springfield Street pedestrian bridges were removed, and the Third Avenue Bridge was closed. Approximately 2,500 vehicles previously using the Third Avenue Bridge were diverted to Second Avenue. The Third Avenue bridge may require demolition prior to the Project's Combined FSEIS and ROD. The remaining bridges are rated fair to poor, with a few bridges still in good overall condition. Bridge conditions along this section of I-94 continue to decline and may require the implementation of weight restrictions, additional closures, and/or replacements if their condition is not improved. Detours will not be implemented until weight restrictions and/or bridge closures are required.

1.4.3. Traffic

The existing facility does not provide adequate capacity for existing traffic volumes or for future traffic volumes projected through 2040. In 2014, new traffic volumes were collected and analyzed for the AM (7-9 a.m.) and PM (4-6 p.m.) peak periods. In both the AM and PM peak hours heavy traffic congestion is observed throughout the I-94 corridor. High traffic volumes merging onto I-94 from the system interchange ramps at I-96, M-10, and I-75 make up the primary cause of the congestion, which is exacerbated by the high number of closely spaced on- and off-ramps and high traffic volumes on I-94, which exceed 6,000 vehicles per hour in a three-lane segment. The results of the traffic analysis identify several Level of Service (LOS) F freeway segments throughout the I-94 corridor. (See definition of LOS below and in **Figure 1-3.**) Freeway segments that experience a LOS F have unstable traffic flow and indicate the demand has exceeded the capacity of the freeway. MDOT requires a minimum LOS D for urban areas. MDOT allows LOS E in urban areas only if it is restricted to peak hours. To achieve an acceptable (LOS D) in the Project limits, there would need to be less than 5,400 vehicles per hour. *TM-6 Existing Traffic Data Technical*

1.4. Need for Project

Memorandum, dated May 6, 2015 and *TM-9 Existing (2014) Highway Capacity Software and Paramics Analysis for I-94*, dated May 21, 2015, document the traffic data and analysis in greater detail.

SEMCOG's 2040 Travel Demand Model (TDM) was used to predict traffic volumes on I-94 to the year 2040 using the existing traffic volumes that were collected in 2014. The TDM projected I-94 freeway traffic volumes are predicted to increase by 29% for 2040 build conditions. The TDM projected traffic volumes on the I-94 ramps, depending on location, are predicted to increase by 5% to 29% for 2040 build conditions. *TM-3 I-94 Traffic Volume Forecasting Technical Memorandum*, dated May 6, 2015, documents these traffic projections.

As documented in *TM-8 Existing (2014) Paramics Assessment and Model Calibration for I-94 Technical Memorandum*, the I-94 corridor is heavily congested, which is evident from the low speeds and stop-and-go conditions (see **Appendix B**). With the additional traffic projected by 2040, traffic flow will deteriorate further, and congestion will increase. This generally means that speeds will be even lower, with more stops, and congestion will extend over a longer period.

In 2014, speed data was analyzed to measure the free flow and congested speeds along the I-94 corridor (I-96 to Conner). Speed data was obtained for the AM (6-10 a.m.) and PM (2-7 p.m.) peak periods. The extended time frames were used to observe the buildup of congestion within the I-94 corridor. Both the AM and PM peak periods observe free flow speeds of 55-60 mph at the beginning and end of each period. The most heavily congested time in the AM peak period was 7-9 a.m., when speeds dropped to 20-30 mph; in the PM peak hour, the most heavily congested time was 3-6 p.m., when speeds dropped to 15-25 mph. In the most recent *2019 Top Truck Bottleneck List*, the American Transportation Research Institute ranks I-94 at I-75 as 18th with an average speed during the peak hour of 30.8 mph. Trucking industry costs due to congestion include lost hours of productivity while trucks sit still or drive at average speeds much lower than the limit.⁶

The 2004 FEIS described how drivers use I-94 to make short trips along the corridor because of the lack of service drives and parallel streets. East-west local travel along the corridor is still often made by using I-94. Drivers need more local street options for local east-west trips. Separation of local and through traffic is needed to improve operations on and along I-94.

**What is Level of Service, or 'LOS'?**

Level of Service is the measure of a roadway's congestion using rankings ranging from A to F. Freeway LOS is based on the number of cars per hour per lane mile, with LOS A exhibiting free-flow traffic and LOS F exhibiting severe congestion that approaches gridlock.

⁶ ATRI American Transportation Research Institute. (2018, January 2019). Top Truck Bottlenecks – 2018. Retrieved from [atri-online.org: https://truckingresearch.org/wp-content/uploads/2019/02/bn018-2019.pdf](https://truckingresearch.org/wp-content/uploads/2019/02/bn018-2019.pdf).

Figure 1-3: Levels of Service in Freeway Traffic



Travel demand in the corridor was modeled using “Select Link Analysis” as part of the current study. This analysis determined the destination of trips from strategically selected locations. The model was also applied to help forecast the anticipated diversion routes that would be used by people avoiding work zones during future construction along I-94. The Select Link Analysis indicates that 17% of the eastbound I-94 trips and 19% of westbound trips are local traffic with both their origin and destination within the corridor, while 26% of both eastbound and westbound traffic are through-trips having no destination within the corridor.

1.4.4. Safety

A crash analysis conducted for the Project found that four intersections at Project area ramp terminals experienced more than 30 crashes over the study's five-year period. Along the mainline, 5.5% of all crashes were either fatal or had injuries. Another 18% of the mainline crashes had possible injuries. See **Table 1-1** for a breakdown by year where between 2011 and 2015, 4,247 incidents occurred along the I-94 mainline within the Project limits. Crashes are highest near the M-10 and I-75 system interchanges (as expected given the high traffic volume at those locations) and at the Mt. Elliott Street interchange.

Table 1-1: Existing Crash Severity by Year

Crash Type	2011	2012	2013	2014	2015	Total
Fatal	1	1	3	3	4	12
Serious injury	6	17	14	5	13	55
Minor injury	35	37	30	34	34	170
Possible injury	205	167	126	140	149	787
No injury	635	544	620	663	761	3,223
TOTAL Crashes	882	766	793	845	961	4,247

Source: Transportation Improvement Association (TIA)

Using the statewide crash rates, it was found that all segments of the I-94 mainline within the Project limits have higher crash rates than the statewide average per hundred million vehicle miles traveled. Several segments have rates double or triple or more than the statewide average. These high crash rates are a symptom of traffic congestion, which may be reduced with upgrades in the design of these intersections. The outdated design and physical condition of I-94 discussed in **Section 1.4.1** also contribute to increased crash rates.

1.4.5. Multimodal Transportation

Multimodal transportation refers to various modes of transportation (walking, biking, personal electric vehicles, motor vehicles, rail, and transit). MDOT's Long Range Transportation Plan goals seek to provide choices for users so they can select the mode that provides the best service time, least cost, and highest reliability.⁷

The U.S. Census Bureau reports that in the Project area many people are using alternative modes of travel. Of people over the age of 16 that work, 9.6% use public transportation, 12.7% walk, and 6.1% use other means. A large percentage of workers have no vehicles available to them (18.6%) (see the *Project Demographic Study Area Data Analysis* in **Appendix C**). This percentage compares to 2.8% in the state of Michigan.⁸ This means that a substantial number of people in the Project corridor depend on modes of travel other than personal vehicles.

⁷ Michigan State Transportation Commission. (2016). MI Transportation Plan Moving Michigan Forward 2040 State Long-Range Transportation Plan. Lansing: Michigan Department of Transportation.

⁸ US Census, 2012-2016 ACS, Table: DP03 Selected Economic Characteristics. (2018, 01). US Census. Retrieved from US Census 2012-2016 ACS, Table: DP03 Selected Economic Characteristics.

1.4. Need for Project

Local streets and service drives along this section of I-94 lack continuity, restricting mobility not only for motorists but also pedestrians, bicyclists, and transit users. Pedestrian and bicycle accommodations are inadequate and often non-compliant with current Public Rights-of-Way Access guidelines, compromising the safety of the users.⁹ Therefore, improved access to transit and nonmotorized facilities is needed along this section of I-94 to improve the safety and mobility of pedestrians, bicyclists and transit users.

The following local and regional policies and plans support the need for multimodal transportation improvements.

- The city of Detroit’s vision for “20-minute neighborhoods” seeks to add protected bike lanes to city streets to increase modes of transportation.
- Detroit Greenways Coalition has sought to implement Complete Streets policies to make communities safer and more livable and increase transportation choices for all residents.
- The transportation and mobility policies of the *City of Detroit Master Plan* and the *City of Detroit Strategic Plan for Transportation* also seek to support multiple modes of transportation, including greenways, traffic calming, sidewalks, and bike paths.^{10, 11}
- The Regional Transit Authority of Southeast Michigan’s *Connect Southeast Michigan* is the current regional transit master plan update. The plan provides a framework for coordinated transit service improvements in the region.¹² The plan recommends four bus rapid transit lines, a regional rail line between Ann Arbor and Detroit, a series of cross county connectors, several commuter express lines and local bus line extensions. Several of the plan’s recommendations interface with the I-94 Project corridor including a proposed airport express route along I-94, a proposed bus rapid transit route along Woodward Avenue and a commuter express route that would link downtown Detroit with Pontiac, Michigan.

1.4.6. Economic Growth

I-94’s condition and capacity affect the economic efficiency and the well-being of the economy. The Detroit Economic Growth Corporation cites Detroit’s easy access to strategic transportation, specifically interstate system access, as a reason why Detroit is ideally situated for companies to locate in the city.¹³ A modernized I-94, with adequate capacity and an improved visual image, can contribute to a positive economic climate that will encourage further economic investment.

Major new developments are in the works in the surrounding areas including job generators such as the Flex-N-Gate Detroit industrial manufacturing facility in the Mt. Elliott corridor, and LINC Logistics Center and ArcelorMittal’s Detroit manufacturing plant at the I-94 Industrial Park. Many other high-profile developments are occurring in other

⁹ U.S. Access Board. (2018, 04 11). Guidance and Research. Retrieved from United States Access Board: <https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/guidance-and-research>.

¹⁰ Detroit City Council. (2018, March 23). City of Detroit Master Plan. Retrieved from City of Detroit: <http://www.detroitmi.gov/Portals/0/docs/Planning/Master%20Plan%20Text.pdf?ver=2017-07-11-095829-547>.

¹¹ City of Detroit and Bloomberg Associates. (September 2018). City of Detroit Strategic Plan for Transportation. Detroit: City of Detroit.

¹² RTA, Regional Transit Authority of Southeast Michigan. (July 2018). Draft Connect Southeast Michigan Framework Summary. Retrieved from http://www.rtamichigan.org/wp-content/uploads/CSM_FrameworkSumm_2018_08_15_v1.pdf.

¹³ Detroit Economic Growth Corporation. (2018, January 12). Why Detroit / Transportation Infrastructure. Retrieved from DEGC: www.degc.org.

locations across the city, especially in the Midtown, New Center, and TechTown neighborhoods where there are numerous new, developing and proposed mixed-use developments, apartments, condominiums, and retail and restaurant projects. There is a demonstrated interest in redevelopment, more than infill. A list of past, present, and future projects is included in **Table 4-13**.

It is a goal of the *City of Detroit Master Plan* to increase mobility throughout the region as a way to connect residents to each other, employment, retail centers, and other services.¹⁴ It is also a stated goal to provide and maintain sufficient infrastructure to support multiple modes of transportation, including greenways, sidewalks and bike paths. Community development is also gaining attention in the city with several different collaborative projects and programs such as Urbane Development. Tax incentives including the *Central City Renaissance Zone* and the *Detroit Brownfield Redevelopment Authority* have been established to promote revitalization of distressed and blighted areas along I-94.

In addition to local economic growth, I-94 serves growing border-crossing traffic at the Detroit/Windsor Tunnel, the Ambassador Bridge, the Blue Water Bridge and the planned Gordie Howe International Bridge. US-Canada border crossings for trucks have risen by 10% since 2009, after having suffered a 24% decrease during the financial crisis of 2008.¹⁵ According to an economic analysis of Southeast Michigan's freight, I-94 within the I-94 Project limits moved about 10,300 trucks a day. In 2009, statistics showed that the corridor carried over 20.5 million tons with a value of \$28.7 billion. These freight flows demonstrate a high level of corridor use and its importance to the economy.¹⁶ The traffic issues discussed in **Section 1.4.3** can negatively affect commerce when delivery of goods is delayed.

1.4.7. Connectivity and Mobility

I-94 is a major transportation facility in Detroit that provides access to residential, commercial, and industrial neighborhoods. The Project is a priority because of its vital role in freight and passenger networks in Southeast Michigan. I-94, as part of the Dwight D. Eisenhower Interstate System, has the highest functional classification of all public roads in Michigan. The roadways of the Eisenhower Interstate System are important to the nation's economy, defense, and mobility. The Federal-Aid Highway Act of 1944 called for this designation of interstate highway to be "*so located, as to connect by routes, direct as practical, the principal metropolitan areas, cities, and industrial centers, to serve the National Defense, and to connect at suitable points, routes of continental importance in the Dominion of Canada and the Republic of Mexico.*"

In metro Detroit, I-94 provides continuous travel through seamless links between multiple highways, connecting to international border crossings, other freeways, state highways, and local streets. Within the I-94 Project corridor, I-94 (Edsel Ford Freeway) intersects with I-96 (Jeffries Freeway), I-75 (Chrysler Freeway), M-10 (Aretha L. Franklin Memorial Freeway/Lodge Freeway), M-53 (Van Dyke Avenue), and M-3 (Gratiot Avenue).

With numerous routes depending on I-94 to provide links to other routes, its condition and capacity have considerable impact beyond its own limits. If congestion or repairs to an aging facility prevent drivers from using I-94 to make their connections and continue their travel, they will seek other routes through the local street network or

¹⁴ Detroit City Council. (2018, March 23).

¹⁵ U.S. DOT Bureau of Transportation Statistics. (2018, January 17). Border Crossing/Entry Data. Retrieved from [www.bts.gov: https://www.bts.gov/content/border-crossingentry-data](https://www.bts.gov/content/border-crossingentry-data).

¹⁶ SEMCOG. (July 2012). Southeast Michigan Freight and Economic Analysis. Southeast Michigan Council of Governments. Retrieved from <http://semcog.org/Freight#4006412-freight-planning>.

1.5. Project Goals and Objectives

secondary connections. The use of other routes will result in circuitous travel, loss of time, and impacts to neighborhoods as traffic crosses through them.

By improving the connections to I-75, I-96, and M-10, mobility for commuters from Wayne, Oakland, and Macomb Counties will be improved. Directly and through its connections to I-96, I-75, and M-10, the I-94 Project segment provides access to major traffic generators including Wayne State University, the Detroit Medical Center Complex, the New Center area, the General Motors Cadillac Plant, the Cultural District, professional sports stadiums and Detroit's central business district. The connections provided by I-94 to other routes, international border crossings, the interstate system, and businesses contribute to the success and well-being of the traffic generators mentioned above and affect the economy in southeast Michigan and beyond.

Neighborhood connectivity over I-94 and along the service drives needs improvement. Currently, the connecting streets and the service drives along I-94 lack continuity along the corridor, making them ineffective as bus routes. Also, the service drives, being one-way streets, do not facilitate or promote the use of the local road system for local traffic circulation.

I-94 and its associated bridges, interchanges and service drives are compatible with local planning and development goals directed at increasing connectivity and multimodal facilities. Several local policies and goals support these ideas as ways to improve the environment and quality of life for residents. Examples of these plans and policies include the goal of the Detroit Housing and Revitalization Department to invest in public facilities and infrastructure (including streetscapes) that support neighborhood development.

1.5. Project Goals and Objectives

Michigan's state long-range transportation plan (SLRP) was adopted in 2016.¹⁷ The Project is considered an investment in the existing Interstate Highway system that will promote the SLRP's goals of safety, efficiency, multimodalism, and resilience to serve as the foundation of the state's economic vitality, which in turn supports its residents' quality of life.

The Project's purpose is compatible with the state's established goals as set forth in the SLRP, which identifies I-94 as one of the state's "corridors of highest significance" on which the state will focus improvements and investments. As stated in the SLRP, these improvements strengthen the people, businesses, and industries dependent on I-94, consequently strengthening Michigan's economic competitiveness. The Project is also included in the state's *2019-2023 Five-Year Transportation Program*.¹⁸ This Program identifies specific transportation projects planned for improvements in the five-year period.

In the officially adopted regional plans (*2040 Regional Transportation Plan for Southeast Michigan* (RTP)), improvements to the section of I-94 between I-96 and Conner Avenue is listed as a critical need.¹⁹ The Project is also

¹⁷ Michigan State Transportation Commission. (2016). MI Transportation Plan Moving Michigan Forward 2040 State Long-Range Transportation Plan. Lansing: Michigan Department of Transportation.

¹⁸ Michigan Department of Transportation. (2018). 2019-2023 Five-Year Transportation Program. Lansing: Michigan Department of Transportation.

¹⁹ SEMCOG. (June 2013 (Revised May 3, 2018)). 2040 Regional Transportation Plan for Southeast Michigan. Detroit: SEMCOG.

1.6. Purpose and Need Summary

listed in the *2017-2020 Transportation Improvement Program (TIP)*, (TIP project #136, 137, 139, 145, 146, 147, 148, 149, 151, 242, 243, 244, 245, 246, and 313) for Southeast Michigan.²⁰

1.6. Purpose and Need Summary

I-94 is an important link in the local, regional, and international transportation system. The freeway links to major international border crossings and is a gateway to the city of Detroit. It serves major traffic-generators and has a vital role in freight and passenger networks. This infrastructure is important to the economy because it moves goods to and from local, regional, statewide, Interstate, and international markets.

I-94 improvements need to address the following:

- Update infrastructure to bring it to current standards
- Address poor condition of pavement and bridges
- Address existing traffic congestion and provide for future travel demand
- Connect important routes in an effective and efficient manner
- Improve safety
- Provide improvements that support multimodal transportation
- Contribute to an improving economic climate in Detroit
- Improve neighborhood connectivity across I-94 and along service drives to facilitate the use of the local road system for local traffic circulation

²⁰ SEMCOG. (July 2016). FY 2017-2020 Transportation Improvement Program (TIP) for Southeast Michigan. Detroit, Michigan: Southeast Michigan Council of Governments.

2. PROJECT PLANNING PROCESS

2.1. Environmental Review History

In December 2004, the Federal Highway Administration (FHWA) approved a Final Environmental Impact Statement (2004 FEIS) for the rehabilitation of I-94 (Project). A Record of Decision was subsequently filed in 2005 (2005 ROD) that allowed the Michigan Department of Transportation (MDOT) to move forward with final design and construction activities. In summer 2015, MDOT hosted public open houses in Detroit at which public and agency feedback focused primarily on local neighborhood connectivity. MDOT modified the 2005 ROD's Approved Selected Alternative (ASA) – called the ASA with Modifications, or ASAM – to increase connectivity without expanding the footprint of the freeway design.

MDOT presented the ASAM to the public in fall 2016 at a second round of MDOT-hosted open houses in Detroit. Throughout 2017 and 2018, MDOT refined the ASAM design to address various needs of the community, reduce environmental impacts, and increase safety in the design. A Notice of Intent (NOI) to prepare this SEIS for the Project was published in the *Federal Register* on July 7, 2017.

There are parts of the ASA that MDOT and the FHWA advanced to final design, right-of-way acquisition, and construction to address immediate condition needs. These advanced projects were determined to have independent utility from the design modifications in the ASAM and were advanced to final design following a re-evaluation of the 2004 FEIS. Each FEIS re-evaluation documented that the analysis in the 2004 FEIS remains valid.

Table 2-1 lists the various environmental review documents that have been issued on the Project in compliance with the National Environmental Policy Act (NEPA).



What are 'ASA' and 'ASAM'?

The “Approved Selected Alternative” or **ASA** is the selected alternative described in the Project’s 2005 ROD, which affirmed the 2004 FEIS recommended alternative.

The “Approved Selected Alternative with Modifications” or **ASAM** is a proposed modification to the ASA. MDOT has not yet approved or selected the ASAM, but it is the preferred alternative evaluated in this DSEIS.

After a formal public and agency review period and public hearing on the SDEIS, MDOT and FHWA will identify a selected alternative in the Combined FSEIS and ROD.

Table 2-1: I-94 Detroit Modernization Project National Environmental Policy Act History

Document	Date
2001 Draft Environmental Impact Statement (2001 DEIS)	January 2001
Re-evaluation of 2001 DEIS due to three-year time lapse between DEIS and FEIS	November 2004
2004 FEIS	Dec. 2004
2005 ROD	Dec. 2005
Re-evaluation of 2004 FEIS for the Van Dyke bridge over I-94	Aug. 14, 2012
Re-evaluation of 2004 FEIS for the Gratiot Avenue bridge over I-94	May 29, 2013
Re-evaluation of 2004 FEIS for the Woodward Avenue structure over I-94	Oct. 13, 2013
Re-evaluation of 2004 FEIS for right-of-way acquisition	Aug. 19, 2014
Re-evaluation of 2004 FEIS for replacement of Trumbull structure over I-94	March 31, 2015
Re-evaluation of 2004 FEIS for replacement of Gratiot structure over I-94	April 27, 2017
Re-evaluation of 2004 FEIS for replacement of Chene Street structure over I-94	April 27, 2017
Re-evaluation of 2004 FEIS for replacement of the Second Avenue structure over I-94	Sept. 11, 2017
Re-evaluation of 2004 FEIS for replacement of the Cass Avenue structure over I-94	Sept. 11, 2017
Re-evaluation of 2004 FEIS for replacement of the Brush Street structure over I-94	Sept. 11, 2017
Re-evaluation of 2004 FEIS for removal of three pedestrian structures over I-94	Sept. 11, 2017
Note to File regarding 2004 FEIS for removal of the Third Avenue bridge over I-94	March 28, 2018
Re-evaluation of 2004 FEIS for Concord Avenue bridge over I-94	April 2, 2018
Re-evaluation of 2004 FEIS for French Road bridge over I-94	April 2, 2018
Re-evaluation of 2004 FEIS for Mt. Elliott bridge over I-94	April 2, 2018
Categorical Exclusion for Active Traffic Management along I-94	May 17, 2018
Categorical Exclusion for Active Traffic Management along M-3 Gratiot Avenue and US 12 Michigan Avenue	Sept. 11, 2018
Re-evaluation of 2004 FEIS for Advanced Bridges – Phase 2 (seven structures):	Jan. 10, 2019
• E. Grand Boulevard bridge over I-94 • Milwaukee Avenue bridge over I-75 • Grand River Avenue bridge over I-94 • Burns Avenue bridge over I-94 • Frontenac Street bridge over I-94 • Conrail X01 and X02 bridges over I-94	
Re-evaluation of 2004 FEIS for replacement of the Cadillac Avenue Bridge	June 3, 2019

Source: MDOT Administrative Record for I-94 Modernization Project

2.2. Public Participation Program

This section summarizes the public participation program. A detailed account of completed and planned public outreach activities is included in **Chapter 7**.

2.2.1. 2001 DEIS and 2004 FEIS Public Participation: 1994-2005

The Project's public participation and agency coordination process for the 2001 DEIS began in December 1994. The 2001 DEIS (Section 3.2 and Chapter 8) and the 2004 FEIS (Chapter 8) provided details on specific outreach efforts, which included public meetings for citizens, special interest groups, and stakeholders representing businesses, institutions, neighborhoods, and community service groups. Citizen surveys were conducted and opportunities to provide public comments were available and advertised by the distribution of meeting notices and flyers, via email and a Project website.

For the 2004 FEIS, a Citizen Advisory Committee was formed to inform and shape the alternatives. Eight public information meetings were held prior to publication of the 2001 DEIS and four meetings after publication. The feedback from these meetings was used to develop the preferred alternative. Approximately 100 meetings were held to reach local groups and gather their input to be applied to the selection of the preferred alternative.

2.2.2. Post-2005 Record of Decision Public Participation

As part of the Draft SEIS review process, MDOT developed and implemented a public participation plan: the *Communications Work Plan* (see **Appendix A**). A major focus of the plan is to reach out to stakeholders in neighborhoods throughout the Project area, including those in typically underrepresented areas or those for whom participation would be difficult. The *Communications Work Plan* calls for engaging stakeholders, community members and community leaders. Specific outreach efforts include educating members of the Project's Local Advisory Committee (LAC) and Government Advisory Committee (GAC) (see **Section 7.1.4**) and working with them to identify community outreach opportunities; using all forms of traditional and social media to share information with the public; and identifying ways to effectively engage minority and low-income populations. The Project has a dedicated website and an active Facebook page and Twitter feed. There is also an I-94 Project Office in downtown Detroit that is open to the public.



Local and Government Advisory Committees' (LAC and GAC) Objectives

- Enhance stakeholder engagement to improve Project outcomes
- Communicate information about the Project to the affected groups and individuals
- Relay local ideas, issues, and concerns back to MDOT planners and designers
- Represent citizens, neighborhoods, business groups, institutions, local government staff and elected officials

Public controversy and concern expressed by the Mayor of Detroit prompted MDOT to take another look at ways to address the concerns.^{21,22} In the summer of 2015, MDOT hosted open houses in Detroit where feedback gathered from the public focused primarily on local neighborhood connectivity within the corridor. MDOT requested assistance from members of the city of Detroit Planning and Development Department to develop local connectivity concepts over the freeway. The assistance included hosting neighborhood mobility and visioning workshops. The results of the workshops led the Project team to make modifications to the ASA from the 2004 FEIS. These modifications were presented to the public in the fall of 2016 at a second round of MDOT-hosted open houses in Detroit. Public meeting summaries are included in **Appendix A**.

Other key engagement has included “Resident Roundtable” discussions and participation in locally run community outreach events. Individual meetings were held with environmental groups, neighborhood groups, businesses, and other stakeholders. The Project team maintains frequent contact with local community leaders and organizations to help share information, get feedback on Project design, and identify and mitigate potential Project impacts.

In November 2018, four open-house-style public meetings were held to update the public on the Project status and to afford the public an opportunity to review and comment on the effects of the Project on the protected activities, features, and attributes of the Section 4(f) resources, which included parks, historic properties and the Iron Belle Trail. See **Section 5.6** of this document, which discusses the Section 4(f) related coordination efforts.

2.3. Process for Selecting Alternatives for Further Evaluation

2.3.1. Original Alternatives (2004)

Alternatives were addressed in Chapter 4 of the 2001 DEIS and 2004 FEIS. The alternatives were evaluated to determine which would best address the purpose and need of the Project. Section 4.4 of the 2004 FEIS describes the 2005 ROD’s Selected Alternative, which is now called the ASA.

2.3.2. Modifications Currently Under Review

After the 2005 ROD, various stakeholders and individuals commented about the need to improve local connectivity and to minimize relocations. In response to stakeholder input, MDOT modified the ASA. The modifications required additional studies to evaluate and update other environmental impacts, as well as measures to avoid, minimize and mitigate impacts. The design modifications focused on a few key locations along the corridor where refinements could be made to reduce the Project impacts while still meeting the purpose and need for the Project and design standards.

Based on updated data and input gathered from stakeholders and agencies, the design modifications to the ASA focus on:

- Better use of existing city streets as local connections instead of building new, continuous service drives adjacent to the freeway as was proposed in the ASA
- Maintaining existing bridge connections over the freeway and consider new bridge connections where feasible to improve neighborhood connectivity
- Modifying local access ramps to and from I-94, M-10, and I-75 to improve operations and safety

²¹ Felton, Ryan. *A highway runs through it*. Detroit Metro Times. Retrieved online May 30, 2019. <https://www.metrotimes.com/detroit/a-highway-runs-through-it/Content?oid=2145450>.

²² <https://twitter.com/sarahforpdx/status/877581133407428608>

2.4. Consistency with Regional Planning

- Utilizing a “Complete Streets” planning approach in the design of bridges and service drives to address multi-modal needs.
- Reduce the overall Project footprint to avoid and minimize impacts

See **Section 3.1.4**, Approved Selected Alternative with Modifications, for the complete design modifications to the ASA.

2.4. Consistency with Regional Planning

The selection of transportation projects such as the Project begins with state and regional level transportation planning. MDOT closely coordinates with the Southeast Michigan Council of Governments (SEMCOG) on regional transportation planning and statewide plans. SEMCOG’s regional transportation plan (RTP) addresses the transportation needs of the region and prioritizes projects.²³ The Federal-Aid Highway Act (as amended) requires RTPs for urban areas with a population over 50,000. RTPs are reviewed and updated at least every four years.

As part of the current RTP process, SEMCOG considered multiple regional plan scenarios that consider all forms of transportation and land use planning and travel demand measures in conjunction with highway projects to maintain or increase highway capacity as needed. The Project is included in the Fiscal Year (FY) 2017-2020 Transportation Improvement Program (TIP) for Southeast Michigan²⁴ (TIP project No. s 136, 137, 139, 145, 146, 147, 148, 149, 151, 242, 243, 244, 245, 246, and 313).

2.5. Other Projects

In Michigan, transportation planning is approached comprehensively and considers the interconnectedness of adjacent and nearby projects. A complete list of transportation projects scheduled for construction in the Detroit metropolitan area is maintained by SEMCOG in the TIP.²⁵ The TIP includes all types of transportation projects from traffic signal upgrades, transit projects, resurfacing projects, trails, and sidewalk repairs to complete highway reconstruction projects. Bridges within the Project limits that have been replaced or that will be replaced prior to the I-94 Project are listed in **Table 2-2**.



What is ‘Section 4(f)’?

The Department of Transportation Act of 1966, referenced in this DSEIS as “Section 4(f)” stipulates that FHWA and other DOT agencies cannot approve the use of land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, or public and private historical sites unless there is no feasible and prudent avoidance alternative to the use of land. See **Table 11-2: Glossary** for a complete definition.

²³ SEMCOG. (June 2013 (Revised May 3, 2018)).

²⁴ SEMCOG. (July 2016).

²⁵ SEMCOG. (June 2013 (Revised May 3, 2018)).

Table 2-2: Advanced Bridges by Year of Construction

Location	Action	Actual or Anticipated Construction Year
Van Dyke Avenue	Replace	2013
Woodward Avenue	Replace	2016
Trumbull Avenue	Replace	2016
Chene Street	Replace	2018
Gratiot Avenue	Replace	2018
Helen Street	Remove	2018
Rohns Street	Remove	2018
Springfield Street	Remove	2018
Concord Avenue	Replace	2019
French Road	Replace	2019
Mt. Elliott Street	Replace	2020
Second Avenue	Replace	2020
Cass Avenue	Replace	2021
Brush Street	Replace	2019
Cadillac Avenue	Replace	2021
Grand River Avenue	Replace	2021
East Grand Boulevard	Replace	2020
Frontenac Avenue	Replace	2021
Burns Avenue	Replace	2021
East Milwaukee Avenue over I-75	Replace	2020
Conrail Railroad	Replace	2022
Conrail Railroad	Replace	2022

3. ALTERNATIVES

This chapter supplements the detailed information and analyses for the broad range of alternatives that were considered in Chapter 4 of the 2004 Final Environmental Impact Statement (2004 FEIS). Following the issuance of a Record of Decision in 2005 (2005 ROD), additional outreach and agency coordination resulted in modifications to the Approved Selected Alternative (ASA). This supplemental alternative evaluation documents the evaluation and selection of proposed design modification to the ASA, called the ASAM.

The Federal Highway Administration (FHWA) requires (Title 23 CFR, Section 771.105) evaluating alternative courses of action and making decisions in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of the social, economic, and environmental impacts of the proposed transportation improvement; and of national, state, and local environmental protection goals. FHWA and the Michigan Department of Transportation (MDOT) are required to objectively explore a range of reasonable alternatives, including the alternative of taking no action (the No-Build Alternative). The alternatives analysis from the 2004 FEIS, as well as the supplemental evaluation and selection of proposed design modifications to the ASA were completed following this policy.

Final design, right-of-way acquisition, and construction of the selected alternative would proceed only after FHWA considers comments received during the Draft Supplemental Environmental Impact Statement (DSEIS) 45-day comment period. The selected alternative would be announced in the I-94 Detroit Modernization Project (Project) Combined Final Supplemental Environmental Impact Statement and Record of Decision (Combined FSEIS and ROD) to be published after circulation of the DSEIS. Several elements of the ASA that are compatible with the ASAM and demonstrate independent utility have been or will be implemented separately in advanced phases of the Project (see **Section 2.1**). The purpose of advancing these elements is to address immediate condition needs of the infrastructure.



What are 'ASA' and 'ASAM'?

The “Approved Selected Alternative” or **ASA** is the selected alternative described in the Project’s 2005 ROD, which affirmed the 2004 FEIS recommended alternative.

The “Approved Selected Alternative with Modifications” or **ASAM** is a proposed modification to the ASA. MDOT has not yet approved or selected the ASAM, but it is the preferred alternative evaluated in this DSEIS.

After a formal public and agency review period and public hearing on the SDEIS, MDOT and FHWA will identify a selected alternative in the Combined FSEIS and ROD.

3.1. Alternatives Considered

3.1.1. Alternatives Eliminated from Further Consideration

In 2004, practical alternatives for modernizing I-94 within the Project limits were developed, studied, and compared. These alternatives are described in detail in Chapter 4 of the 2004 FEIS. The alternatives analysis included comparisons of transportation performance, potential environmental and socioeconomic impacts, and input from agencies and the public.

3.1.2. 2005 Record of Decision – Approved Selected Alternative

MDOT and FHWA adopted and documented the ASA in the 2005 ROD (see Section 4.5 of the 2004 FEIS and Section 2.0 of the 2005 ROD for details). The 2001 DEIS Build Alternative with Modification 1 was chosen as the ASA based on engineering and planning criteria and updated information obtained during the preparation of the 2004 FEIS. The ASA contained four through-traffic lanes in each direction on I-94 and improved geometrics including redesigned M-10 and I-75 interchanges; adequate acceleration-deceleration lanes and auxiliary lanes. The median included a 14-foot inside shoulder, a 12-foot outside shoulder and a six- to ten-foot variable median strip with concrete barriers. The ASA included changes to the service drives along I-94 to create a typical section with two 11-foot travel lanes and an eight-foot shoulder in each direction, except between M-10 and I-75 on the south side of I-94 where three lanes would be provided, see **Figure 3-1**.

Following the 2005 ROD, the 2010 *I-94 Rehabilitation Detailed Engineering Report* (Engineering Report) was developed, which documents detailed engineering activities performed to refine the recommended alternative from the 2005 ROD.²⁶ The Engineering Report includes:

- Recommendations from a 2004 Value Engineering Study²⁷
- Pedestrian and Americans with Disabilities Act (ADA) facilities on service and local roads
- Efforts to better comply with current design standards
- Analysis and maintenance of traffic challenges and approaches
- Efforts to reduce the number and extent of design exceptions

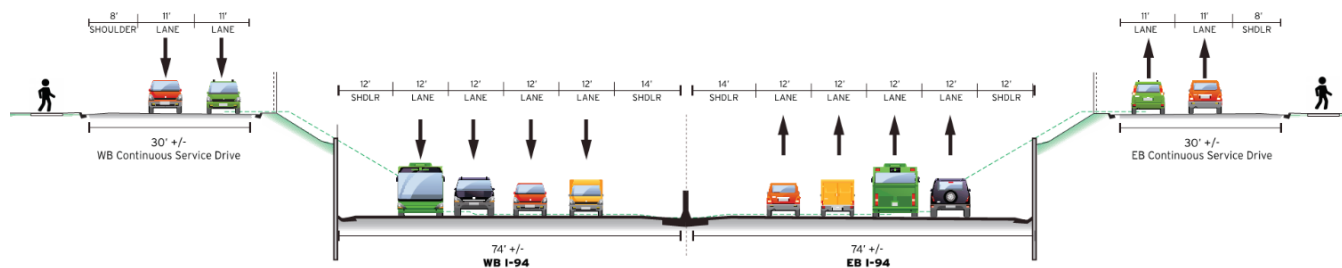
The resulting engineering efforts refined the ASA to address the listed items and can be viewed in **Appendix I** (Conceptual “Base” Plan) of the Engineering Report.

²⁶ Michigan Department of Transportation. (2010, June).

²⁷ Michigan Department of Transportation. (2004). Final Value Engineering Report Early Preliminary Engineering (EPE) Study I-94 Reconstruction From I-96 to Conner Avenue. Michigan Department of Transportation.

3.1. Alternatives Considered

Figure 3-1: Approved Selected Alternative Cross-Section

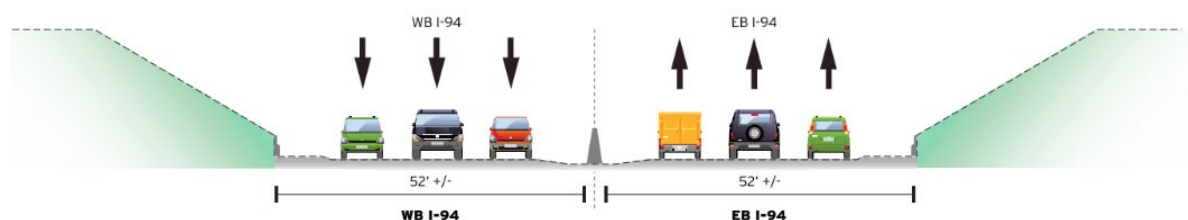


3.1.3. No-Build Alternative

The DSEIS carries over the determinations made on the No-Build alternatives discussed in Chapter 4 of the 2001 DEIS and 2004 FEIS. The No-Build Alternative would maintain I-94 between I-96 and Conner Avenue in its existing configuration, alignments, and location. Bridges and pavement would be replaced as they become critical, see **Figure 3-2**. The Enhanced No-Build Alternative would maintain I-94 in its existing configuration, alignment, and location, but would not increase capacity. This alternative addresses the physical condition of the facility, but not the geometric or safety deficiencies. The Project's 2005 ROD found that while the No-Build and Enhanced No-Build alternatives would result in less negative environmental consequences than the Build Alternatives, they do not satisfy the "Purpose and Need" of the Project.

While the No-Build Alternative does not meet the Project's purpose and need, it was retained for comparison purposes in the impact assessment in **Chapter 1**.

Figure 3-2: Existing Cross-Section



3.1.4. Approved Selected Alternative with Modifications

This section discusses the development and selection of proposed design modifications to the ASA. Following the 2005 ROD, MDOT evaluated various design modifications to the ASA to address stakeholder concerns and opposition regarding Project impacts and local connectivity. The focus of stakeholder concern and opposition was centered around the need to construct continuous service drives, the impacts of constructing new continuous service drives, and improving local connectivity for neighborhoods adjacent to, and across, the I-94 corridor for all users. The proposed improvements to mainline I-94, as identified in the ASA, remain the same except for locations impacted by the local connectivity modifications.

MDOT evaluated a range of modification options considering how well they address the purpose and need, impacts and benefits to the human and natural environment, and stakeholder comments. The range of modification options are described in detail in **Appendix L** and the selected modification options that make up the ASAM are described in **Table 3-1**. See also **Figure 3-3**.

Figure 3-3: Approved Selected Alternative with Modifications Cross-Section

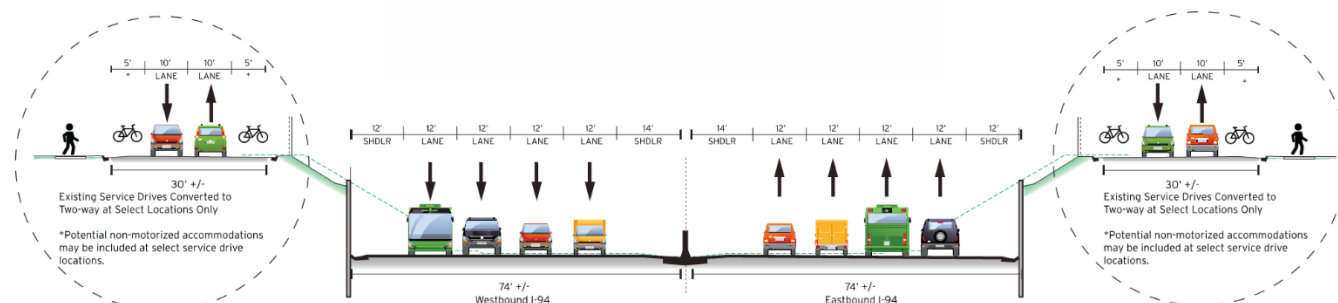


Table 3-1: Design Modification Options to the Approved Selected Alternative

Option	Option Description	Notes
A	S.T. Gilbert Terminal (5600 Wabash St.) Avoidance Option	The Approved Selected Alternative impacted the S.T. Gilbert Terminal, which was identified as an historic resource. As such, an avoidance option was evaluated.
2	Reduce the Service Drive width and realign I-94 to the south. Reinstate access from Wabash Street to the westbound Service Drive. Access from Wabash Street to the eastbound Service Drive removed.	The reduction in the Service Drive width and realignment of I-94 to the south. In addition, connectivity between Wabash Street and the westbound Service Drive is proposed to be reinstated. This option therefore avoids adverse impacts to the S.T. Gilbert Terminal, which was identified as a Section 106 (historic) resource.
B	Local Connectivity between Holden Avenue and Trumbull Avenue in the northwest quadrant of the I-94/M-10 Interchange	
2	Match existing local roadway configuration and do not connect the service drive between Holden Avenue and Trumbull Avenue.	This option is supported by local stakeholders as it minimizes property impacts and meets traffic operational needs. Local traffic will utilize existing Elijah McCoy Drive for access between Holden Avenue and Trumbull Avenue similar to existing conditions.
C	I-94/Brush Street Interchange and New Center Local Connectivity	A potential historic district exists along the south side of Hendrie Street between John R Street and Brush Street. The State Historic Preservation Office (SHPO) has reviewed the proposed options in terms of potential impacts to the historic district.

3.1. Alternatives Considered

Option	Option Description	Notes
5	This option proposes reconnecting Hastings Street from Ferry Street to Harper Avenue with a new bridge crossing over I-94. In addition, Hendrie Street is proposed to be extended to the new Hastings Street extension and converted to two-way traffic flow. These design changes reestablish the existing city grid roadway network improving local connectivity. To meet FHWA interstate access requirements, the freeway entrance and exit ramps need to be connected to same roadway. Therefore, this option proposes a one-way eastbound Service Drive that connects the eastbound I-94 exit and entrance ramps and parallels Hendrie Street to the north.	Meets the goals of the city of Detroit by reconnecting the city grid roadway network with the Hendrie Street and Hasting Street extensions. This option also meets traffic operational needs and meets FHWA interstate access requirements. This is also the preferred option of the SHPO as it closely matches the existing roadway configuration adjacent to the Hendrie Street Historic District.
D	General Motors (GM) Area Options (Chene to Mt. Elliott)	
3	Continuous Two-Way Harper Avenue Extension. Construct a two-way Harper Avenue extension from Mt. Elliott Street to St. Aubin Street (the section between E. Grand Boulevard and St. Aubin may be designated as E. Grand Boulevard); eliminate E. Grand Boulevard curves and redesign as a grid street which allows a continuous two-way Harper Avenue extension; maintain full-access interchange at Mt. Elliott Street; maintain partial-access interchange at Chene Street; provide new bridge connecting Lucky Place/Moran Street.	Provides a two-way Harper Avenue extension that reconnects Harper Avenue from the eastside of Detroit to New Center/Midtown. This new connection provides an alternate route for local traffic and new potential transit routes to access the job centers, cultural districts, educational institutions, and other destinations in the New Center/Midtown area. This option also addresses operational needs of local manufacturing businesses minimizing adverse travel to access I-94. This option proposes an improved environment for nonmotorized users by reducing roadway footprint and simplifying intersection crossings at the E. Grand Bridge Boulevard bridge over I-94 and at the St. Aubin Street intersection with E. Grand Boulevard/Harper Avenue.
E	Helen Street Pedestrian Bridge	
2	Construct a "Complete Streets" roadway bridge at Helen Street with bike lanes, wide sidewalks, and narrow vehicular lanes.	Proposed "Complete Streets" bridge is a street level crossing that avoids property impacts, improves neighborhood connectivity for all users, reduces the distance for nonmotorized users to cross the freeway, and is supported by local stakeholders and the city of Detroit.
F	Townsend Street Pedestrian Bridge	
2	Construct a "Complete Streets" roadway bridge located at Sheridan Street, one block west of Townsend Street. The "Complete Streets" bridge is proposed to have bike lanes, wide sidewalks, and narrow vehicular lanes.	Proposed "Complete Streets" bridge is a street-level crossing that avoids property impacts, improves neighborhood connectivity for all users, reduces the distance for nonmotorized users to cross the freeway, and is supported by local stakeholders and the city of Detroit.

3.1. Alternatives Considered

Option	Option Description	Notes
G Seminole Street Pedestrian Bridge		
2	Construct a "Complete Streets" roadway bridge located at Iroquois Avenue, one block east of Seminole Street. The bridge is relocated east to meet current clearance requirements over the upgraded Van Dyke entrance and exit ramps. The "Complete Streets" bridge is proposed to have bike lanes, wide sidewalks, and narrow vehicular lanes.	Proposed "Complete Streets" bridge is a street-level crossing that avoids property impacts, improves neighborhood connectivity for all users, reduces the distance for nonmotorized users to cross the freeway, and is supported by local stakeholders and the city of Detroit.
H Rohns Street Pedestrian Bridge		
2	Construct a "Complete Streets" roadway bridge located at Rohns Street. The "Complete Streets" bridge is proposed to have bike lanes, wide sidewalks, and narrow vehicular lanes.	Proposed "Complete Streets" bridge is a street-level crossing that avoids property impacts, improves neighborhood connectivity for all users, reduces the distance for nonmotorized users to cross the freeway, and is supported by local stakeholders and the city of Detroit.
I Springfield Street Pedestrian Bridge		
2	Construct a "Complete Streets" roadway bridge located one block west at Lemay Street. The "Complete Streets" bridge is proposed to have bike lanes, wide sidewalks, and narrow vehicular lanes.	Proposed "Complete Streets" bridge is a street-level crossing that avoids property impacts, improves neighborhood connectivity for all users, reduces the distance for nonmotorized users need to travel to cross the freeway, and is supported by local stakeholders and the city of Detroit.
J Eastbound Service Drive (Burns Street to Gratiot Avenue)		
2	Convert existing eastbound Service Drive to two-way and construct new connections between Fischer Street and Crane Street, and between Rohns Street and Holcomb Avenue. Realign the new two-way Service Drive connections closer to I-94 to avoid residential impacts.	Support from local stakeholders and improves local connectivity.
K Gratiot Avenue Interchange Area		
4	This option reconfigures the I-94 interchange with Gratiot Avenue to provide a standard diamond interchange. Under this option the eastbound Service Drive would be separated from the Gratiot Avenue entrance and exit ramps and converted to two-way traffic flow. In addition, the westbound service drive would be separated from the westbound I-94 exit ramp and tie into Pennsylvania Street. The westbound I-94 entrance ramp would connect directly to Gratiot Avenue. The westbound Service Drive west of Gratiot Avenue would begin at Duncan Avenue.	Addresses vehicular operations with pedestrian access. The proposed "Complete Streets" bridge connection at Rohns Street provides additional connectivity across I-94 for all users, which mitigates some concern with the removal of the existing McClellan Street Bridge.
L Cadillac Avenue Bridge Over I-94		
1	2005 ROD-Approved Selected Alternative. Reinstate the Cadillac Avenue Bridge.	Support from local stakeholders and maintains an important bridge connection for a local bus route.

3.1. Alternatives Considered

Option	Option Description	Notes
M	Conner Avenue Interchange	The Conner Avenue interchange includes multiple environmental resources including the Iron Belle (Bike) Trail, multiple properties owned by the city of Detroit Parks & Recreation Department/General Services Division, Chandler Park, and potential cultural resources.
2	Diamond Interchange with separate shared-use path bridge for the Iron Belle (Bike) Trail. Eliminate Hern Street connection to Conner Avenue. Convert Gunston Avenue to two-way traffic flow between Hern Street and Conner Avenue.	Addresses stakeholder desires by meeting the traffic operational needs and separating nonmotorized traffic from vehicular traffic through the interchange via a separate nonmotorized bridge across I-94. This alternative minimizes potential impacts to city of Detroit Parks & Recreation Department/General Service Division properties.
N	I-94/M-10 System Interchange	
2	Lower M-10 such that I-94 passes over M-10. This alternative replaces the left-handed ramps with right-handed ramps allowing street-level bridge crossings at Holden Avenue and Merrick Street. Eliminates the continuous service drives through the interchange. Eliminates the Third Avenue Bridge over I-94 and the Brooklyn Street pedestrian bridge over I-94.	Allows street-level bridge crossings at Holden Avenue and Merrick Street, which improves local connectivity for all users and is supported by Project stakeholders and the city of Detroit.
O	Holden Avenue Pedestrian Bridge	
2	Create a new Holden Avenue connection across M-10 by constructing a new street-level "Complete Streets" bridge. This alternative is only compatible with the I-94/M-10 System Interchange alternative, N-2 (the selected alternative).	Supported by local stakeholders and the city of Detroit because it improves the crossing over the M-10 freeway for all users. This alternative also improves neighborhood connectivity and local traffic circulation.
P	Merrick Street Pedestrian Bridge	
2	Construct a street-level "Complete Streets" bridge over M-10 at Merrick Street. This alternative is only feasible with I-94/M-10 System Interchange alternative, N-2 (the selected alternative).	Minimizes the property impacts and reduces the distance for nonmotorized travelers to cross the freeway and is supported by Project stakeholders and the city of Detroit.
Q	M-10/Forest Avenue Interchange	
3	Construct a full access interchange and provide a new "Complete Streets" bridge crossing that will reconnect Calumet Street and Four Tops Street across M-10. This bridge would also include a separate U-turn lane for southbound to northbound traffic to serve the proposed southbound M-10 exit ramp to Forest Avenue. Traffic exiting southbound M-10 to access Forest Avenue will exit just south of the Forest Avenue bridge to the southbound Service Drive and utilize the U-turn lane on the proposed Calumet/Four Tops bridge and northbound Service Drive to access Forest Avenue. The southbound M-10 entrance ramp and northbound M-10 exit ramps are located just south of the Calumet/Four Tops bridge. The northbound M-10 entrance ramp is located just north of Forest Avenue.	Meets FHWA Interstate Access Requirements by retaining access across M-10 via the proposed "Complete Streets" bridge at Calumet Street/Four Tops Street, which provides access for all users.

3.1. Alternatives Considered

Option	Option Description	Notes
R	Selden Street Connection Over M-10	
2	Lower M-10 and construct a "Complete Streets" bridge at Selden Street over M-10.	Proposed "Complete Streets" bridge is a street-level crossing that avoids property impacts, improves neighborhood connectivity for all users, and is supported by local stakeholders and the city of Detroit.
S	I-94/I-75 System Interchange	
2	Reconstruct and modernize the existing I-94/I-75 interchange but eliminate continuous service drives through the interchange. Reconnect Harper Avenue from St. Aubin Avenue to the west across I-75.	Eliminates the continuous service drives and provides a new east-west connection across I-75 that reconnects Harper Avenue from the neighborhoods to the east to Medbury Park, Midtown/New Center/Tech Town. This new connection provides an alternate route for local traffic and for potential new transit routes to access the existing and growing job centers, cultural districts, educational institutions, and other destinations in the developing/redeveloping Midtown/New Center/TechTown neighborhoods.
T	Ferry Street Bridge Over I-75	
2	Maintain the Ferry Street bridge connection over I-75.	Improves neighborhood connectivity for all users and is supported by local stakeholders and the city of Detroit.
U	SB I-75 Warren Avenue Exit Ramp	
2	Maintain the SB I-75 Exit Ramp to Warren Avenue.	Maintains an important connection to access Midtown/New Center/TechTown and is supported by local stakeholders and the city of Detroit.

3.1.4.1. PEDESTRIAN BRIDGE TO COMPLETE STREETS BRIDGE MODIFICATIONS

MDOT developed the proposed Complete Streets bridge concept in place of the proposed pedestrian bridges through coordination with Project stakeholders. A Complete Streets bridge is defined as street-level bridge crossing over the freeway that is designed to accommodate vehicular, pedestrian, and bicycle traffic. The proposed Complete Streets bridge cross-section is designed to fit in the context of the residential neighborhood with narrow vehicular lanes to promote slower travel speeds as well as provide space for bicycle and pedestrian facilities. The Pedestrian Bridge has a narrower cross-section (see **Figure 3-4**).

Benefits of the Complete Streets Bridge concept include a more direct and shorter path, across the freeway, which improves mobility and connectivity between neighborhoods for pedestrians, bicyclists, people using other personal forms of transportation, such as scooters, and motorists. The Complete Streets minimize impacts to adjacent property as shown in **Figure 3-5** and **Figure 3-6**. The pedestrian bridges from the ASA were designed to bridge over the freeway and the continuous service drives and were not street-level crossings. The pedestrian bridges required long access ramps designed to meet the ADA design standards.

Figure 3-4: Conceptual Pedestrian and Complete Streets Bridge Cross-Sections

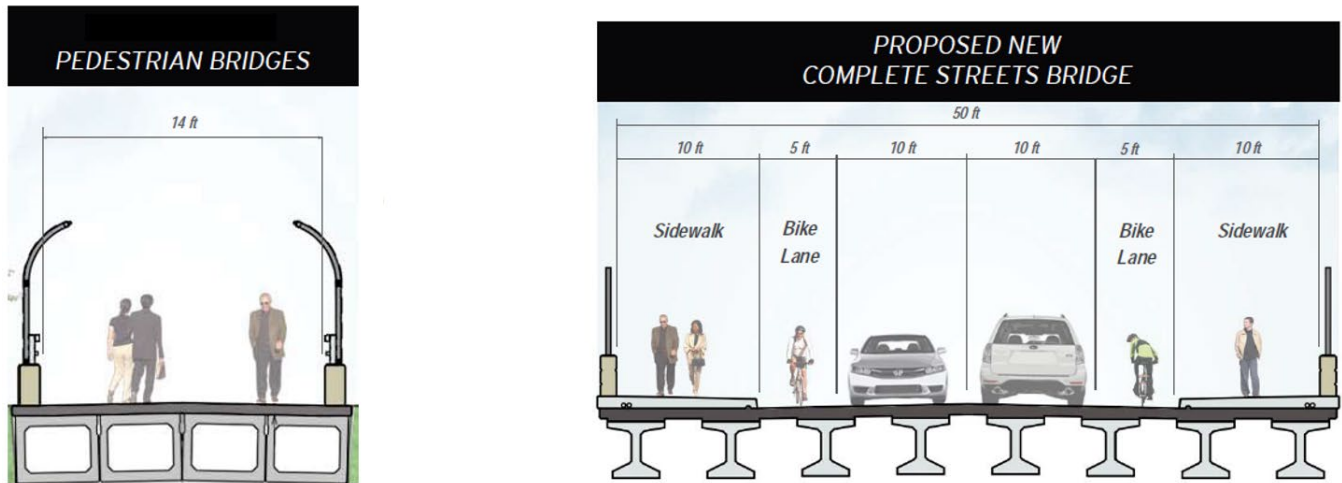
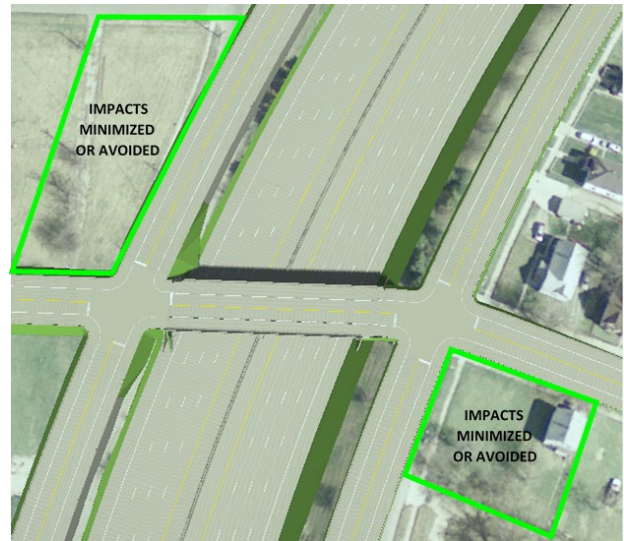


Figure 3-5: Pedestrian Bridge Concept



Figure 3-6: Complete Streets Bridge Concept



3.1.4.2. ELIMINATION OF CONTINUOUS SERVICE DRIVES MODIFICATION

The ASA included the construction of continuous service drives along the freeways (I-94, I-75, and M-10) within the Project limits. The continuous service drive design was developed to allow non-freeway traffic to travel from one end of the corridor to the other, even at the M-10 and I-75 interchanges. In addition, the continuous service drive concept was envisioned to accommodate potential future transit routes. The construction of the continuous service drives proposed in the ASA required substantial property impacts including residential and business relocations. This design was also the center of stakeholder concern and opposition during development of the 2001 DEIS and 2004 FEIS as well as after the publication of the 2005 ROD. Comments from local stakeholders expressed the desire to design roadways traveling through residential neighborhoods to promote slower travel speeds, accommodate all users, and fit more in the context of the neighborhood environment.

Through coordination with the city of Detroit, residents, and other Project stakeholders, MDOT evaluated modifications to the continuous service drive design to reduce impacts and provide improved local connectivity adjacent to and across the freeway. The modifications selected in **Table 3-1** would retain the existing service drive network, converting some sections from one-way to two-way traffic flow, and retain select connections identified in the 2004 FEIS that minimize impacts and enhance local connectivity. The service drive locations proposed to be converted to two-way traffic will provide improved neighborhood connectivity.

Transit Considerations

Existing and planned transit services within the corridor and region are compatible with the ASA and the proposed ASAM. The elimination of the continuous service drives will not affect transit services in the corridor as there are no existing or planned transit services for the continuous service drives proposed in the ASA due to the low population density and limited number of destinations along the service drives. Major transit agencies in the region, Detroit Department of Transportation (DDOT) and Suburban Mobility Authority for Regional Transportation (SMART), use existing I-94 as a primary corridor to get buses in the proper locations to begin revenue service.

Following the 2005 ROD, the Regional Transit Authority (RTA) of Southeast Michigan in 2016 approved a Regional Master Transit Plan.²⁸ This plan includes an Airport Express route that uses I-94, which connects Macomb County to the Detroit Metropolitan Wayne County Airport. The proposed capacity improvements associated with the ASA and ASAM will improve travel times for the existing and planned bus services utilizing the I-94 corridor.

The RTA plan also includes bus rapid transit (BRT) service along Woodward and Gratiot avenues. The proposed Woodward Avenue and Gratiot Avenue bridge connections over I-94 included as part of the ASAM are designed to accommodate the potential BRT service. In addition, Detroit completed a streetcar system (QLINE) that now operates along Woodward Avenue.

Harper Avenue Extension Modification

The proposed modification provides a two-way Harper Avenue extension from Mt. Elliott Street to Woodward Avenue. This extension reconnects the city grid pattern and provides a new east-west route along Harper Avenue for local traffic to get from the eastern Project limits into the New Center/Midtown area.

3.2. Preferred Alternative

The Preferred Alternative is the ASAM. The factors that influenced this decision were identified through an evaluation of impacts and benefits to the human and natural environment, as well as through an extensive public participation and agency coordination process conducted during the development of the 2004 FEIS and following the 2005 ROD. See **Chapter 7** (Public Participation and Agency Coordination).

The following subsections include a detailed summary of the ASAM and the conceptual plans (see also **Chapter 12**). **Figure 3-10**, **Figure 3-11**, and **Figure 3-12** illustrate the proposed modifications.

3.2.1. I-94, M-10 and I-75 Mainline Freeways

The ASAM, like the ASA, will include the addition of one driving lane in each direction, full-width shoulders (median and outside) along I-94, redesign of entrance and exit ramps to allow longer distances for vehicles to enter and exit

²⁸ RTA, Regional Transit Authority of Southeast Michigan. (August 2016, 04 11).

the freeway safely, and relocating and eliminating some ramps (see **Section 3.2.4**). Retaining walls will be constructed along the corridor to allow the proposed improvements to be constructed within the existing I-94 footprint (see **Figure 3-7** and **Figure 3-8**).

Figure 3-7: Existing Cross-Section



Figure 3-8: Approved Selected Alternative with Modifications Cross-Section



3.2.1.1. TRAFFIC ANALYSIS

The traffic analysis identified the impacts to traffic operations for the year 2040 forecasted volumes for both the No-Build alternative and the ASAM. Updated traffic volume data were used in conjunction with SEMCOG's forecasts to establish volume data representing year 2040 conditions. A microsimulation model was built and calibrated to represent the I-94 existing field conditions. That model was then used in combination with the year 2040 volumes to determine the levels of service of the No-Build alternative. In both the AM and PM peak hours, all segments in the peak direction of travel (westbound in AM, eastbound in PM) are expected to operate at failing conditions with significant congestion and slow travel speeds.

The modifications included in the ASAM were then represented in the microsimulation model with the year 2040 volumes. The ASAM model indicates levels of service improve for all segments in all directions. More details about the traffic analyses and model results are included in **Appendix B**.

Table 3-2 summarizes the levels of service for the various segments within the corridor for the No-Build and ASAM in year 2040.

Table 3-2: Estimated Levels of Service for 2040

Segment	No-Build		ASAM	
	AM	PM	AM	PM
Eastbound I-94				
I-96 to M-10	C	F	C	B
M-10 to I-75	D	F	B	B
I-75 to Van Dyke	C	F	B	C
Van Dyke to Gratiot	D	E	B	D
Gratiot to Conner	C	F	B	D
Westbound I-94				
Conner to Gratiot	F	F	C	B
Gratiot to Van Dyke	F	F	D	B
Van Dyke to I-75	F	F	E	C
I-75 to M-10	E	F	C	B
M-10 to I-96	E	F	D	E

3.2.2. Bridges

The ASAM retains many of the bridges that would have been eliminated under the ASA. MDOT retained the bridges in response to public controversy and opposition from the city of Detroit, who felt the ASA impacted neighborhood and community connectivity. In addition to retaining multiple bridges, new bridge connections will be provided as well as new Complete Streets bridges that provide additional neighborhood and community connectivity. The changes to existing bridges are summarized in **Table 3-3**.

Table 3-3: Approved Selected Alternative with Modifications Changes to Bridges over Freeways

Freeway Crossed	Bridge	
RETAINED BRIDGE CONNECTIONS THE ASA ELIMINATED		
I-94	John R Street	
I-94	Beaubien Street	
I-94	Lucky Place/Moran Street	
I-75	Ferry Street	
M-10	Canfield Street (Pedestrian Bridge)	
M-10	Selden Street (Pedestrian Bridge)	
NEW BRIDGE CONNECTIONS		
I-94	Hastings Street	
I-94	Iron Belle Trail (Conner Avenue Interchange)	
I-75	Harper Avenue	
PEDESTRIAN BRIDGES CONVERTED TO COMPLETE STREET BRIDGES		Proposed Complete Street Bridge
I-94	Helen Street	Helen Street
I-94	Townsend Street	Sheridan Street
I-94	Seminole Street	Iroquois Street
I-94	Rohns Street	Rohns Street
I-94	Springfield Street	Lemay Street
M-10	Selden Street	Selden Street
M-10	Canfield Street	Calumet Street/Four Tops
M-10	Merrick Street	Merrick Street
M-10	Holden Street	Holden Street
REMOVED BRIDGES (NOT REPLACED)		Reason for Removal
I-94	Brooklyn Street pedestrian bridge	To accommodate modernization of the I-94/M-10 interchange. Pedestrians accommodated at new Trumbull Avenue Complete Street bridge.
I-94	Third Avenue bridge	To accommodate modernization of the I-94/M-10 interchange. Traffic redirects to Second Street and Cass Avenue Complete Street bridges.
I-94	U-turn bridge west of Mt. Elliott Street	Replaced with upgraded bridges at Mt. Elliott Street and Lucky Place, and a new bridge at Harper Avenue.
I-94	McClellan Street	To accommodate modernization of the Gratiot Avenue interchange. Pedestrian and vehicular access accommodated at Gratiot Avenue and the proposed Rohns Street Complete Streets bridge.

Freeway Crossed	Bridge	
I-75	Piquette Avenue	Replaced with a new bridge at Harper Avenue.
I-75	Former Conrail/Norfolk Southern Railroad bridges	Inactive railroad bridges no longer needed.

3.2.3. Service Drives

The ASAM differs from the ASA in that it does not construct continuous one-way service drives within the Project limits. The ASAM instead proposes utilizing the existing service drive and roadway network, proposes new connections that improve connectivity and local circulation but avoid substantial property impacts. In addition, the ASAM proposes converting various existing service drives from one-way traffic flow to two-way local street connectors to improve local connectivity and circulation. The changes can be seen in the figures in **Chapter 12**.

3.2.4. Interchanges

The ASAM will reconstruct, reconfigure and modify interchanges within the I-94 Project limits. The ASAM will lengthen acceleration and deceleration lanes to correct deficient weaving movements. Entrance and exit ramps east of I-75 will be designed to provide sufficient distances between them to meet current design standards. Full auxiliary lanes will be added along portions of I-94 between on- and off-ramps for vehicle merging, acceleration, and deceleration.

The locations of auxiliary lanes for eastbound I-94 are between:

- I-96 on-ramp and M-10 off-ramp
- Grand River/Linwood Avenue on-ramp and Trumbull Avenue off-ramp
- M-10 on-ramp and I-75 off-ramp
- I-75 on-ramp and Chene Street off-ramp
- Chene Street on-ramp and Mt. Elliott Street off-ramp
- Mt. Elliott Street on-ramp and Van Dyke Avenue off-ramp
- Van Dyke Avenue on-ramp and Gratiot Avenue off-ramp
- Gratiot Avenue on-ramp and Conner Avenue off-ramp

The locations of auxiliary lanes for westbound I-94 are between:

- Conner Avenue on-ramp and Gratiot Avenue off-ramp
- Gratiot Avenue on-ramp and Van Dyke Avenue off-ramp
- Van Dyke Avenue on-ramp and Mt. Elliott Street off-ramp
- Chene Street on-ramp and I-75 off-ramp
- I-75 on-ramp and M-10 off-ramp
- Trumbull Avenue on-ramp and Linwood/Grand River Avenue off-ramp
- M-10 on-ramp and I-96 off-ramp

Additional details including operational and safety analyses of the proposed freeway access (interchanges) changes are documented in an Interstate Access Change Request (IACR) Report (see **Appendix J**).²⁹ The proposed ASAM interchange access changes are not anticipated to have substantial adverse impact on the safety and operation of I-94 (including mainline lanes; existing, new, or modified ramps, and ramp intersections with crossroads; or on the local street network under existing and future traffic volumes).

Interchanges to be reconstructed along I-94 include:

- Linwood Avenue and Grand River Avenue (M-5) (eastern facing ramps only)
- M-10
- John R Street, Brush Street, Beaubien Street and Hastings Street
- I-75
- Chene Street
- Mt. Elliott Avenue
- Van Dyke Avenue
- Gratiot Avenue
- French Road
- Conner Avenue
- Interchanges to be eliminated along I-94 include:
 - 14th Street (eastbound entrance ramp)
 - Russel Street (eastbound entrance ramp)
 - French Road

Interchanges to be reconstructed along M-10 include:

- Forest Avenue and Four Tops/Calumet Street
- Grand Boulevard/Milwaukee Avenue

3.2.4.1. I-94/M-10 INTERCHANGE REDESIGN

The I-94/M-10 interchange will be reconstructed and reconfigured to provide right-handed on- and off-ramps, provide access to the New Center Area and Wayne State University, and provide street-level bridge crossings over M-10 at Holden Avenue and Merrick Street. To provide street-level bridge crossings at Holden Avenue and Merrick Street, M-10 will be lowered and I-94 will bridge over M-10. The I-94 ramps to southbound M-10 are redesigned to minimize impacts to the Wayne State University Athletic Fields.

²⁹ The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)), which will meet the requirements of Interstate Access Change Request Policy Point 4.

3.2.5. Transportation System Management

The 2001 DEIS dismissed Transportation Systems Management (TSM) as a standalone alternative; however, this alternative was carried forward as an option that is compatible with the ASA and the ASAM. TSM includes implementing strategies that may improve the operational efficiency of transportation systems that are less capital-intensive. Typical TSM measures include ramp metering, incident management and freeway courtesy patrols, and Intelligent Transportation Systems (ITS).

The ASAM includes elements of a regionwide congestion management process (CMP) as recommended in SEMCOG's RTP.³⁰ In addition to highway planning, the RTP addresses transit, bike, and pedestrian travel as an integral part of a complete transportation system. The RTP recommends a range of multimodal projects and strategies to minimize congestion and enhance mobility for the transport of people and goods.

Active Transportation and Demand Management (ATDM) is recommended as part of the ASAM. ATDM is a cyclical approach where the system's performance is continuously monitored, assessed and actions are taken to address performance to improve safety, support incident management, enhance travel reliability, minimize congestion, and provide traveler information. Examples of actions include using monitoring cameras to identify incidents quickly and providing service patrols to help clear incidents quickly and working with area employers to allow flexible work hours to spread demand over the day.



What are 'TSM,' 'TDM,' and 'ITS'?

Transportation System Management, or TSM

TSM elements optimize existing transportation facilities to maximum carrying capacity and travel efficiency through freeway and local road traffic management and other measures to help alleviate congestion.

Travel Demand Management, or TDM

TDM elements reduce personal vehicle travel by increasing transit use or shifting personal vehicle travel to alternative times and routes, allowing for more efficient use of the existing transportation system's capacity.

Intelligent Transportation Systems, or ITS

ITS refers to technologies that monitor and manage the various components of transportation systems. It allows operators to quickly respond to incidents and to announce traffic-related information to the public, such as crashes or weather conditions. Dynamic message signs, traffic cameras and road sensors are familiar ITS equipment that can be seen along roadways in Michigan.

³⁰ SEMCOG. (June 2013 (Revised May 3, 2018)).

A separate, standalone Pre-Stage Maintenance of Traffic (MOT) ATDM project will be completed before construction begins on the first mainline segment, and it will remain active throughout construction of all segments to minimize, to the extent possible, traffic disruptions in work zones. The Pre-Stage MOT ATDM system will include a Traveler Information System and Adaptive Traffic Signal Control (ATSC) system along Michigan and Gratiot avenues. Separate environmental review of the Pre-Stage MOT ATDM project was completed in 2018 (see **Table 2-1**).

The freeway-based Traveler Information System uses a combination of variable speed advisories, queue warnings, traveler information, and integrated corridor management to communicate travel information to motorists on I-94 via dynamic message signs (see **Figure 3-9**). The two ATSC corridors will optimize traffic-signal timings based on real-time conditions, improving safety, enhancing local connectivity, and minimizing delay. The ATSC corridors will adapt to increased demand during construction on I-94.

Figure 3-9: Dynamic Message Signs and Ramp Metering



Source: FHWA

The final ASAM ATDM system will be designed and constructed in conjunction with each segment's mainline construction to support I-94 in its final configuration. The Final Alignment ATDM system may include ATSC on future I-94 service drives and adaptive ramp metering system on the I-94 freeway on-ramps.

Figure 3-10, Figure 3-11 and Figure 3-12 illustrate the proposed modifications to the ASA.

Figure 3-10: Illustrations of Proposed Modifications to Approved Selected Alternative (Figure 1 of 3)

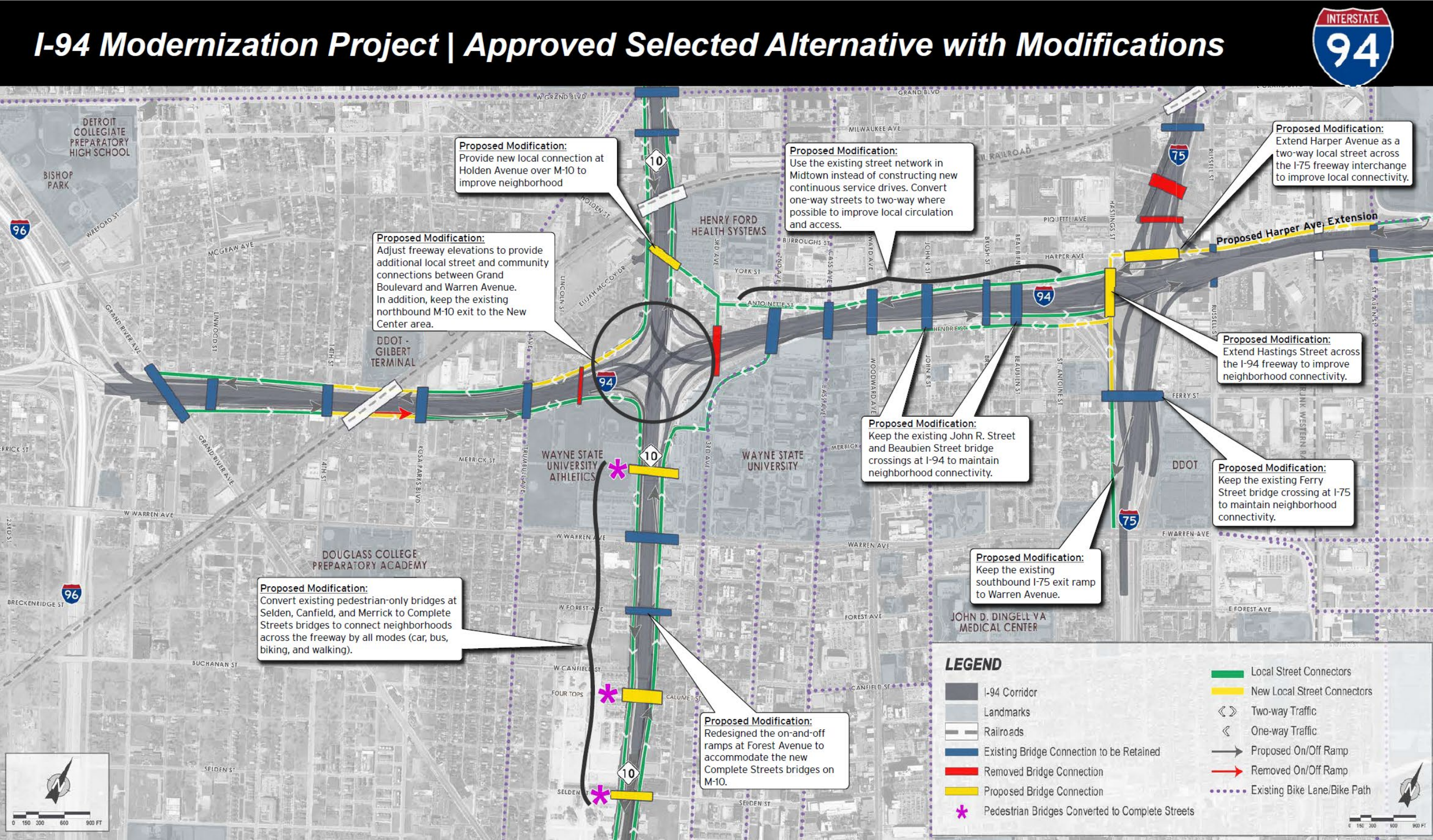


Figure 3-11: Illustrations of Proposed Modifications to Approved Selected Alternative (Figure 2 of 3)

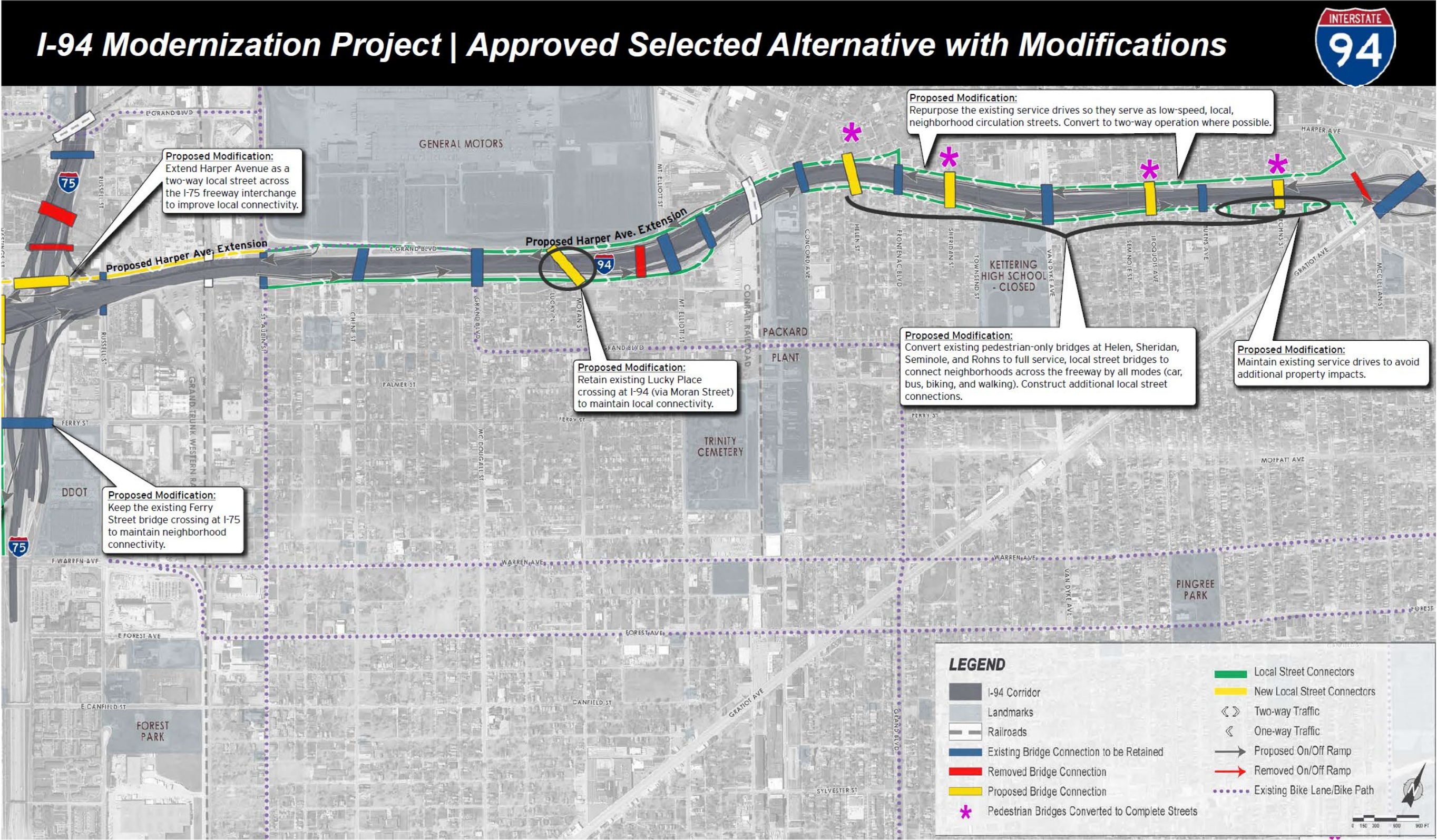
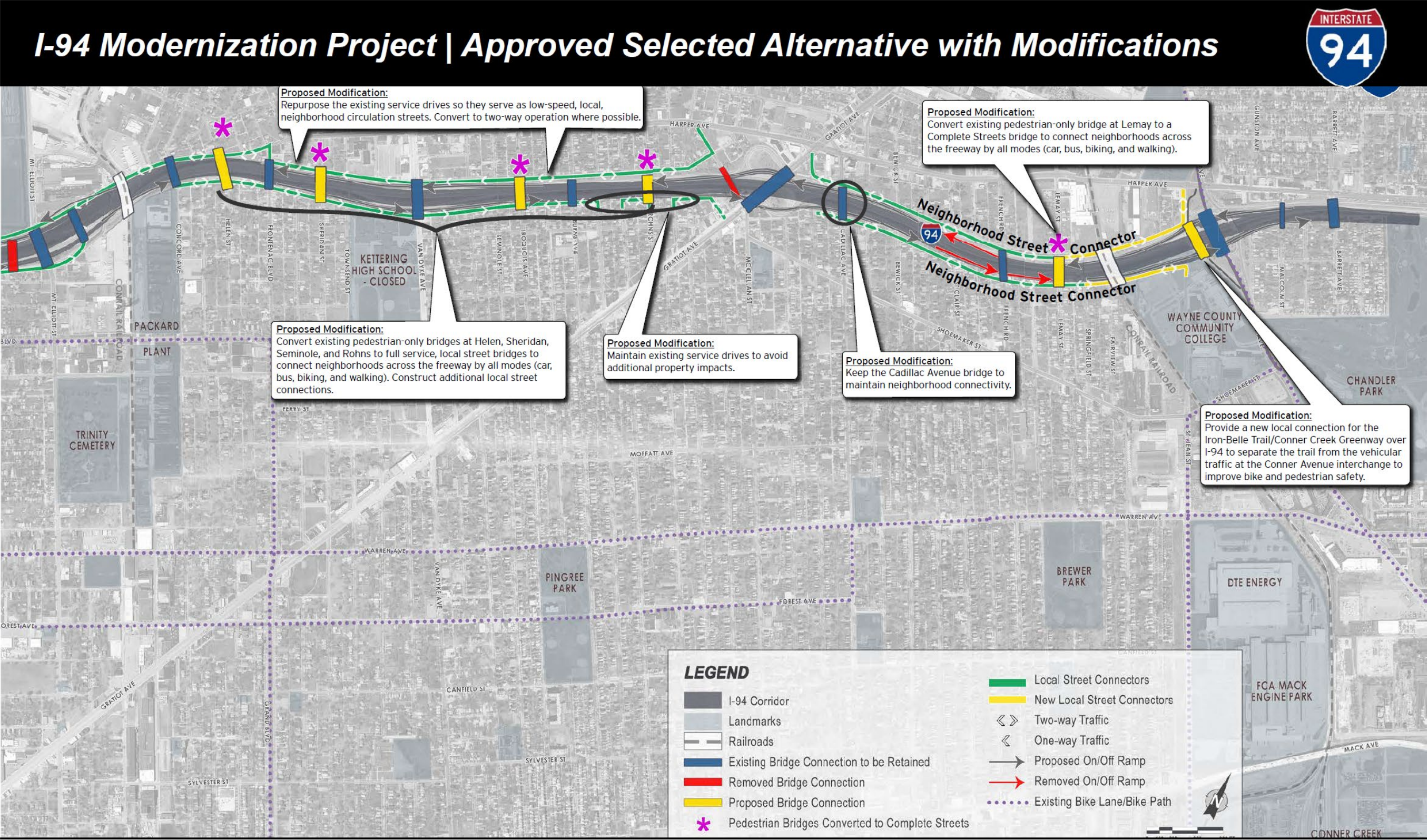


Figure 3-12. Illustrations of Proposed Modifications to Approved Selected Alternative (Figure 3 of 3)



4. AFFECTED ENVIRONMENT AND SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS

This chapter reviews the 2001 Draft Environmental Impact Statement (2001 DEIS) and the 2004 Final Environmental Impact Statement (2004 FEIS) (available online at http://www.michigan.gov/mdot/0,4616,7-151-9621_11058_53088_53115-112105--,00.html), and it summarizes and discusses where the existing conditions and potential impacts have or have not changed between the 2005 Approved Selected Alternative (ASA) and the Approved Selected Alternative with Modifications (ASAM). Portions of the 2001 DEIS/2004 FEIS that remain valid will be summarized. Chapter 4 of the 2001 DEIS/2004 FEIS included the discussion of affected environment and Project impacts. The No-Build Alternative impacts as described in the 2001 DEIS/2004 FEIS remain valid for all resource areas discussed. The following sections focus on the ASAM compared to the ASA for the modernization of approximately 6.7 miles of interstate freeway (I-94) in the city of Detroit, Michigan between I-96 and Conner Avenue (Project).

4.1. Summary of Changes in Existing Conditions Since 2005 Record of Decision

4.1.1. Land Use Changes

Since the 2005 Record of Decision (2005 ROD), land uses have changed, including the construction of new residential, business, and mixed-use development projects focused on the Midtown, New Center and TechTown neighborhoods northeast of the I-94/M-10 interchange. Zoning designations in the land use study area have not substantially changed. **Section 4.6** discusses the land use analysis.

4.1.2. Regional and Statewide Transportation Planning

The Southeast Michigan Council of Governments (SEMCOG) prepares regional transportation plans (RTP) and plan updates, as the Federal Aid Highway Act (as amended) requires. SEMCOG is updating its current RTP 2040 plan,³¹ which includes the Project. SEMCOG anticipates it will complete its update in 2019.



What are 'ASA' and 'ASAM'?

The “Approved Selected Alternative” or **ASA** is the selected alternative described in the Project’s 2005 ROD, which affirmed the 2004 FEIS recommended alternative.

The “Approved Selected Alternative with Modifications” or **ASAM** is a proposed modification to the ASA. MDOT has not yet approved or selected the ASAM, but it is the preferred alternative evaluated in this DSEIS.

After a formal public and agency review period and public hearing on the SDEIS, MDOT and FHWA will identify a selected alternative in the Combined FSEIS and ROD.

³¹ Southeast Michigan Council of Governments. 2040 Regional Transportation Plan for Southeast Michigan. June 2013 (revised May 3, 2018).

Michigan's long-range transportation plan, *MI Transportation Plan*, was adopted in 2016 and guides state and federal investments in transportation.³² The plan sets forth pavement and bridge condition goals to maintain 95% of pavement in good or fair condition on the freeway system, and 85% good or fair on the non-freeway system. For state trunkline bridges the performance measure used is the National Bridge Inventory (NBI) rating scale.

In July 2018, the Michigan Department of Transportation (MDOT) adopted the Initial Transportation Asset Management Plan (TAMP) to implement new federal performance management requirements associated with the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act.³³ The Initial TAMP discusses performance measures meant to address safety, infrastructure condition, congestion, and system reliability, consistent with national pavements and bridge performance measures for the Interstate and National Highway System. The Initial TAMP is a preliminary step in a federal process that will take several years to fully implement.

MDOT is currently preparing its 25-year long-range transportation plan, *Michigan Mobility 2045*. MDOT plans to complete *Michigan Mobility 2045* by the end of 2020. The plan is being developed through coordination with the Transportation Asset Management Council and the Michigan Infrastructure Council to integrate efficiently with water, sewer, and electricity infrastructure. The state of Michigan hosts a website at www.Michiganmobility.org with public information about the plan and planning process.

4.1.3. Continuing Economic Development

SEMOG prepared an economic and demographic outlook for Southeast Michigan in 2017.³⁴ This study concluded that with recent employment growth and a falling unemployment rate, the near-term outlook appears to indicate that the economy of Southeast Michigan will have positive economic growth. The longer-term outlook is for growth at a moderate pace.

4.1.4. Other Interstate and Freeway Projects

In addition to the Project, MDOT's 5-Year Plan includes multiple bridge preservation projects (overlays, patching and other maintenance work) and bridge replacement projects along interstate and state trunkline. Freeway resurfacing projects, reconstruction and rehabilitation of roads are also listed in the 5-Year Plan. Larger road and bridge projects include the Gordie Howe International Bridge, which is a new international crossing planned between Detroit and Windsor, Canada, and I-75 modernization in Oakland County.³⁵

4.1.5. Other Transportation Planning and Projects

Non-roadway projects near the Project include the recently constructed QLINE Streetcar along Woodward Avenue, which began operating in 2017. Also, the Regional Transit Authority of Southeast Michigan has included Bus Rapid Transit (BRT) along Woodward Avenue, Michigan Avenue, and Gratiot Avenue corridors in their Master Plan.

Many initiatives of the city of Detroit and other stakeholders such as the Downtown Detroit Partnership, the Detroit Greenways Coalition and others have been adopting plans and projects to enhance and create facilities for

³² Michigan State Transportation Commission. 2016.

³³ Michigan Department of Transportation. (July 2018) Initial Transportation Asset Management Plan. Retrieved from https://www.michigan.gov/documents/mdot/Initial_Transportation_Asset_Management_Plan_622319_7.pdf.

³⁴ Grimes, Donald R. and Fulton, George A. "Stabilizing and Sustaining: The Economic and Demographic Outlook for Southeast Michigan Through 2045". March 2017. Southeast Michigan Council of Governments. Retrieved from <https://www.semco.org/desktopmodules/SEMCOG.Publications/GetFile.ashx?filename=StabilizingAndSustainingMarch2017.pdf>.

³⁵ Michigan Department of Transportation. 2018.

nonmotorized vehicles and pedestrians. The most notable is the Inner Circle Greenway, now known as the Joe Louis Greenway, which is a planned 26-mile trail that will connect neighborhoods to parks, schools, historic sites, commercial areas, and transit. Within the Project corridors, the proposed trail will cross I-94 at St. Aubin Street. Other noteworthy pedestrian/bike facility crossings include bike lanes, which cross I-94 along East Grand Boulevard and follow Harper Avenue to cross I-75. Trumbull Avenue, Anthony Wayne, Cass, and John R streets also currently have pedestrian and bicycle facilities. A bicycle connection along Third Avenue, north of I-94, is also planned.³⁶ Another major planned nonmotorized path is the Iron Belle Trail from Belle Isle in Detroit to the western tip of the Upper Peninsula, which currently crosses I-94 on bike lanes through Conner Avenue.

4.1.6. Changes in Laws or Regulations

4.1.6.1. AIR QUALITY

There have been changes to the National Ambient Air Quality Standards and the modeling requirements for air quality conformity and hot-spot analysis since the 2004 FEIS. Since 2012, U.S. Environmental Protection Agency (EPA) required the use of the *Motor Vehicle Emissions Simulator* (MOVES) for air quality conformity and project level hot-spot analysis. In 2014, the EPA announced the release of the MOVES2014 emissions model for SIPs and transportation conformity analyses and started a two-year transportation conformity grace period that ended on Oct. 7, 2016, after which MOVES2014 was required to be used for air quality conformity, project level hot-spot analysis and National Environmental Policy Act (NEPA) purposes.

4.1.6.2. TRAFFIC NOISE

On July 13, 2010, the Federal Highway Administration (FHWA) published the final rule amending Title 23, CFR, Part 772, “Procedures for Abatement of Highway Traffic Noise and Construction Noise,” adding new activity categories and requiring all state highway agencies to submit revised noise policies meeting the requirements of the final rule. The revised policies would need to be implemented within one year of the publication of the final rule. MDOT’s FHWA-approved *Highway Noise Analysis and Abatement Handbook*, dated July 13, 2011, states, “*Highway traffic noise impact analysis, abatement procedures, criteria, coordination requirements, and reporting guidance contained herein are based on the Federal Highway Administration’s (FHWA) Title 23 Code of Federal Regulations, Part 772 (23 CFR 772), July 13, 2010 All transportation improvement projects developed in conformance with MDOT’s guidelines shall be in conformance with those mandated by FHWA. This Handbook implements the requirements of 23 CFR 772 to Federal projects authorized under 23 USC throughout the State of Michigan.*”

³⁶ Detroit Greenways Coalition. (2019, January 10). [detroitgreenways.org](https://detroitgreenways.org/wp-content/uploads/2018/03/Joe-Louis-Greenway-v3-2018-FINAL-digital-use-compression.pdf). Retrieved from Joe Louis Greenway: <https://detroitgreenways.org/wp-content/uploads/2018/03/Joe-Louis-Greenway-v3-2018-FINAL-digital-use-compression.pdf>.

4.2. Threatened and Endangered Species

4.2. Threatened and Endangered Species

The official lists of threatened and endangered species have changed since the 2005 ROD. This includes the addition of species described below; greater detail about which can be found in **Section 4.12.1.4**. None of these species are expected to be present or impacted by the Project.

- Northern long-eared and Indiana bats: The U.S. Fish & Wildlife Service (USFWS) listed the northern long-eared bat (*Myotis septentrionalis*) as a threatened species under the Endangered Species Act of 1973 (ESA) on May 4, 2015.
- Eastern massasauga rattlesnake: On Sept. 30, 2016, USFWS listed the eastern massasauga rattlesnake (*Sistrurus catenatus*) as a threatened species under the ESA.
- Red knot (bird): In 2014, USFWS listed the red knot (*Calidris canutus*) as a threatened species under the ESA.

4.3. Social Environment

This section discusses data updates and analysis of the social environment impacts of the ASAM. The social environmental analysis conducted for the 2004 FEIS remains valid and so is summarized where appropriate. This section presents updates to data and information.

4.3.1. Existing Social Environment

4.3.1.1. POPULATION

The area's current demographic data is reported in table form in **Appendix C**. The 2004 FEIS examined census data from the 2000 U.S. decennial census. There is a newer 2010 census as well as updates to the American Community Survey (ACS), which provides five-year estimates of population data.

A re-examination of the data shows that the population of Detroit continued to decrease between the 2000 and 2010 censuses. Detroit's population peaked in 1950. The 1950 U.S. census reported a population of 1,849,468 after an annual growth rate of 1.31% over the previous decade. From that point, populations have steadily declined with the largest decline between 2000 and 2010, which includes the period during which the 2004 FEIS was prepared. That decade saw an annual average loss of 2.87%. Negative growth rate fluctuated slightly after 2010, but since 2015 the downward trend has slowed. The 2017 ACS reports negligible population change over the previous year in the demographic study area (see **Table 4-1**).

Table 4-1: Population Data

Location	2000 Census	2010 Census	Change 2000-2010	2017	Change 2016-2017
Demographic Study Area*	89,215	65,783	-26.3%	63,530	0.0031%
Detroit	951,270	713,777	-25.0%	679,865	-0.5%
Wayne County	2,061,162	1,820,584	-11.7%	1,763,822	-0.2%
Southeast Michigan**	4,833,492	4,704,743	-2.7%	4,727,536	0.2%
State of Michigan	9,938,444	9,883,640	-0.5%	9,925,568	0.2%

Source: U.S. Census Bureau – 2000 Census, 2010 Census, 2012-2016 American Community Survey 5-Year Estimates, 2013-2017

* The demographic study area includes census tracts adjacent to the Project limits (see map in **Appendix C**).

**Southeast Michigan includes Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties.

4.3.1.2. HOUSING

The U.S. Department of Housing and Urban Development Office of Policy and Research reports that for the Detroit Housing Market Area (HMA) the housing market is soft but improving. With relatively low levels of new home construction and improving economic conditions, excess housing inventory is being absorbed. The sales vacancy rate in 2016 was estimated by HUD at 2%, which is down from 2.6% reported for April 2010 and home sales were down by 4% from the previous year. HUD estimates the overall rental vacancy rate to be 5.8%, which is down 12.9% from April 2010.³⁷

4.3.1.3. COMMUNITY FACILITIES AND SERVICES

Community facilities and services within the corridor were reassessed in total. The following sections list some notable facilities that are currently present near the Project.

Schools

Education facilities adjacent to the Project include University Preparatory Academy on Holden Avenue, in the northeast quadrant of the I-94/M-10 interchange; Wayne State University whose campus is in the southwest quadrant of the I-94/M-10 interchange; the Golightly Education Center, a Pre-K through 8 public school in the southeast quadrant of I-94 and I-75; and Wayne County Community College south of the Conner Avenue interchange.

Places of Worship

Several churches are within ¼ mile (walking distance) of I-94, M-10 and I-75, and the following places of worship are within the footprint of the ASAM improvements:

- Our Lady of the Rosary Catholic Church, 5930 Woodward Ave., and its rectory, 71 E. Edsel Ford Service Drive
- Tree of Life Missionary Baptist Church, 6157 Belvidere St., and its annex, 9203 Gratiot Ave.
- Mt. Carmel Tabernacle Church on Pennsylvania Avenue near the Gratiot Avenue interchange
- Immanuel Outreach Cathedral parking lot, 3651 Holborn St.
- Bethel Deliverance Tabernacle, 7200 Harper Ave./6450 Frontenac St.
- Stone of Hope Church, 9950 Harper Ave.
- Conner Park Congregation, 11220 Harper Ave.
- Faith Restoration Ministries (Gospel of Deliverance), 11941 Harper Ave.

³⁷ U.S. HUD Office of Policy and Research. (As of July 1, 2016). Comprehensive Housing Market Analysis Detroit-Warren-Dearborn, Michigan. Chicago: U.S. Department of Housing and Urban Development.

Community Centers

Like places of worship, community centers provide meeting places and social services. The Project corridor includes the following notable community centers:

- McGregor Memorial Conference Center, 495 Gilmour Mall (Wayne State University)
- Alkebu-lan Village, 7701 Harper Ave.
- Community House Senior Center, 6486 Seneca St.
- Brighter Detroit Community Center/Wayne County 4-H Community Center, 5710 McClellan Ave.
- YMCA of Metropolitan Detroit, 1401 Broadway St.

Public Parks and Recreation Areas

The following public parks and recreation areas within the Project limits are described in detail in **Section 5.4.2**:

- Wayne State University Athletic Campus
- Wigle Recreation Center
- West Willis #2 Park
- Vernor Park
- Castador Park
- Iron Belle Trail (Conner Creek Greenway)
- Conner Playfield Park
- Chandler Park

4.3.1.4. TRANSIT

Transit plans are documented in the 20-year *Regional Master Transit Plan*.³⁸ The only planned transit improvement for the I-94 corridor is an Airport Express route connecting Macomb County to the Detroit Metro Airport. That service will use I-94 and provide eight round trips per day, seven days a week. No other services are proposed to use I-94 as a preferred transit corridor. Currently, both major transit agencies in the region, Detroit Department of Transportation (DDOT) and Suburban Mobility Authority for Regional Transportation (SMART), do not have routes on I-94, but do use the corridor to get buses in position to provide transit services on other roadways. The ASA planned to use the service drives for transit. Demand for transit service along the service drives is low because adjacent areas have low residential density and fewer destinations for those who use transit. The extension of Harper Avenue west to Woodward Avenue complements DDOT's desire to create a frequent transit network and provides an opportunity to implement a direct crosstown connection from the eastside to New Center and Midtown Detroit.

³⁸ RTA, Regional Transit Authority of Southeast Michigan. (August 2016).

4.3.1.5. NONMOTORIZED (PEDESTRIAN AND BICYCLE) MOBILITY

Since the 2004 FEIS, the Michigan Department of Natural Resources (DNR) and city of Detroit have implemented or are studying numerous nonmotorized initiatives for new and/or upgraded pedestrian and bicycle facilities in and around the I-94 Project limits to improve connectivity and safety. The city implemented new bicycle facilities on Grand River Avenue, Second Avenue, Cass Avenue, Grand Boulevard, and Conner Avenue. There are also multiple other planned facilities including the Joe Louis Greenway, which crosses I-94 at St. Aubin Street. In addition, the biking portion of Iron Belle Trail, managed by the DNR, crosses I-94 near the Conner Avenue interchange.

Recent projects (Trumbull, Van Dyke, Gratiot, and Woodward avenues Bridge Replacements) constructed within the Project limits include Complete Street facilities for pedestrians, bicycles, and other personal transportation devices such as scooters.

4.3.1.6. NEIGHBORHOOD/COMMUNITY CHARACTER AND COHESION

MDOT's goal is to enhance neighborhood cohesion by improving multimodal access, mobility, and safety for all modes of travel to advance community development and revitalization and to serve all transportation users. Through engagement with the city and community stakeholders during development of the ASAM, MDOT strategically selected which existing pedestrian bridges should be maintained, which should be accommodated on a new or existing nearby Complete Street or community connector bridge, and which should be eliminated. The result is the neighborhood and community connector bridges described in **Section 3.2.2**.

Community connector bridges connect commercial and cultural corridors where civic and neighborhood zones are present adjacent to the bridges. Bridges of this type connect local streets and embrace Complete Streets principles as they include sidewalks and shoulder/bicycle lanes and in the case of Conner Avenue, a dedicated bridge for the Iron Belle Trail shared-use path. They are intended to have more intensive landscaping and public art to highlight them as "community gateways" and improve the transition between the freeway and surrounding area. Aesthetic bridge details are set forth in the *I-94 Rehabilitation Project Corridor Design Guidelines*.³⁹

Many bridges in the corridor are designated in the *I-94 Rehabilitation Project Corridor Design Guidelines* as "neighborhood connector bridges." Bridges of this type connect local streets and are also "Complete Streets" meaning they include sidewalks and shoulder/bicycle lanes. These Project features promote physical activity, which is especially important for public health and environmental justice.

4.3.2. Impacts to the Social Environment

4.3.2.1. IMPACTS TO COMMUNITY FACILITIES AND SERVICES

Schools

Under the ASAM none of the schools operating within the Project limits will require relocation. Impacts to school properties will be minor and/or temporary. The ASA would have impacted the Catherine C. Blackwell Institute and the University Preparatory Academy near the I-94/M-10 interchange. The ASAM does not impact the Catherine C. Blackwell Institute and does not require permanent right-of-way from the Academy. The ASAM will reconstruct Holden Street and three driveways, which provide access to the parking lots of the Academy.

³⁹ Michigan Department of Transportation. (2010).

Permanent and temporary changes to the transportation system may impact connectivity and mobility within the Project limits. These changes include temporary detours/traffic restrictions and permanent modifications to the state and local networks.

Detours/traffic restrictions may temporarily affect vehicular and pedestrian access, traffic patterns and bus routes within the Project limits and may cause delays. Permanent changes result in both positive and negative impacts. Removing the Third Avenue crossing as proposed in the ASA and the ASAM requires a shift in traffic patterns, whereas the addition of neighborhood connector bridges as proposed in the ASAM enhance safety and quality of life for students and employees walking or riding bicycles to community facilities.

Places of Worship

The Project team often met at places of worship because they are a familiar community gathering place for neighborhood residents and accommodate large groups of people. To help identify impacts to places of worship, MDOT coordinated with the Council of Baptist Pastors of Detroit, which is comprised of pastors with congregations in the Project limits. A meeting held in September 2018 reiterated the importance of connectivity, keeping congregations informed during the life of the Project through public involvement and coordination on traffic management during construction. The group also noted their concern for community benefits, job opportunities/training for residents and relocations. Through these conversations MDOT identified a need to avoid impacts to entrance- and exit-ramps near neighborhood churches. The ASAM improvements will not impact access to the churches along the corridor.

Community Centers

Like places of worship, community centers are a familiar community gathering place for neighborhood residents. Meetings held at community centers helped MDOT have conversations with the residents that will be most affected by the Project and to identify impacts. The needs of community centers are like the needs of places of worship. The ASAM improvements will not impact access to community centers along the corridor.

Public Parks and Recreation Areas

Wayne State University

The ASAM will require permanent property acquisitions for sidewalk reconstruction from the Wayne State University Athletic Campus southwest of the I-94/M-10 Interchange. Acquisitions include 0.095 acres at the corner of Edsel Ford Service Drive and John C. Lodge Service Drive next to Harwell Baseball Field and 0.003 acre from the northwest quadrant of the intersection of M-10 and Warren Avenue. The chain link fence surrounding the athletic facilities and a ground-mounted Wayne State University monument sign may be relocated. This minor, or *de minimis*, use will not affect occupancy, facilities, or functions, or create substantial noise or visual effects. Grading and roadway and sidewalk construction along the service drive frontages will temporarily impact 0.128 acres of the property (see **Section 5.5.2.3**). Street trees between the sidewalk and street will likely be removed during replacement of the sidewalk and roadway. Access to the parking lots may be affected during construction but access will be provided during construction. MDOT will request a Finding of De Minimis Impact from FHWA. FHWA has made a preliminary determination that the impacts to the Wayne State University Athletic Campus are *de minimis*.

City Parks

The Project will temporarily impact some city parks during construction. Temporarily affected parks include Chandler Park, Vernor Park, West Willis #2 Park, Wigle Recreation Center (Wigle Park), Castador Park and Conner Playfield. These minor temporary grading impacts affect strips of land ranging in size from 0.0128 acres to 0.156

acres (see details in **Table 5-1**). MDOT does not propose any permanent conversions of park and recreation properties within these parks. FHWA has made a preliminary determination the impacts to city parks are *de minimis*.

Of note, Chandler Park received Land and Water Conservation Funds (LWCF) in 1976 for construction of the tennis courts that are located within the park. The LWCF provides funding for parks and recreational facilities across the United States. Section 6(f)(3) of the LWCF Act, which this report refers to as “Section 6(f),”⁴⁰ contains provisions to protect federal investments in parks and recreation resources, and to use these funds to maintain the public benefits these resources provide. MDOT cannot convert Section 6(f) park and recreation properties to anything other than public outdoor recreation uses. If use of a Section 6(f) resource lasts less than six months, and if afterward, a project restores the property to at least its previous condition, the NPS may approve a temporary nonconforming use of the Section 6(f) resource. Grading to replace sidewalks next to Chandler Park will require a 0.027-acre temporary easement and no recreation facilities or functions will be impacted by construction activities.

Iron Belle Trail and Conner Playfield Park

The Conner Avenue interchange will be redesigned and reconstructed as part of the ASAM, creating an opportunity to reroute the Iron Belle Trail off the street to a separate shared-use path and bridge. Changes proposed within the city of Detroit’s Conner Playfield Park include vacating the southbound separated right-turn lane from Conner Avenue to Harper Avenue. This movement will be shifted to the mainline of Conner Avenue. This change will create additional land at Conner Playfield Park to move the trail path and align it with the crossing at Harper Avenue. The alignment will improve safety for bikes and pedestrians crossing Harper Avenue. The impacts are illustrated in **Appendix I**.

Moving the Iron Belle Trail onto a separate bridge over I-94 freeway and exit/entrance ramps preserves and enhances safety by separating it from vehicular traffic. For this reason, it was preferred by the officials with jurisdiction (city of Detroit Parks and Recreation Department and the Michigan Department of Natural Resources) who were informed of the plans at a meeting with MDOT on Jan. 29, 2018 (see **Appendix I**). MDOT is preparing concept plans for improvements to the trail including aesthetics of the bicycle/pedestrian bridge, and further enhancing and improving the design of the trail through this location. FHWA has made a preliminary determination the impacts to the Iron Belle Trail are *de minimis*.

4.3.2.2. RIGHT-OF-WAY ACQUISITION AND RELOCATION IMPACTS

The ASA and ASAM require additional right-of-way within the Project limits. See **Chapter 12** for design maps that show proposed right-of-way acquisitions and relocations. Acquisitions and relocations for the ASAM are different from the ASA because the proposed modifications have reduced right-of-way impacts. The Conceptual Stage Relocation Plan (CSRP) included in the 2004 FEIS identified 18 residential and 24 business relocations. A revised CSRP prepared for a 2014 EIS Re-evaluation for right-of-way acquisition found the number of residential and business relocations were reduced by two and six properties, respectively. The CSRP was updated in 2019 (see **Appendix E**).

Table 4-2 demonstrates how the potential relocations have changed since the 2004 FEIS. Through refined design, the ASAM acquires seven residential properties and 20 business properties. This is a reduction of nine residential relocations and four business relocations, compared with the 2004 FEIS.

⁴⁰ Section 6(f)(3) of the Land and Water Conservation Fund Act of 1965. “Conservation,” Title 16, USC, Sec. 4601a – 4 et seq. 2006 ed. Supplement 4. Available at: <https://www.gpo.gov/fdsys/pkg/USCODE-2010-title16/html/USCODE-2010-title16-chap1-subchapLXIX-partB-sec4601-4.htm>. Accessed November 2018.

Table 4-2: Reported Residential and Business Relocations (2004-2019)

Year of Study	Number of Residential Relocations	Number of Business Relocations
2004	18	24
2014	16	18
2019	7	20

Source: Conceptual Stage Relocation Plan I-94 Rehabilitation (February 2019)

A review of the local residential and commercial real estate markets indicates that there are enough replacement sites available to relocate eligible displaced residences and businesses. Displacements are not expected to have a major economic or otherwise generally disruptive effect on the community impacted by this Project (see **Appendix E**).

4.3.2.3. IMPACTS TO TRANSIT

The ASAM will affect transit service in both temporary and permanent ways due to changes in I-94 traffic flow during construction and in the future permanent condition, as well as improvements to non-motorized facilities along the local roadway network that interface with the I-94 reconstruction.

Just as I-94 is the quickest and most convenient route for automobile and freight traffic traveling through metro Detroit, it also serves as the best route to deadhead buses. Deadhead occurs when buses are operating but not in service; for example, when a bus is heading to the start of or leaving the end of their route and are no longer picking up passengers. Buses that use I-94 for deadhead purposes will be impacted by travel delays during construction. Travel delays on I-94 from traffic back-ups due to construction activities, incidents, and congestion can affect transit service when delayed deadhead buses are late to service their routes. Due to the unpredictability of delays, schedule disruption is difficult to plan for, but can be mitigated for over time with advanced planning and data analysis. During construction or if there is an incident along I-94, detours may be implemented to route traffic away from the congested area. Detours are likely to impact both schedules and service reliability. As a general practice, transit agencies plan detour routes that are as direct as possible to serve the major residential areas and travel-generators to minimize delay.

Long term, the ASAM benefits deadheading by reducing travel delays and increasing travel time reliability. The ASAM provides additional capacity to the freeway and improves safety by updating freeway design to meet current standards. The updated design reduces the potential for crashes, which minimizes travel delays.

Insufficient access to transit stops along the local roadway network creates safety issues for non-motorized users. Missing or unimproved sidewalks or proper curb ramps leading to transit stops force pedestrians and those using mobility devices onto the street or uneven ground (see also **Section 4.3.2.4** regarding pedestrians and bicycles). In addition, intersecting transit routes with a high transfer rate can improve safety by avoiding placing transit stops at locations that require passengers to cross the roadway and eliminate the potential for vehicular and pedestrian conflicts. The ASAM proposes reconstructing existing sidewalk and/or providing new sidewalk/non-motorized connections along the local roadway network that interfaces with the I-94 reconstruction. The reconstructed sidewalk and new non-motorized connections provide improved access for non-motorized users to transit stops.

4.3.2.4. IMPACTS TO NONMOTORIZED MOBILITY

The ASAM design incorporates city of Detroit policies for promoting nonmotorized means of transportation.⁴¹ The ASAM provides the following features not considered under the ASA that will enhance pedestrian, bicycle and other non-motorized access and mobility:

- Complete Streets on bridge crossings including replacement of former pedestrian bridges with new Complete Streets bridges
- Community Connector Bridges that include enhanced non-motorized and aesthetic features at locations identified by project stakeholders as being the most important connections across I-94 for non-motorized traffic. These locations are as follows:
 - Second Avenue Bridge over I-94
 - Cass Avenue Bridge over I-94
 - Iron Belle Trail Bridge over I-94 (near Conner Avenue)
- Redesigned service drives to address public concerns for pedestrian and bicycle safety

The ASAM also proposes converting former pedestrian bridges to Complete Streets bridges. These conversions provide more direct access across the freeway and reduce travel time for non-motorized users. The ASA design included pedestrian bridges that spanned over the proposed service drives and eliminated potential conflicts between vehicular and non-motorized traffic. The ASA design also required the construction of long ramps to accommodate users with disabilities resulting in increased travel time for non-motorized users. While the ASAM design is more convenient for non-motorized traffic due to reduced travel distance across the freeway, it requires users to cross the proposed service drives at street-level introducing potential conflicts between vehicular and non-motorized traffic. To help mitigate those safety concerns, the ASAM proposes several design features. The intersections of the service drives and Complete Streets bridges will be stop-controlled. Service drives are designed with narrower vehicular lanes, which promote slower travel speeds. Designated crosswalks will be provided at these locations where the service drives intersect the Complete Streets bridges.

Community facilities and services can benefit from the updated Project design through improved multimodal access. Improved access at transit stops provides a safety benefit for non-motorized users as discussed above in **Section 4.3.2.3**. Improvements to the non-motorized facilities along the service drives will allow pedestrians, bicyclists, and mobility device users safe passages to travel between destinations or on their trip to and from transit stops.

4.3.3. Mitigation of Social Environment Impacts

4.3.3.1. MITIGATION OF IMPACTS TO COMMUNITY FACILITIES AND SERVICES

MDOT will include a representative from places of worship on the LAC/GAC (see **Section 7.1.3**) and will continue coordination with the Council of Baptist Pastors of Detroit to help communicate Project activities to congregants and gather public input. Similar coordination with potentially affected schools and community centers would continue during roadway planning and construction. Mitigation measures presented under the discussion of construction impacts in **Section 4.16** and noise and vibration in **Section 4.9** and air quality concerns discussed in **Section 4.8** will be applied to minimize temporary construction disruptions and noise, vibration, and air quality impacts.

⁴¹ City of Detroit. (2009). Master Plan of Policies. Detroit. Retrieved from <http://www.detroitmi.gov/Portals/0/docs/Planning/Master%20Plan%20Text.pdf>.

4.3.3.2. MITIGATION OF TRANSIT SERVICE IMPACTS

Prior to construction, MDOT will coordinate with transit providers including SMART and DDOT to communicate potential closures or major changes in the maintenance of traffic and detours. As delay patterns emerge throughout the construction cycle, transit agencies may adjust transit schedules to mitigate the impact to transit users or include additional schedule recovery time for potentially impacted routes during the planned construction period.

If bus stops are temporarily eliminated during construction, MDOT will coordinate maintenance of traffic to identify an alternative stop near the original location while maintaining Americans with Disabilities Act (ADA) compliance. To minimize impacts to nonrevenue service, MDOT will evaluate maintenance of traffic considerations that minimize delay. See also **Section 6.12.2** regarding mitigation of potential construction impacts on transit service.

4.3.3.3. MITIGATION OF RIGHT-OF-WAY ACQUISITION AND RELOCATION

MDOT will provide acquisition and relocation assistance and advisory services in accordance and compliance with state and federal laws.⁴² MDOT will inform individuals, businesses, and nonprofit organizations of the impact, if any, of the Project on their property.

Residential

MDOT is required by statute to determine the availability of comparable, decent, safe, and sanitary housing for eligible displaced individuals. MDOT programs to implement the statutory and constitutional requirements of property acquisition and relocation of eligible displacees will be used. Appropriate measures will be taken to ensure that all eligible displaced individuals from the seven residential relocations are advised of the rights, benefits, and courses of action available to them.

Business and Nonprofit Organizations

MDOT will offer relocation assistance to displaced businesses and nonprofit organizations as required by statute. MDOT programs that implement the statutory and constitutional requirements of property acquisition and relocation of eligible displacees will be used. Appropriate measures will be taken to ensure that all eligible displaced businesses and nonprofit organizations are advised of the rights, benefits, and courses of action available to them. Displaced businesses and organizations will be encouraged to relocate within the same community.

Purchasing Property

MDOT will pay just compensation for fee purchase or easement use of property required for transportation purposes. “Just compensation” as defined by the courts is the payment of “fair market value” for the property rights acquired plus allowable damages to any remaining property. “Fair market value” is defined as the highest price estimated, in terms of money, the property would bring if offered for sale on the open market by a willing seller, with a reasonable time allowed to find a purchaser, buying with the knowledge of all the uses to which it is adapted and for which it is capable of being used.

⁴² Michigan state laws including Act 31, Michigan P.A. 1970; Act 227, Michigan P.A. 1972; Act 149, Michigan P.A. 1911, as amended; Act 87, Michigan P.A. 1980, as amended; Act 367 Michigan P.A. 2006, as amended; Act 439, Michigan P.A. 2006, as amended. Federal law includes the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Federal Law 91-646), as amended.

Relocation Information

A booklet titled “Your Rights and Benefits” detailing the relocation assistance program can be obtained by written request sent to MDOT, Development Services Division – Real Estate Services Section, P.O. Box 30050, Lansing, MI, 48909, or by calling (517) 335-4363.

Property Acquisition Information

A booklet titled “Public Roads & Private Property” that details private property purchasing can be obtained by written request sent to MDOT, Development Services Division – Real Estate Services Section, P.O. Box 30050, Lansing, MI, 48909, or by calling (517) 335-4363.

4.3.3.4. MITIGATION OF PARK IMPACTS

MDOT consulted with the city of Detroit Parks and Recreation Department, Wayne State University, and Michigan DNR on the affected city parks, Wayne State athletic campus and the Iron Belle Trail. See **Appendix I** for correspondence with the officials with jurisdiction over the affected parks and recreation areas. Based on coordination with the officials with jurisdiction, the following mitigation measures are proposed. The Combined FSEIS and ROD will include final mitigation measures.

Wayne State University Athletic Campus

- MDOT will restore any vegetation disturbed on Wayne State University Athletic Campus property to its current condition, or better, upon completion of construction.
- MDOT will replace any trees removed. If space does not permit for replacements along the service drive, replacement trees can be planted in other areas on WSU campus.
- Should the chain-link fence surrounding the athletic complex be impacted, MDOT will move or replace it.
- Where right-of-way is required, MDOT will maximize space for athletic facilities and minimize green space between the street and sidewalk.
- MDOT will relocate the ground mounted kiosk at the corner of the John C. Lodge Service Drive and Warren Avenue. Where possible, MDOT will maximize sidewalk space in this area.
- During construction, MDOT will maintain access to the recreational facilities.

City of Detroit Parks

- MDOT will restore any vegetation disturbed on city of Detroit park properties to its current condition, or better, upon completion of construction.

Iron Belle Trail

- During construction, MDOT will maintain access on the Iron Belle Trail.

4.4. Environmental Justice and Title VI of the Civil Rights Act of 1964

This section discusses potential impacts of the ASAM design modifications on low-income and minority populations and groups, or “environmental justice” populations. This section also addresses Title VI of the Civil Rights Act.

This topic is discussed in Section 5.1.5 of the 2001 DEIS and Section 1.5.2 of the 2004 FEIS. The conclusion of that study was that the entire Project area is populated by low income and minority populations and the impacts of the Project would be borne by those populations. The study found that, overall, environmental justice populations will be impacted “to the same degree except in areas where specific infrastructure changes are proposed, such as removing a pedestrian bridge.” The evaluations also found that the benefits of infrastructure improvements would serve to “better connect the community, prompt land use development, and facilitate better bus service and transit amenities.

Avoidance, minimization, and mitigation measures proposed to address the impacts of the ASA will create opportunities to develop partnerships necessary to maximize benefits to the affected community as the Project progresses. Efforts to minimize impacts included collaborating with the public/stakeholders throughout the Project to address such issues as noise, air quality, community impacts, aesthetic design (including service roads), and landscaping. The ASA was identified as having the least impacts on environmental justice populations.

The remainder of this section reports on updated demographics and how the ASAM impacts or benefits environmental justice populations.

4.4.1. Methodology and Existing Conditions

4.4.1.1. AUTHORITIES GOVERNING THIS DIRECTIVE

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health or environmental effects, including the interrelated social and economic effects of their programs, policies, and activities on low-income and minority populations.



What is ‘Environmental Justice’?

Environmental justice includes identifying and addressing any disproportionately high and adverse effects of the FHWA's programs, policies, and activities on minority populations and low-income populations. By implementing Executive Order 12898, FHWA achieves an equitable distribution of benefits and burdens. Title VI of the Civil Rights Act of 1964 prohibits discrimination based on race, color, or national origin in any program or activity that receives federal funds.

Other relevant laws, regulations and guidelines include:

- USDOT Order 5610.2(a) (Final USDOT Environmental Justice Order, issued May 2, 2012): Regarding how to address Executive Order 12898.
- Title VI of the Civil Rights Act of 1964: Regarding nondiscrimination requirement.
- Title 23, USC, Section 109(h): Regarding consideration of adverse impacts.
- NEPA: Regarding assessing the environmental effects of federal actions
- Title 49, CFR, Part 21.9(b): Regarding documentation of non-discrimination.
- Title 23, CFR, Part 200.9(b)(4): Regarding state highway agency responsibilities in data collection.
- Federal Uniform Act: Regarding requirements related to relocating residences and businesses.
- MDOT's *Environmental Justice Guidance for Michigan Transportation Plans, Programs and Activities*.⁴³

4.4.1.2. HOW PUBLIC INVOLVEMENT OPPORTUNITIES WERE PROVIDED

MDOT identified communication methods and media to communicate Project planning, design, and environmental impact activities most effectively. MDOT also held more than 100 stakeholder meetings, including meetings with the advisory committees with representatives of neighborhood interests, nine Resident Roundtable meetings in individual neighborhoods, and targeted meetings with groups such as Chadsey Condon Community Organization, the residents of Trumbull Crossing Apartments, transit groups, and business interests. MDOT also appeared on a popular community radio station, the Mildred Gaddis Radio Show to present information and answer questions about the Project. A list of stakeholder meetings is included in **Appendix A**.

A timeline of public involvement since the 2005 ROD is included in **Table 4-3**. Additional information about public involvement is included in **Chapter 7** and **Appendix A**.

Table 4-3: Public Involvement Activities Since 2005 Record of Decision

Date	Public Involvement Activity
Summer 2015	MDOT hosted open house events in Detroit to gather feedback from the public, primarily on ways to improve local connectivity and mobility.
Summer 2016	MDOT held workshops with the city of Detroit planning and development and engineering departments. Together they reviewed the planning department's vision for neighborhood mobility and connectivity and looked for possible modifications to help support that vision. Using the public and city input, MDOT modified the plans to improve connectivity and better utilize existing surface roads without expanding the freeway footprint to minimize relocations.
Fall 2016	The proposed modifications were presented for public input at MDOT open house Resident Roundtable meetings held in neighborhoods around the Project.
2017	In response to public feedback from the fall 2016 open house Resident Roundtable meetings, MDOT and the city of Detroit held another round of Resident Roundtable meetings to discuss additional proposed design modifications to address public concerns.

⁴³ MDOT. (2011, January). *Environmental Justice Guidance for Michigan Transportation Plans, Programs and Activities*. Michigan Department of Transportation.

Date	Public Involvement Activity
Fall 2018	MDOT hosted four public open house style meetings to provide an update and seek input on the design and environmental review process and potential impacts to historic and public park resources.
Spring 2019	MDOT hosted a special meeting with residents of Trumbull Crossing Apartments, located in the northwest quadrant of I-94/M-10 interchange. This meeting was held to gather input on whether to connect the service drive through the property or to leave the frontage road as is (no action). Public comment gathered on both options confirmed the no action option would best meet affected resident's needs. See meeting summary in Appendix A .

MDOT will continue to gather input and provide updates to the community during the preparation of this Supplemental Environmental Impact Statement (SEIS). MDOT will hold a public hearing to receive comments on the published Draft Supplemental Environmental Impact Statement (DSEIS) and the Project. See **Chapter 7** for more details about public participation.

MDOT also uses social media to share information, notify people of meetings and solicit comments.

MDOT also seeks to engage the elderly and persons with disabilities and persons with limited English-speaking proficiency (LEP populations). The Spring/Summer 2018 Project Newsletter, which MDOT sends to residents and businesses within a ¼ mile of the Project, had a separate Spanish language version. All meeting places were neighborhood based and handicapped accessible. Also, each meeting announcement provided an opportunity to request translators for non-English speakers and the disabled. Meeting advertising was nontechnical and reader-friendly and distributed to community leaders and outlets that could share the information at a neighborhood/community level.

4.4.1.3. HOW POPULATIONS OF CONCERN WERE IDENTIFIED

As identified in the 2004 FEIS, because the entire corridor has high environmental justice populations, it can be expected that any adverse effects will be considered disproportionately high for affected populations. MDOT's guidance⁴⁴ on disproportionate effects was then used to evaluate effects on environmental justice populations (see **Section 4.4.2.1**).

Populations of concern were identified by updating the population figures (see **Appendix C**) and by implementing a public involvement plan (see **Appendix A**), which included efforts to reach out to communities along I-94, M-10 and I-75 within the Project limits (see **Section 4.4.1.2**).

Areas within the existing transportation right-of-way, such as areas underneath bridges, may be occupied by transient individuals. Given the temporary nature, the number and locations of these dwellings varies over time.

4.4.2. Effects on Minority and Low-Income Populations

Social and environmental effects on the affected communities will be borne by the populations within the Project limits, which are more than 90% nonwhite and 51% low-income (below the poverty level). The ASAM will remove and/or reconstruct bridges within the Project limits, which will require the removal of transient dwellings that may be present at the time of construction.

⁴⁴ Michigan Department of Transportation. January 2011.

Impacts of most concern that MDOT identified through its public outreach include relocations and other right-of-way impacts, and loss of community connectivity. A desire to improve mobility was a common theme at public meetings; as was construction traffic. Another concern that was often expressed is the question of how to gain employment in the construction of the proposed improvements. MDOT hosted a Workforce Development station at each public meeting where stakeholders could find information about employment opportunities on the Project and on other MDOT projects.

The ASAM design minimizes and/or avoids many of the impacts of the ASA. The ASAM will acquire seven residential properties and 20 business properties, a reduction of nine residential relocations and four business relocations, compared to the 2004 FEIS. The ASA proposed replacing the existing pedestrian bridges over the freeway with upgraded bridges that would span the service drives to eliminate conflicts between pedestrians and vehicles. While the ASA design resulted in an improved safety benefit by eliminating the conflicts between vehicles and pedestrians, the upgraded bridges required the construction of long ramps that meet design requirements of the American's with Disabilities Act (ADA) to access the pedestrian bridge over the service drives and freeway. These ramps require additional property impacts and result in increased travel for non-motorized users to get across the freeway. The ASAM instead proposes Complete Streets bridges, which provide direct access across the freeway for all users (vehicles, bicycles, and pedestrians). The ASAM Complete Streets bridges do not require large ramps to be constructed and therefore avoid additional property impacts and the direct access across the freeway reduces travel distance and time for non-motorized users. However, the ASAM Complete Streets bridges will reintroduce potential conflicts between vehicles and pedestrians across the service drives.

Other features of the ASAM responding to public input include removing continuous service drives by repurposing the existing service drive network to two-way local street connectors and retaining and adding bridge connections across the freeway. Trumbull Crossing Apartment residents opted to minimize right-of-way impacts by keeping the current alignment, which is a cul-de-sac of the service drive at the M-10 interchange. Local circulation will continue be supplied via Elijah McCoy Drive, which functions well. Most comments received during the Project public outreach events included positive reactions to the reduced impacts, improved connectivity, and multimodal features of the ASAM, compared to the ASA. The modifications of the ASAM are illustrated in **Figure 3-10** through **Figure 3-12**.

As discussed in **Section 4.16.1.1** there will be traffic impacts during construction, which can be expected to affect businesses and residents in the Project limits.

4.4.2.1. DETERMINATION OF DISPROPORTIONATELY HIGH AND ADVERSE EFFECTS ON MINORITY AND LOW-INCOME POPULATIONS

The 2004 FEIS found that based on the impacts of the ASA, the minority and low-income population in the Project limits will experience disproportionately high and adverse environmental effects and that the proposed Project should only be carried out if further mitigation measures or alternatives reducing the disproportionately high and adverse effects are not practicable. The ASAM has further reduced the reported impacts to relocations, and enhanced community cohesiveness, mobility, and circulation.

Other alternatives considered, including the No-Build Alternative, were dismissed, as reported in **Chapter 3**.

Of the studied alternatives, the ASAM impacts on environmental justice populations least; it improves the ASA design to address public concerns about relocations, safety, mobility, local connectivity, and accommodating nonmotorized transportation and transit. Because the ASAM was designed to reduce impacts in specific areas, and the population continues to be primarily low-income and minority, it is expected that the benefits and impacts on low-income and minority populations within the Project limits will be similar to the population as a whole.

Table 4-4 updates the 2004 FEIS findings based on the ASAM.

Table 4-4: Summary of Impacts of Noted Concern to Environmental Justice Populations

Topic	Effects and Comparison Between ASA and ASAM
Pedestrian and bicycle access and mobility (Nonmotorized transportation)	The Project improves east-west access along the corridor, north-south access across the corridor, and enhances pedestrian/bicyclist environment. The concern of the inconvenience and lack of cohesiveness of the ASA's pedestrian bridges is improved by the inclusion of Complete Streets crossings on nearby bridges or the replacement of pedestrian bridges with Complete Streets bridges. The ASAM retains several bridges eliminated with the ASA. See Table 3-3.
Pedestrian safety	Under the ASA, pedestrians would cross over I-94 on improved pedestrian-only bridges that span over both I-94 and the service drives. Pedestrians using the bridges would thereby avoid conflicts with cars on the service drives. This type of bridge requires more right-of-way (see Figure 3-5). Under the ASAM's Complete Streets concept (see Figure 3-4 and Figure 3-6) the bridge does not span the service drives; similar to the present condition. While the ASAM design requires less right-of-way and a shorter path across the freeway for non-motorized users, it maintains a similar potential conflict between pedestrian and vehicular traffic as the present condition. To increase safety, crosswalks will be provided at stop-controlled intersections between the Complete Streets bridges and the service drives.
Air quality	The Project will not contribute to a violation of the carbon monoxide (CO) or particulate matter (PM_{2.5}) National Ambient Air Quality Standards. The U.S. Environmental Protection Agency (EPA) sets standards based on health risks to at-risk populations.
Water quality	Water quality impacts are mitigated through implementation of stormwater management features that will be incorporated into the Project design.
Noise	The updated analysis of the ASAM shows the need for one barrier in the northeast quadrant of the I-94/M-10 interchange. The ASAM requires fewer noise barriers than the ASA. Barriers are indicated where appropriate, effective and consistent with FHWA and MDOT policies and procedures. The Project increases noise during construction that will be minimized by implementation of mitigation measures.
Contamination	Fifteen of the 49 properties with potential contamination identified in the 2004 FEIS are no longer properties for potential environmental contamination concern under the ASAM. Thirty-four properties still carry the potential for being contaminated. MDOT will test the high and medium risk areas during right-of-way acquisition. A Due Care Plan will be implemented to address needs for worker safety, proper disposal of contaminated soil and sediment if present, and prescribe steps to prevent exacerbation of contamination
Aesthetic and visual impacts	Since the 2004 FEIS, MDOT adopted the I-94 Rehabilitation Project Corridor Design Guidelines. These guidelines have been implemented on the advanced phases of the Project and will continue to be followed for the ASAM.
Relocations	The ASAM reduced the number of residential relocations from 18 to seven and the number of business relocations from 24 to 20. MDOT will inform individuals and businesses of any impact to their property and will provide acquisition and relocation assistance and advisory services.
Traffic	Similar to the ASA, the ASAM traffic disruption during construction will be minimized to the extent possible. A public awareness and information program will inform residents, businesses, trucking companies and other travelers about the I-94 construction schedules, ramp closings, alternative routes, and other matters affecting travel in and through the area. MDOT will implement Active Transportation and Demand Management (ATDM) (see Section 4.16.1).

Topic	Effects and Comparison Between ASA and ASAM
Opportunities for public participation and involvement in decision-making	MDOT implemented a new Project public involvement plan to seek input from affected individuals, groups, and stakeholders at the neighborhood level. Over 100 meetings were held in the neighborhoods (see Chapter 2). The ASAM responds to received public input to reduce Project impacts. Public hearings will be held on the DSEIS in locations accessible by the affected neighborhoods.
Transit	During construction, transit service may be impacted by temporary closures or detours along transit routes. Construction impacts are temporary in nature but could cause delays for transit riders or their bus stop may be temporarily moved. The effects will be the same under the ASA or ASAM. MDOT will initiate early coordination with SMART and DDOT to communicate potential closures or major changes in the maintenance of traffic and detours.
Community cohesion	Based on community input on the ASA, MDOT developed the ASAM to reduce community impacts. MDOT has retained several bridges that were proposed to be removed in the ASA. The proposed Complete Streets bridges that replace the pedestrian-only bridges from the ASA provide improved, direct access, across the freeways and will serve all users. The conversion of the existing service drives from one-way traffic flow to two-way traffic flow improves circulation and connectivity between neighborhoods adjacent to and across the freeway corridor. The additional service drive connections at select locations also improve connectivity and circulation between neighborhoods.

4.4.3. Mitigation of Impacts to Environmental Justice and Title VI Populations

The ASAM responds to comments on the ASA to minimize and mitigate potential adverse effects on environmental justice/Title VI populations. MDOT developed a CSRП outlining the expected relocations, the availability of replacement residential and business properties, and relocation assistance as defined in the plan. The CSRП will be updated, if necessary, for the Combined FSEIS and ROD. More mitigation measures may be developed, if additional impacts are identified during ongoing outreach activities throughout final design and construction.

MDOT will require the contractor to coordinate with the city of Detroit Department of Human Service, the Michigan Department of Community Health, and the local police authority in advance of removing any transient dwellings. In addition, transient individuals will be notified in advance and provided the opportunity to clear their belongings prior to the removal of dwellings within the construction area. During final design, MDOT will also explore methods for cooperating with local shelters and other community services to provide alternate housing for transient individuals. Other mitigation measures will also be implemented as reported in **Chapter 6** that will benefit environmental justice/Title VI populations.

To minimize impacts to businesses and residents during construction, disruption of traffic in the construction area will be minimized to the extent possible. A public awareness and information program will inform residents, businesses, trucking companies and other travelers about the I-94 construction schedules, ramp closings, alternative routes, and other matters affecting travel in and through the area. MDOT will implement Active Transportation and Demand Management (ATDM) strategies and will work with transit providers to add transit service to help alleviate congestion and improve safety.

4.5. Economic Environment

4.5.1. Existing Economy

This section discusses the current state of economic development in the Detroit Metro Region. Economic conditions were discussed in Section 5.2 of the 2004 FEIS. The following information provides updated information related to the labor force, unemployment, primary employment industries, and employment districts in the Project limits.

4.5.1.1. LABOR FORCE

In 2016, the study area contained 25,482 jobs. Less than half (49%) of the population 16 years and older in the study area were in the labor force, compared with 54% in all of Detroit, 59% in Wayne County, and 61% in Michigan. The unemployment rate was 21% in the study area, which was comparable to the overall Detroit unemployment rate of 22%. Wayne County and the state of Michigan had lower unemployment rates at 13% and 8%, respectively.

This information averages data from 2012-2016; therefore, unemployment figures associated with the lingering effects of the Great Recession are included. Given the extensive redevelopment activity taking place within the city (see **Section 4.17** and **Section 4.18**), these figures may not fully represent the current economic environment of the study area.

In June 2016, for example, the Bureau of Labor Statistics (BLS) reported Detroit's unemployment rate at 11.1% – a considerable deviation from the 2012-2016 estimated unemployment rate of 22%.⁴⁵ According to the most recent BLS data, Detroit's unemployment rate has fallen even further, standing at 9.3% in June 2018.

While BLS data is not available specifically for the study area, the economic trend for the city overall may be a good indicator that the study area's 2012-2016 unemployment rate of 21% has also fallen substantially.

Table 4-5 compares labor force statistics in the demographic study area with those in Detroit, Wayne County and the state.

Table 4-5: Labor Force (2016)

Characteristics	Demographic Study Area	City of Detroit	Wayne County	State of Michigan
Population 16 years and older	51,661	530,855	1,389,694	7,953,581
In labor force	25,482	284,185	817,120	4,866,369
Civilian labor force	25,482	284,125	816,785	4,862,651
Unemployed	5,311	62,927	106,127	412,934
Armed force	0	60	335	3,718

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

⁴⁵ Bureau of Labor Statistics. (2018). Unemployment Rate: Detroit city, MI (U). U.S. Department of Labor. Retrieved from <https://beta.bls.gov/dataViewer/view/timeseries/LAUCT262200000000003>.

4.5.1.2. EMPLOYMENT BY INDUSTRY

The following industries comprise the top employment areas for workers in the study area:

- Educational services, health care and social assistance: 6,835 jobs, or almost 34% of total employment.
- Arts, entertainment, and recreation, and accommodation and food services: 2,830 workers, or about 14% of total employment.
- Manufacturing: 2,182 jobs, or 10.8% of total employment.
- Retail trade and professional, scientific, and management, and administrative and waste management services: 2,029 jobs, or about 10% of total employment.

Table 4-6 shows by industry the study area employment statistics, which are generally consistent with notable industries from the 2004 FEIS.

Table 4-6: Employment by Industrial Class in the Study Area (2016)

Characteristics	Employment	Percent
Civilian employed population 16 years and over	20,171	100%
Agriculture, forestry, fishing and hunting, and mining	102	0.5%
Construction	385	1.9%
Manufacturing	2,182	10.8%
Wholesale trade	153	0.8%
Retail trade	2,096	10.4%
Transportation and warehousing, and utilities	840	4.2%
Information	200	1.0%
Finance and insurance, and real estate and rental and leasing	881	4.4%
Professional, scientific, and management; administrative and waste management services	2,029	10.0%
Educational services, and health care and social assistance	6,835	33.9%
Arts, entertainment, and recreation, and accommodation and food services	2,830	14.0%
Other services, except public administration	1,014	5.0%
Public administration	624	3.1%

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

4.5.1.3. EMPLOYMENT DISTRICTS

Redevelopment, renovations and new construction of commercial and industrial projects have been on the rise (see **Sections 4.17** and **4.18**). In 2012, Detroit Future City, a nonprofit organization, created the *2012 Detroit Strategic Framework* (Strategic Framework) to establish a community vision for Detroit's future. The Strategic Framework addresses economic growth and highlights seven primary employment districts currently in Detroit. While specific employment districts were not identified in the 2004 FEIS, they are worth noting here because three of the seven

4.5. Economic Environment

employment districts overlap with the demographic study area: Midtown, Dequindre/Eastern Market, and Mt. Elliott. Each district within the study area covers a distinct set of employment opportunities.⁴⁶

The Midtown employment district between M-10 and I-75, and including the Midtown and New Center neighborhoods, is aligned with educational, health care and creative industries. Anchor institutions include Wayne State University, Henry Ford Health System, Detroit Medical Center, and the College for Creative Studies. SEMCOG identified Midtown as an “employment hot spot,” having among the highest employment densities in Southeast Michigan at 43.43 to 116.57 jobs per acre.⁴⁷

The Dequindre/Eastern Market employment district, extending on either side of I-94 between I-75 and the General Motors (GM) Detroit-Hamtramck Assembly plant, is a food-industry-focused employment area. In addition to numerous food establishments, anchor institutions related to the food industry in the study area include Eastern Market and PepsiCo.⁴⁸

The Mt. Elliott employment district, located north of I-94 and expanding northeasterly from the GM Detroit-Hamtramck Assembly plant, drives the manufacturing industry in the study area. Anchor institutions for manufacturing in the study area include: GM Detroit Hamtramck Assembly Plant, I-94 Industrial Park, Chrysler Tool & Die, and Chrysler Axle. The Mt. Elliott area is also classified as a Development District by the Detroit Economic Development Corporation (DEGC). DEGC works to support and promote efforts in Mt. Elliott that will improve Detroit’s role as a hub for advanced manufacturing and innovative automotive production, research, and employment.⁴⁹

The *Detroit Future City Strategic Framework* stresses that continued efforts to strengthen and enhance these employment districts are imperative to the future economic success of Detroit.⁵⁰

4.5.1.4. ECONOMIC DEVELOPMENT PROJECTS

The city is actively working to improve Detroit through major redevelopment projects and neighborhood revitalization efforts. Within the study area, the highest concentration of current and planned redevelopment efforts is taking place in and around the Midtown, New Center and TechTown neighborhoods, located north of I-94 between M-10 and I-75. Mixed-use commercial/residential developments in New Center include number of projects including The Boulevard and phases I and II of Baltimore Station. Combined, these two developments will add over 390 apartment units to the New Center area. Other major redevelopment projects in the New Center area include a new Detroit Pistons’ training facility, Henry Ford Hospital’s six-story Cancer Institute development (the Brigitte Harris Cancer Pavilion), and \$100 million worth of renovations to the Albert Kahn and the Fisher buildings.⁵¹

⁴⁶ Detroit Future City. (2012). 2012 Detroit Strategic Framework Plan. Detroit. Retrieved from https://detroitfuturecity.com/wp-content/uploads/2017/07/DFC_Full_2nd.pdf.

⁴⁷ SEMCOG. (2017). Employment Density. Retrieved June 2018, from Southeast Michigan Council of Governments: <https://maps.semcog.org/EmploymentDensity/>.

⁴⁸ Detroit Future City. (2012).

⁴⁹ Detroit Economic Growth Corporation. (2017). Mt. Elliott. Retrieved June 2018 from Detroit Economic Growth Corporation: <http://www.degc.org/why-detroit/real-estate/development-districts/mt-elliott/>.

⁵⁰ Detroit Future City. (2012).

⁵¹ Detroit Regional Chamber. (2018). Detroit Investment Map. Retrieved June 2018, from Detroit Regional Chamber: <http://www.detroitchamber.com/destinationdetroit/detroit-investment-map/>.

4.5. Economic Environment

The Midtown and Wayne State University area, located south of I-94 between M-10 and I-75, is also experiencing new residential and mixed-use construction. Anthony Wayne Drive Apartments will provide beds for approximately 800 students, while Sugar Hill Apartments and the Woodward at Midtown will offer nearly 200 apartment units in mixed-use developments. Additionally, a newly constructed West Elm Hotel, with 120 rooms, is planned for development in Midtown by 2020.⁵²

While development, redevelopment and renovation of existing spaces are rapidly being proposed and implemented in the Midtown neighborhoods, other parts within the Project limits are not developing as rapidly. The renovation of the Packard Plant administration building, just south of I-94 and east of Mt. Elliott Street, is one important redevelopment project currently underway in the Gratiot Town/Kettering neighborhood. The large, iconic, and deteriorating space will be redeveloped into a mixed-use area with planned commercial uses in the near future such as a brewery and a grocery store, as well as plans for residential development over the long-term.⁵³

4.5.1.5. EMPOWERMENT ZONES AND OTHER INCENTIVES

The study area overlaps with several segments of Detroit's Empowerment Zone (EZ). Empowerment Zones are federally designated areas, which are eligible to receive federal assistance in the form of tax breaks and other incentives to attract business and to assist with community revitalization efforts. Detroit's EZ tax incentives include wage credits, work opportunity tax credits, welfare to work credits, environmental clean-up tax deductions, and facility bonds.⁵⁴

The city is now becoming attractive to investors and many Michigan Economic Development Corporation (MEDC) programs are being implemented within Metro Detroit. MEDC supports Detroit's "economic revival" through efforts/programs that are designed to attract businesses and private investments and fostering a positive perception about Detroit. MEDC has a brownfield tax increment financing program <https://www.michiganbusiness.org/reports-data/brownfield-tax-increment-financing-projects/>, business development program <https://www.michiganbusiness.org/reports-data/michigan-business-development-program-projects/>, Community Revitalization Program <https://www.michiganbusiness.org/reports-data/michigan-community-revitalization-program-projects/> and Minority Bank Deposit Program (MBDP) and Michigan Community Revitalization Program (MCRP) Loan programs.

Since January 2014, Detroit has been implementing their Detroit Demolition Program and lots that once held blighted structures are now vacant.⁵⁵ The properties are sold by the Detroit Land Bank through an Own it Now Program, Auction Program and Side Lot Program. Most of these demolitions are funded through the federal Hardest Hit Funds, which only can be used in certain federally approved areas of the city. All lands adjacent to I-94 from I-96 to Conner Avenue are included.⁵⁶

⁵² Detroit Regional Chamber. (2018).

⁵³ Williams, C. (2018, March 1). A year into revival efforts, Packard Plant cleans up. Retrieved June 2018, from The Detroit News: <https://www.detroitnews.com/story/news/local/detroit-city/2018/03/01/detroit-packard-plant-renovation/110956012/>.

⁵⁴ City of Detroit. (2018). Business Tax Incentives. Retrieved June 2018, from City of Detroit: <http://www.detroitmi.gov/How-Do-I-Obtain-Grant-Information/Business-Tax-Incentives>.

⁵⁵ Detroit Building Authority. Detroit Demolition Program. Retrieved from <http://www.detroitmi.gov/demolition>.

⁵⁶ City of Detroit. Hardest Hit Fund Areas. HHF4 Proposed Expansion.pdf. Retrieved from <http://www.detroitmi.gov/Portals/0/docs/Demolition/HHF4%20Proposed%20Expansion.pdf>.

4.5.2. Impacts to the Economy

Projects, incentives, and transportation improvements including improvements completed in the advanced phases of the Project, contribute to positive growth in the I-94 corridor. The ASAM enhances access to businesses in the Project limits due to improvements to the service drives and safer design of the on and off-ramps. This improved access will result in indirect land use impacts discussed in **Section 4.17**. In addition, construction of the Project improvements will add jobs and associated expenditures in the local economy.

The ASAM acquires property and relocates residents and businesses as documented in the CSRP in **Appendix E**. The estimated numbers of residential and non-residential properties that will be displaced are discussed in **Section 4.3.2.2**. Twenty businesses will be displaced including a car salvage operation, manufacturing and warehousing facilities, an auto parts supplier, metal recycling plant, automotive manufacturer, a grocery, an event production company, an insurance company, and a utility contractor. The ASAM impacts approximately 16 billboards.

Employment losses associated with the displaced businesses will be largely dependent on the interest of these enterprises to relocate to other properties within the Project vicinity. A review of the local commercial real estate market indicates that there are enough replacement sites available to relocate eligible displaced businesses (see **Appendix E**). Displacement of these businesses is not expected to have a major economic or otherwise generally disruptive effect on the community impacted by the Project. A more detailed assessment of the business relocations – and the job losses associated with them – will be undertaken during the subsequent design phase of the Project.

Property tax revenues will be reduced slightly because of right-of-way acquisitions for the ASAM. It is expected that as the area redevelops, property tax revenues will be regenerated.

4.5.3. Mitigation of Impacts to Economic Conditions

Section 5.2.3 of the 2001 DEIS discussed mitigation in detail. The business properties displaced because of the ASAM will be acquired in conformance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Federal Law 91-646). Businesses and nonprofit organizations are eligible for actual reasonable moving costs and related expenses. Displaced businesses may choose to relocate within the area to take advantage of tax advantages associated with the Empowerment Zones and other incentives.⁵⁷ In addition, during final design, MDOT will contact local businesses and appropriate mitigation will be developed to assist businesses during and after construction.

4.6. Land Use

4.6.1. Existing Land Use Conditions

This section discusses updates and analysis of current existing land use and development patterns. Existing and planned land uses were covered in the 2004 FEIS Section 5.3; current land use patterns are consistent with the land use described in the 2004 FEIS. **Table 4-7** presents the composition of existing land use types in the land use study area shown in **Figure 4-1**. Due in large part to the presence of freeways including I-94, M-10 and I-75, the most prevalent land use category in the study area is Transportation/Communication/Utilities (TCU). Concentrated areas of residential, institutional, and commercial land uses are scattered along these major corridors.

⁵⁷ City of Detroit. (2018). <http://www.detroitmi.gov/How-Do-I-Obtain-Grant-Information/Business-Tax-Incentives>.

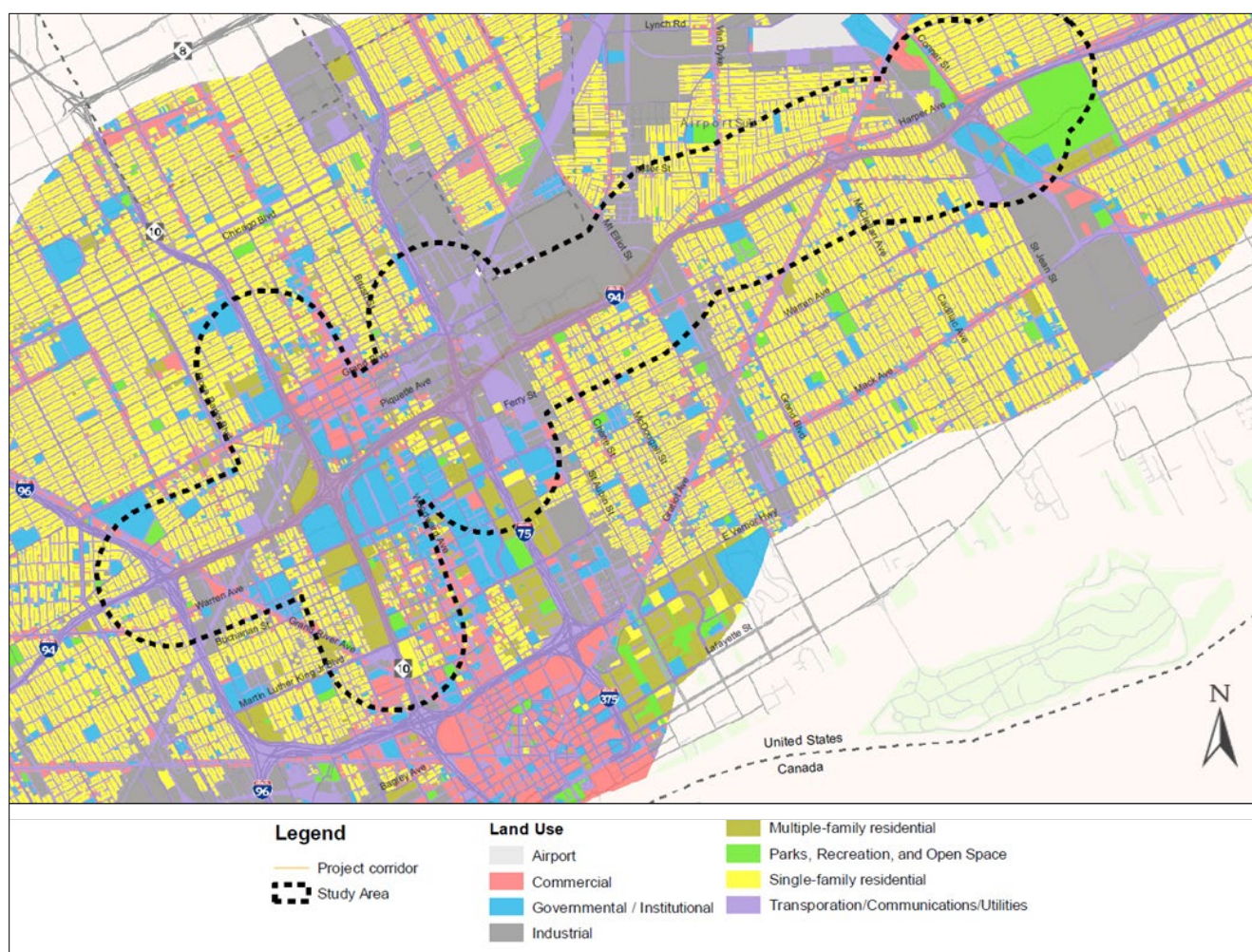
4.6. Land Use

Table 4-7: Existing Land Use (2015)

Land Use	Approximate Number of Acres	Percent of Total
TCU	2,487	36%
Residential	2,056	30%
Industrial	966	14%
Governmental/institutional	965	11%
Commercial	416	6%
Parks, Recreation and Open Space	240	3%
Total acreage within land use study area	6,292	100%

Source: City of Detroit, 2015

Figure 4-1: Existing Land Uses (2018)



Source: City of Detroit and HNTB Corporation, 2018.

4.6. Land Use

Land use from the western limits of the land use study area to M-10, a north-south freeway extending from downtown Detroit through the study area, is primarily residential and includes the historic Woodbridge Neighborhood. A concentration of industrial land use is found along the CN/CRSA Railroad. Commercial land use is located primarily along Grand River Avenue. Commercial corridors in this portion of the study area include Woodward Avenue and Cass Avenue, running north and south, and W. Grand Boulevard, running east and west.

Notable institutional land uses in this portion of the land use study area include Henry Ford Hospital, located to the north of I-94, and Wayne State University, which is located to south of I-94 and extends to both the western and eastern sides of M-10, and Wayne County Community College near the Conner Avenue interchange. Within the land use study area, the land between M-10 and I-75, which includes the Midtown, New Center and TechTown neighborhoods, has the highest concentration of institutional land uses in the land use study area. Wayne State University, several museums, and the Children's Hospital of Michigan are among the notable institutions in this portion of the land use study area.

Along I-94 between I-75 and Mt. Elliott Street, north of I-94, the land use is almost entirely industrial. The GM Detroit-Hamtramck Assembly plant occupies most of this area, along with other industrial facilities and limited commercial locations. In this same section, south of I-94, the land use is primarily residential. East of Mt. Elliott Street, both north and south of I-94, the land use is also predominantly residential. Industrial land uses can be found clustered along the Conrail Railroad, including the former Packard Plant. Most of the commercial land uses in this portion of the land use study area can be found along Gratiot Avenue and Harper Avenue. Wayne County Community College and Chandler Park are both located at the east end of the study area, south of I-94.

4.6.2. Planned Land Use

Land use planning is carried out at the local level and several local planning documents speak to community goals and visions for future land use and development. Detroit's Planning and Development Department sets planning and design standards based on three Design Regions – West, Central and East. The study area is primarily located within the Central Design Region, with a small portion extending into the East Design Region. The goals of these regions are to achieve neighborhood stabilization and revitalization, and to support the growth of population and jobs.

The entire study area is located within Detroit city limits and covered under the city of Detroit Master Plan of Policies as adopted in July 2009. Detroit's *Master Plan of Policies* is a visionary document that offers long-term goals to guide development within the city.⁵⁸ Goals related to zoning and land use include: Alleviate land use conflicts; Provide flexible guidelines to accommodate diverse land uses; and encourage desirable development through incentives. The city zoning ordinance implements the *Master Plan of Policies*.

In 2012, Detroit Future City, a nonprofit organization, created the *2012 Detroit Strategic Framework* (Strategic Framework) to establish a community vision for Detroit's future.⁵⁹ The Strategic Framework was created in partnership with the city of Detroit and through city-wide public engagement efforts. The Strategic Framework is comprised of six Planning Elements: Economic Growth; Land Use; City Systems; Neighborhoods; Land and Building Assets; and Civic Capacity. **Figure 4-2** shows the 50-year land use vision for Detroit as adopted in the Land Use Element of the Strategic Framework. The Project limits, overlaid on the future land use map shows how it cuts across a wide variety of planned land use types including general industrial, urban farming and food production,

⁵⁸ City of Detroit. (2009). Master Plan of Policies. Detroit. Retrieved from <http://www.detroitmi.gov/Portals/0/docs/Planning/Master%20Plan%20Text.pdf>.

⁵⁹ Detroit Future City. (2012).

4.6. Land Use

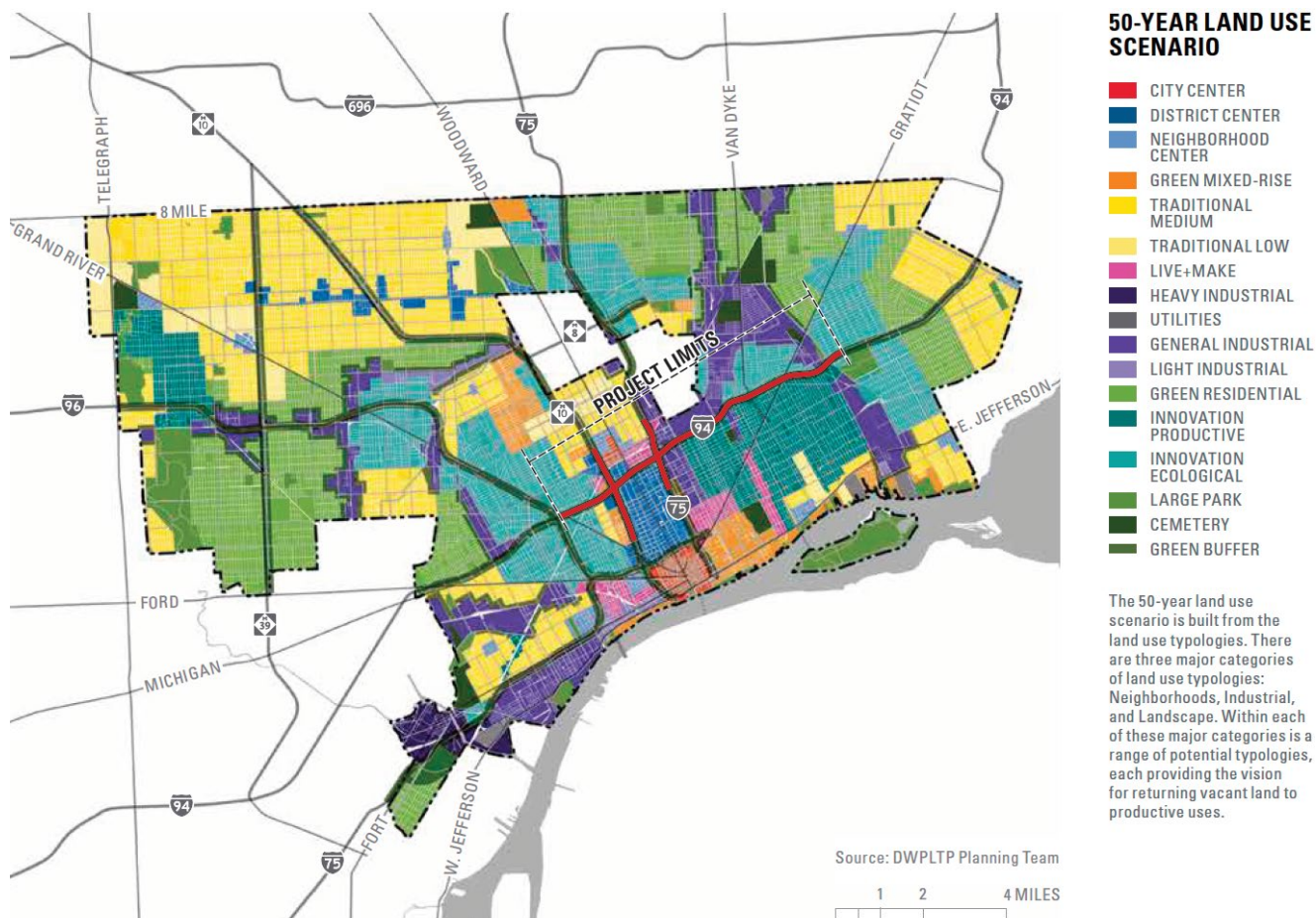
neighborhood centers and a small amount of traditional residential and parkland. To achieve this vision, the Land Use Element calls for creating a city that has multiple employment districts, connects people to opportunity, has landscapes that contribute to health, and is comprised of distinct, attractive neighborhoods.

The Land Use Element points to a high level of underutilized land within the city, noting that approximately 20 square miles of Detroit's occupiable land area is vacant. Within the study area, the 50-year land use vision calls for converting much of the land west of I-75, currently zoned for residential land use, to an "innovation productive" land use. The innovation productive land use is intended to put vacant land to productive use, with a focus on urban farming and food production. The Land Use Element also addresses the community's desire to revitalize transportation corridors, enhance street design, and to use the Complete Streets framework to better connect various neighborhoods and land uses.⁶⁰ This desire to improve connectivity was a common theme presented to MDOT by various stakeholders during the planning process.

As of 2018, land use development in the Midtown, New Center, and Tech Town neighborhoods is rapidly changing as numerous mixed-use developments have been constructed recently, are under construction or are planned. More so than new construction/infill projects, the focus of this development has been on redevelopment and renovation of existing abandoned or underutilized spaces catering to young professionals.

⁶⁰ Detroit Future City. (2012).

Figure 4-2: City of Detroit Proposed 50-Year Land Use Scenario Map



Source: Detroit Future City (2012), *The Land Use Element: The Image of the City*, p119

4.6.3. Impacts to Land Use

To design the Project compatibly with local land use plans and policies, MDOT coordinated with City Planning Department staff who provided input on Project design elements. The Project is consistent with the goals and visions of future land use as identified in local planning documents because it modernizes I-94 to improve operations and safety, mobility and connectivity, which supports the existing, planned and proposed land use development.

4.7. Aesthetics and Visual Resources

4.7.1. Existing Visual Resource Conditions

The Project area's visual character, viewers, viewsheds, and landscape units do not vary substantially from that reported in the 2001 DEIS. The six visually distinct landscape elements described in Section 5.4 1 of the 2001 DEIS are described as transportation, historic, institutional, industrial, residential, and mixed use.

4.7. Aesthetics and Visual Resources

Since January 2014, Detroit has been implementing their *Detroit Demolition Program* and lots that once held blighted structures are now vacant.⁶¹ The demolitions, which include primarily residential structures, have changed the visual character of neighborhoods from a landscape marked by several blighted houses to scattered remaining houses with sometimes large areas of open spaces where houses once stood.

In 2010, MDOT adopted the *I-94 Rehabilitation Project Corridor Design Guidelines*.⁶² The intent of this document is to “create a well-designed reconstructed I-94 Corridor that reflects the city of Detroit’s world-shaping transportation legacy and enhances the lives of residents and travelers by improving their mobility and safety thereby providing a sense of well-being and community. Goal 3 of the guidelines is to “create a positive visual experience for both residents and travelers through the innovative use of high quality and affordable materials and providing landscaping in areas such as the Woodbridge Historic District and along the Service Drives.”

The *I-94 Rehabilitation Project Corridor Design Guidelines* have been used to direct the aesthetic treatment of advanced bridges and will continue to be implemented for bridges, retaining walls and noise walls. These guidelines prescribe patterns to be cast on both sides of noise walls, on bridge abutments, piers, interchange ramp piers. There are also guidelines for lighting fixtures and railings. The guidelines present three alternative design “families”: Fin, Classical Arch, and Barrel Arch, which have in common pedestrian lighting fixtures and railings. The guidelines also provide color palettes and conceptual landscape designs.

During final design, MDOT will coordinate with adjacent stakeholders to select each element based on specific site conditions (see **Figure 4-3**).

⁶¹ Detroit Building Authority. Detroit Demolition Program. (February 2019).

⁶² Michigan Department of Transportation. I-94 Rehabilitation Project Corridor Design Guidelines. 2010.

Figure 4-3: Trumbull Avenue Bridge Aesthetic Treatment



Application of the Barrel Arch Family design alternative with the Constellation pattern on the abutments of the Trumbull Avenue bridge, which was completed in 2016. The decorative railing shows the wire fabric infill material.

In the *I-94 Rehabilitation Project Corridor Design Guidelines*, some of the bridge locations were designated as “Community Connectors” or “Neighborhood Connectors.” These bridges connect local streets and have commercial or civic/neighborhood zones at the ends of the bridges. These bridges are intended to have more intensive landscaping and public art to highlight community gateways and soften the transition between the freeway and residential and commercial areas. Conceptual landscape prototypes are also in place to guide slope plantings, median plantings, and boulevard trees.

4.7.2. Impacts to Aesthetics and Visual Resources

MDOT is continuing the ASAM design using the *I-94 Rehabilitation Project Corridor Design Guidelines*. The aesthetic improvements will improve the existing aesthetics of the I-94 infrastructure, which currently has minimal to no decorative features. **Figure 3-3** shows cross-sections of the ASAM.

The design details of the reconstructed interchanges have also been further refined since the 2005 ROD. Visual changes will be evident to local motorists and to travelers through the interchanges.

4.7.3. Impacts to Landscape Units

A study of the various “landscape units” present in the corridor revealed that the defining characteristic of the corridor is the freeway itself and that there is little viewshed outside of the right-of-way. Changes in the roadway cross-section will provide motorists with an improved setting, which is beneficial from aesthetic standpoint.

Other landscapes present include residential and historic landscapes, where the loss of grassed slopes and addition of retaining walls will change views by removing planting space and buffers. Existing views of the residential areas will remain, the roadway and interchange improvements will make the transportation landscape more prominent.

Institutional areas exist near the I-94/M-10 interchange (Wayne State University) and on the eastern Project limits (Wayne County Community College). Changes at M-10 will not substantially alter views. At Conner Avenue however, the ASAM provides details for a new crossing of the Iron Belle Trail adjacent to Wayne County Community College. The structural elements and the realignment of the trail on campus provide opportunities for landscaping and aesthetic treatments.

The corridor also supports a substantial industrial landscape. Retaining walls will screen some views of these areas. Where provided in final design, a combination of walls and landscaping may offset the industrial setting. Walls will be designed sensitively.

A mixed-use landscape unit was also identified in the 2004 FEIS. This included the area east of Gratiot Avenue. Walls were identified as reducing the incongruous nature of the area. The 2004 FEIS suggests that where design opportunities provide for the inclusion of plantings, it will have a positive impact.

4.7.4. Mitigation of Impacts to Aesthetics and Visual Resources

Several of the mitigation measures adopted in the 2005 ROD for the Project have been satisfied in the development of the ASAM. Section 7.7 of the 2004 FEIS discusses the various measures taken prior to the 2005 ROD including “Mitigation Day”, a public outreach effort designed to establish a framework for community inclusion and to communicate the technical and aesthetic issues related to the Project. Inclusive and hands-on Context Sensitive Solutions Workshops were held in 2004 to generate ideas to guide future design decisions. Context Sensitive Solutions (CSS) is a collaborative interdisciplinary approach to developing transportation projects. Under CSS, MDOT solicits dialogue with local governments, road commissions, local stakeholders, industry groups, land use advocates, and state agencies early in a project's planning phase. The goal is that projects fit their surroundings while effectively serving transportation needs.⁶³ MDOT will continue to implement CSS policies throughout the planning and design for the Project by using the Project's corridor design guidelines.

MDOT will seek agreements with the city to maintain planters, median plantings, street trees and landscaping. See the Project corridor design guidelines.⁶⁴

⁶³ Michigan Department of Transportation. Projects and Programs: Context Sensitive Solutions. Retrieved from https://www.michigan.gov/mdot/0,4616,7-151-9621_41446---,00.html.

⁶⁴ Michigan Department of Transportation. (2010).

4.8. Air Quality

4.8.1. Summary of Previous Analysis

The previous analysis conducted found that all predicted carbon monoxide (CO) concentrations for the year 2025 would be below applicable federal and state standards. As reported in the 2004 FEIS, the assessment predicted that the Project would not cause or exacerbate a violation of the CO standards.

4.8.2. Air Quality Analysis

In compliance with the Clean Air Act and the 1990 Clean Air Act Amendments, the National Environmental Policy Act (NEPA), related federal regulations and FHWA guidance, along with MDOT procedures, an *Air Quality Technical Memorandum – TM 50* was prepared to analyze the potential air quality impacts of the Project. This section of the DSEIS summarizes the *Air Quality Technical Memorandum*, which is presented in **Appendix F**. The analysis addresses conformity, the results of a CO hot -spot analysis, fine particulate matter (PM_{2.5}), and Mobile Source Air Toxics (MSAT).

4.8.3. Affected Environment

The Clean Air Act of 1970 (last amended in 1990) requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to protect public health, and the environment. To date, NAAQS have been established for six criteria pollutants: CO, lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), PM₁₀ – levels of 10 microns and smaller, and PM_{2.5} – levels of 2.5 microns and smaller, and sulfur dioxide (SO₂).

Table 4-8 presents the NAAQS. When concentrations of pollutants do not exceed the standards, an area is considered in attainment of the NAAQS. The EPA designates areas that exceed NAAQS standards for one or more pollutants as non-attainment areas.

The Clean Air Act Amendments of 1977 and 1990 required all states to submit a list to EPA identifying those air quality regions, or portions thereof, which meet or exceed the NAAQS or cannot be classified because of insufficient data. Portions of air quality control regions that exceed the NAAQS for any criteria pollutant are designated as non-attainment areas for that pollutant. The Clean Air Act Amendments also established time schedules for the states to attain the NAAQS.

The primary pollutants from motor vehicles are unburned hydrocarbons, nitrogen oxides, carbon monoxide and particulates. Volatile organic compounds and nitrogen oxides react in the presence of sunlight to create ozone. Because these reactions take place over a period of several hours, maximum concentrations of photochemical oxidants are often found far downwind of the precursor sources. These pollutants are regional problems. The modeling procedures for ozone require long-term meteorological data and detailed area-wide emission rates for all potential sources.

Table 4-8: National Ambient Air Quality Standards

Pollutant Primary and/or Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO) Primary	8 hours	9 ppm	Not to be exceeded more than once per year
Carbon Monoxide (CO) Primary	1 hour	35 ppm	Not to be exceeded more than once per year
Lead (Pb) Primary and Secondary	Rolling 3-month average	0.15 µg/m ³ ^a	Not to be exceeded
Nitrogen Dioxide (NO₂) Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Nitrogen Dioxide (NO₂) Primary and Secondary	1 year	53 ppb ^b	Annual mean
Ozone (O₃) Primary and Secondary	8 hours	0.070 ppm ^c	Annual fourth-highest daily maximum 8-hour concentration averaged over 3 years
Particle Pollution: PM_{2.5} Primary	1 year	12 µg/m ³	Annual mean averaged over 3 years
Particle Pollution: PM_{2.5} Secondary	1 year	15 µg/m ³	Annual mean averaged over 3 years
Particle Pollution: PM_{2.5} Primary and Secondary	24-hours	35 µg/m ³	98th percentile averaged over 3 years
Particle Pollution: PM₁₀ Primary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years.
Sulfur Dioxide (SO₂) Primary	1 hour	75 ppb ^d	99th percentile of 1-hour daily maximum concentrations averaged over 3 years
Sulfur Dioxide (SO₂) Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

^a In areas designated non-attainment for the Pb standards before the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar-quarter average) also remain in effect.

^b The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the one-hour standard level.

^c Final rule signed Oct. 1, 2015, and effective Dec. 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards. On April 23, 2018, the FHWA published a memorandum providing interim guidance on the reinstated 1997 eight-hour ozone standard. The standard was revoked in April 2015 with the establishment of the 2008 8-hour ozone standard. A federal court decision reinstated the 1997 standard.

^d The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated non-attainment under the previous SO₂ standards or is not meeting the requirements of a SIP call under the previous SO₂ standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Source: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>, accessed March 8, 2018

Carbon monoxide is a colorless and odorless gas that is the by-product of incomplete combustion and is the major pollutant from gasoline-fueled motor vehicles. Carbon monoxide emissions are greatest from vehicles operating at low speeds and prior to complete engine warm-up (within roughly eight minutes after starting). Congested urban roads tend to be the principal problem areas for carbon monoxide.

PM includes microscopic solids or liquid droplets. Motor vehicles (for example, cars, trucks, and buses) emit direct PM in their exhausts, as well as from brake and tire wear. Vehicles also cause dust from paved and unpaved roads to be re-suspended in the atmosphere. Gaseous precursors in vehicle exhaust may react in the atmosphere to form PM, including nitrogen oxides (NOX), volatile organic compounds, sulfur oxides (SOX) and ammonia (NH₃). PM can penetrate deep into the lungs and cause health problems, such as heart attacks, aggravated asthma, coughing, or difficult breathing. People with heart or lung diseases, children, and older adults are the most susceptible to particle pollution exposure, although healthy people may also experience temporary symptoms from exposure to elevated levels of PM pollution.⁶⁵

Exceeding the NAAQS pollutant level does not necessarily constitute a violation of the standard. Some of the criteria pollutants (including carbon monoxide) are allowed one exceedance of the maximum level per year, while for other pollutants, criteria levels cannot be exceeded. Violation criteria for other pollutants are based on recorded exceedances. **Table 4-8** lists the allowable exceedances for EPA criteria pollutants.

In addition to establishing the NAAQS, the EPA regulates air toxics. MSATs are compounds emitted from on-road mobile sources, non-road mobile sources (for example, airplanes), area sources (for example, dry cleaners), and stationary sources (for example, factories or refineries) that are known to cause serious health and environmental effects.

In April 2007, under authority of the Clean Air Act Section 202(l), the EPA signed a final rule, Control of Hazardous Air Pollutants from Mobile Sources, which sets standards to control MSATs. Under the rule, the EPA set standards on fuel composition, vehicle exhaust emissions, and evaporative losses from portable containers. Beginning in 2011, refineries were required to limit the annual benzene content of gasoline to an annual refinery average of 0.62%. The rule also sets a new vehicle exhaust emission standard for non-methane hydrocarbons including MSAT compounds, which were phased in between 2010 and 2013 for lighter vehicles and between 2012 and 2015 for heavier vehicles.

4.8.4. Attainment Status

The Project limits are within the Metropolitan Detroit-Port Huron Intrastate Air Quality Control Region (AQCR #123). Wayne County is currently in attainment status for three of the six criteria pollutants. Although a portion of Wayne County has been classified as being in non-attainment for Sulfur Dioxide SO₂ (2010), the Project is not located in this portion of the County.⁶⁶ Wayne County is considered a “Maintenance Area” for CO and PM_{2.5}. As such, the Project is required to meet Transportation Conformity Rule requirements found in 40 CFR Part 93. The Project is included in Southeast Michigan Council of Government’s (SEMCOG) 2040 Regional Transportation Plan (RTP) for Southeast Michigan (RTP project #12931, 12927, and 13026), and FY 2017-2020 Transportation Improvement Program (TIP) for Southeast Michigan (TIP project #136, 137, 139, 145, 146, 147, 148, 149, 151, 242, 243, 244, 245, 246, and 313).

⁶⁵ U.S. Environmental Protection Agency Particulate Matter (PM) Pollution. Health and Environmental Effects of Particulate Matter (PM). (January 5, 2018) Retrieved from <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.

⁶⁶ U.S. Environmental Protection Agency Green Book. Sulfur Dioxide (2010) Nonattainment Area Partial County Descriptions. Retrieved from <https://www3.epa.gov/airquality/greenbook/tnp.html#SO2.2010.Detroit>.

SEMCOG's 2040 RTP was adopted on June 20, 2013 in conformance with the transportation planning requirements of Titles 23 and 49 USC, the Clean Air Act Amendments, and related regulation.

4.8.5. Air Quality Impacts

4.8.5.1. CARBON MONOXIDE (CO)

The CO hot-spot analysis followed the modeling guidelines presented in EPA's *Guideline for Modeling Carbon Monoxide from Roadway Intersections* (1992) and *Using MOVES in Project-Level Carbon Monoxide Analyses* (2010).

Morning and afternoon traffic operations were modeled at 95 intersections near the Project limits. The a.m. and p.m. conditions were sorted by total approach volumes to identify the top 20 intersections. Level of Service (LOS) D occurred at six intersections with no occurrence of LOS E or F (LOS is defined in **Section 1.4.3**). Two of the six intersections were in the top 20 intersections; therefore, two intersections were identified with the worst combination of poor Level of Service (LOS D) and high volumes for the CO hot-spot analysis:

- M-10 Northbound Service Drive and Forest Avenue; and
- Trumbull Avenue and I-94 Westbound Service Drive.

The maximum one-hour CO concentration for the existing condition (2017) was 4.1 ppm at two receptors. The maximum open year (2036) concentration would be 3.6 ppm at one receptor. In the design year (2040), the maximum concentration would decrease to 3.5 ppm and would occur at one receptor. All CO concentrations include a background concentration of 3.3 ppm. None of these concentrations exceed either the one-hour (35 ppm) or eight-hour (9 ppm) NAAQS; therefore, because the one-hour analysis predicted CO concentrations are less than 9.0 ppm, a separate eight-hour analysis was not performed.⁶⁷

4.8.5.2. PM_{2.5} HOT-SPOT ANALYSIS

EPA issued the final, amended Transportation Conformity Rule on March 10, 2006. The rule requires a hot-spot analysis to determine project-level conformity in PM_{2.5} and PM₁₀ non-attainment and maintenance areas. A hot-spot analysis is an assessment of localized emissions impacts from a proposed transportation project and is only required for "projects of air quality concern."

The Michigan Transportation Conformity Interagency Workgroup (MITC-IAWG) determined that there would not be significant increase in the number of diesel trucks for the Project. Therefore, the I-94 Detroit Modernization Project was determined to not be a project of air quality concern for PM_{2.5}.⁶⁸

4.8.5.3. MOBILE SOURCE AIR TOXICS ANALYSIS

In October 2016, FHWA issued updated guidance for the analysis of mobile source air toxics (MSATs) in the NEPA process for highway projects (*Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*) requiring the use of the most recent version of EPA's *Motor Vehicle Emissions Simulator* (MOVES2014a) model for air quality analysis on documents prepared in accordance with NEPA. The FHWA developed a tiered approach with three categories for analyzing MSAT in NEPA documents, depending on specific project circumstances:

- No analysis for projects with no potential for meaningful MSAT effects

⁶⁷ Federal Highway Administration, Southern Resource Center. Manual for Air Quality Considerations in Environmental Documents. January 2001.

⁶⁸ Southeast Michigan Council of Governments. "Annual Work Program Completion Report", pages 8 and 57. September 2018. Summary of May 21, 2018, conference call, Michigan Transportation Conformity Interagency Workgroup.

- Qualitative analysis for projects with low potential MSAT effects
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects

For projects warranting MSAT analysis, all nine priority MSATs should be analyzed.

The Project is a project with low potential MSAT effects because it is a project that “serve[s] to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions”;⁶⁹ therefore, a qualitative analysis was performed in the vicinity of the Project limits.

The amount of MSAT emissions emitted for the ASAM would be proportional to the vehicle miles traveled (VMT). The Project serves to improve operations of the highway and does not add substantial new capacity. Therefore, it is likely to have no meaningful increase in MSAT emissions.

Emissions likely will decrease for the future design year due to the EPA’s national control programs, which are projected to reduce annual MSAT emissions by over 90% between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even accounting for VMT growth) that MSAT emissions in the vicinity of the Project limits are likely to be lower in the future in nearly all cases.

The Project may have localized areas where ambient concentrations of MSAT could be higher under the ASAM than the No-Build scenario. However, the magnitude and the duration of these potential increases compared to the No-Build scenario cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts as discussed in Section 5.5.3 of the *Air Quality Technical Memorandum* (see **Appendix F**).

In sum, under the ASAM in the design year it is expected that there would be little appreciable differences in overall MSAT emissions relative to the No-Build Alternative. However, the EPA’s vehicle and fuel regulations will bring about significantly lower MSAT levels for the area in the future than today.

In FHWA’s view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

4.8.6. Air Quality Mitigation Measures

Based on the air quality analyses completed for the proposed improvements, the Project will not contribute to any violation of the CO or PM_{2.5} NAAQS.

FHWA and MDOT have provided a qualitative analysis of MSAT emissions relative to the No-Build Alternative. The FHWA and MDOT have acknowledged that a future project in the vicinity of the Project limits may result in increased

⁶⁹ SEMCOG. (September 2018).

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. Therefore, no measures to mitigate air quality impacts have been identified.

4.9. Noise and Vibration

4.9.1. Summary of Previous Noise Analysis

A traffic noise analysis of the ASA was completed and can be found in Section 5.6 of the 2004 FEIS. Changes to 23 CFR 772 and MDOT's *Highway Noise Analysis and Abatement Handbook* (see Section 4.1.7.2) require a new assessment, which is included in this section.

The previous traffic noise analysis identified traffic noise impacts for the ASA. Noise barrier feasibility and reasonableness, based on MDOT's 1996 *Noise Abatement Guidelines* were evaluated at 19 of the 21 impacted locations. As reported in the 2004 FEIS, three noise barriers were feasible and reasonable.

4.9.2. Traffic Noise Analysis

The noise impact and abatement analysis has been performed for the ASAM because the Project is being studied as a Type I project (defined by the addition of a through-lane in both directions). The determination of noise abatement measures and locations complies with FHWA's *Procedures for Abatement of Highway Traffic Noise and Construction Noise* as presented in 23 CFR 772, and MDOT: *Highway Noise Analysis and Abatement Handbook*, dated July 2011 (Handbook). This is new policy since the 2005 FEIS noise analysis as discussed in **Section 4.1.6.2**. The Handbook complies with the *State Transportation Commission Policy 10136 Noise Abatement*, dated July 31, 2003.

This section summarizes the *Noise and Vibration Analysis Technical Memorandum – TM 48* (see **Appendix G**).

4.9.3. Basic Noise Information

Noise is defined as unwanted sound. Sound is what we hear when there are variations in air pressure. The ear is sensitive to pressure variation and perceives it as sound. The intensity of these pressure variations causes the ear to discern different levels of loudness. These pressure differences are most commonly measured in decibels.

The decibel (dB) is the unit of measurement for sound. The decibel scale audible to humans spans approximately 140 dB. A level of zero decibels corresponds to the lower limit of audibility, while 140 dB produces a sensation more akin to pain than sound. The decibel scale is a logarithmic representation of the actual sound pressure variations. Therefore, a 26% change in the energy level only changes the sound level 1 dB. The human ear would not detect this change except in an acoustical laboratory. A doubling of the energy level would result in a 3-dB increase, which would be barely perceptible in the natural environment. A tripling in energy sound level would result in a clearly noticeable change of 5-dB in the sound level. A change of 10 times the energy level would result in a 10-dB change in the sound level. This would be perceived as a doubling (or halving) of the apparent loudness.

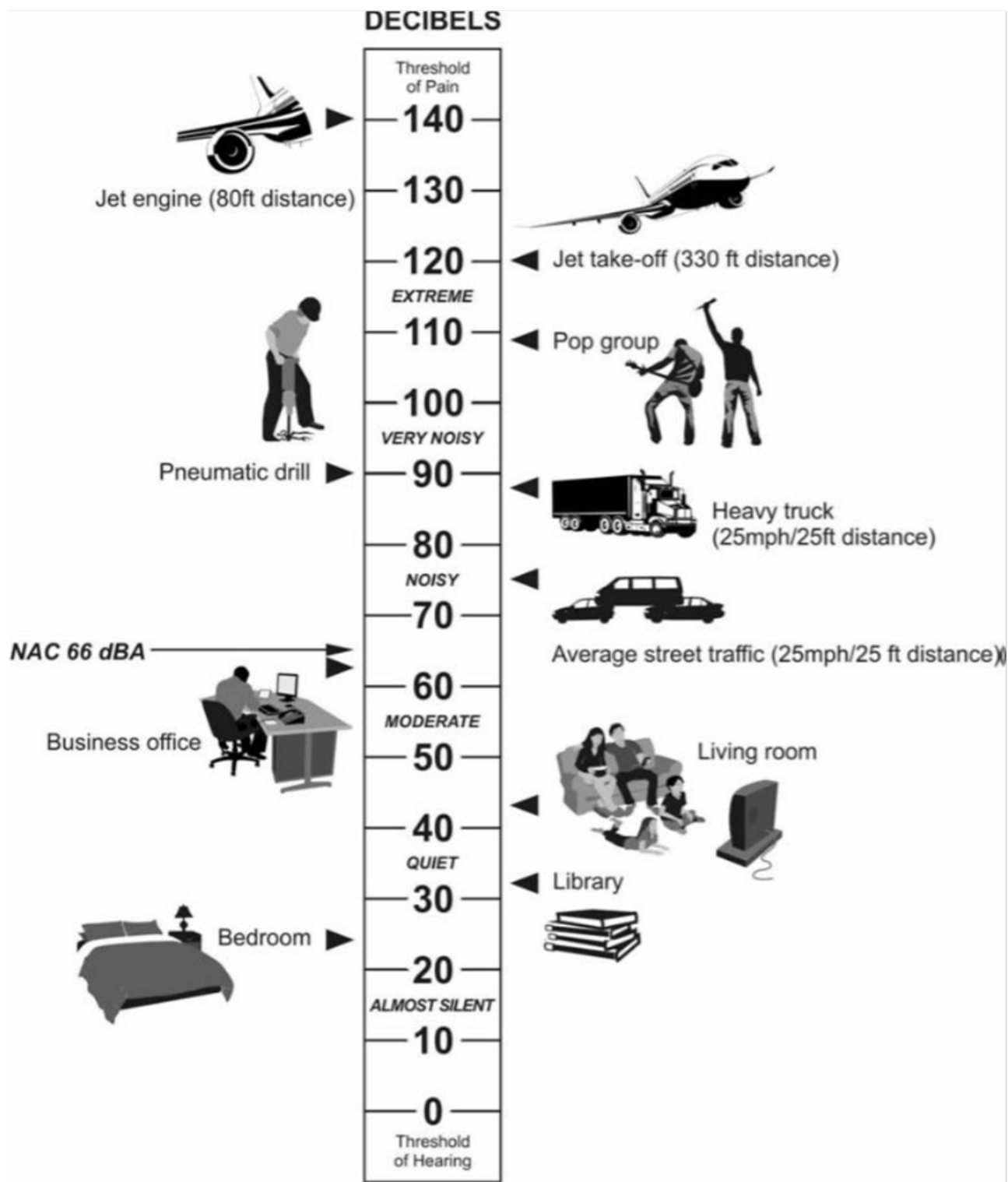
The human ear has a non-linear sensitivity to noise. To account for this in noise measurements, electronic weighting scales are used to define the relative loudness of different frequencies. The "A" weighting scale is widely used in environmental work because it closely resembles the non-linearity of human hearing. Therefore, the unit of measurement for an A-weighted noise level is dB(A).

Traffic noise is not constant. It varies as each vehicle passes through a certain location. The time-varying characteristics of environmental noise are analyzed statistically to determine the duration and intensity of noise exposure. In an urban environment, noise is made up of two distinct components. One is ambient or background noise. Wind noise and distant traffic noise make up the ambient acoustical environment surrounding the Project. These sounds are not readily recognized but combine to produce a non-irritating ambient sound level. This background sound level varies throughout the day, being lowest at night and highest during the day. The other component of urban noise is intermittent and louder than the background noise. Transportation noise and local industrial noise are examples of this type of noise. It is for these reasons that environmental noise is analyzed statistically.

It is necessary to use a method of measure that will account for the time-varying nature of sound when studying environmental noise. The equivalent sound pressure level (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. As a result, the three characteristics of noise combine to form a single descriptor (L_{eq} in dB(A)) that helps to evaluate human response to noise and has been chosen for use in this study. The time-period used to determine noise levels is typically one hour and uses the descriptor $L_{eq(1h)}$.

Traffic noise at a receiver is influenced by the following major factors: distance from the traffic to the receiver, volume of traffic, speed of traffic, vehicle mix, and acoustical shielding. Tire sound levels increase with vehicle speed but also depend upon road surface, vehicle weight, tread design and wear. Change in any of these can vary noise levels. At lower speeds, especially in trucks and buses, the dominant noise source is the engine and related accessories. **Figure 4-4** provides sound levels of typical noise sources.

Figure 4-4: Sound Levels of Typical Noise Sources



Adapted from "Environmental Criteria for Road Traffic Noise," Environmental Protection Authority, South Sydney, NSW, May 1999, Page 38.

Highway noise sources have been divided into five types of vehicles; automobiles (A), medium trucks (MT), heavy trucks (HT), buses (B) and motorcycles (MC). Each vehicle type is defined as follows:

- Automobiles – all vehicles with two axles and four tires, includes passenger vehicles and light trucks, less than 10,000 pounds
- Medium trucks – all vehicles having two axles and six tires, vehicle weight between 10,000 and 26,000 pounds
- Heavy trucks – all vehicles having three or more axles, vehicle weight greater than 26,000 pounds
- Buses – all vehicles designed to carry more than nine passengers
- Motorcycles – all vehicles with two or three tires and an open-air driver/passenger compartment

Noise levels produced by highway vehicles can be attributed to three major categories:

- Running gear and accessories (tires, drive train, fan and other auxiliary equipment)
- Engine (intake and exhaust noise, radiation from engine casing)
- Aerodynamic and body noise

4.9.3.1. HIGHWAY-TRAFFIC-INDUCED VIBRATION

Automobiles, trucks, and buses do not typically generate enough vibration to be a concern, except under specific situations, such as where there are pavement irregularities adjacent to sensitive locations. Studies to assess the impact of operational traffic induced vibrations have shown that both measured and predicted vibration levels are less than any known criteria for structural damage to buildings. In fact, normal living activities (e.g., closing doors, walking across floors, operating appliances) within a building have been shown to create greater levels of vibration than highway traffic. No federal requirements specifically address highway-traffic-induced vibration.

4.9.4. Land Use Inventory

The Project noise study area includes residential, recreational, commercial, and industrial areas. The noise study area extends approximately 500' from the proposed improvements along I-94 from approximately 1,000 feet east of the I-94/I-96 interchange to 1,000 feet east of the I-94/Conner Avenue interchange, including M-10 from Seward Street to Martin Luther King Jr. Boulevard, and I-75 from East Grand Boulevard to Warren Avenue.

Noise impacts were assessed by modeling noise levels at 1,667 noise receivers representing 2,643 receptors in the noise study area. Receivers, defined as single points in the noise model, represent noise receptors that are being analyzed. One receiver can represent multiple receptors in the noise analysis. The locations of the receivers are shown on Figures 4.1 through 4.19 of the *Noise and Vibration Analysis Technical Memorandum – TM 48*.

4.9.5. Existing Noise Level Measurement

Existing noise level measurements were conducted on May 23, 2018 at 11 representative sites in the noise study area. Fifteen-minute measurements were taken at each site. Traffic classification counts along the major roadways (I-94, M-10, and I-75) and local cross streets and frontage roads were taken at each site concurrent with the noise measurements. All the noise level measurements were performed at the edge of the right-of-way. The noise levels ranged from 68.3 to 82.6 dB(A) L_{eq} . The purpose of the field noise measurements is to compare the modeled noise levels to the measured noise levels to validate the TNM model for use on the specific project. The modeled noise levels at each of the measurement sites was within +/- 3 dB(A) when compared to the measured levels, which satisfies the MDOT requirement for validating noise measurements.

4.9.6. Noise Assessment Methodology and Legal and Regulatory Context

The FHWA's *Procedures for Abatement of Highway Traffic Noise and Construction Noise* is presented in 23 CFR 772, which requires the identification of highway traffic noise impacts and the evaluation of potential noise abatement measures in conjunction with the planning and design of a federal-aid highway project. The MDOT policy for implementation of the requirements of 23 CFR 772 is described in the handbook, which applies to all projects that receive Federal-aid funds or projects that are subject to FHWA approval.

4.9.7. Modeled Impacts from Traffic Noise

4.9.7.1. ESTIMATED NOISE LEVELS

FHWA's *Traffic Noise Model Version 2.5* (TNM 2.5) was used to model existing (2014) and design year (2040) worst hourly traffic noise levels within the noise study area for the ASAM. The following parameters are used in this model to calculate an hourly $L_{eq(1h)}$ at a specific receiver location:

- Distance between roadway and receiver
- Relative elevations of roadway and receiver
- Hourly traffic volume in light-duty (two axles, four tires), medium-duty (two axles, six tires), and heavy-duty (three or more axles) vehicles
- Vehicle speed
- Ground absorption
- Topographic features, including retaining walls and berms

Modeled receptors were placed in accordance with FHWA requirements in areas with evidence of frequent human use. This area is typically located between the highway and any structure, such as a residence. MDOT considers this as the back-yard area within 35 feet from the back of a residence. Balconies in apartment buildings are included when the balcony faces the highway and there are no ground-level areas of frequent human use between the highway and the building. Second floor balconies are included in noise impact and abatement analyses. Balconies on floors higher than the second floor may be included depending on their relationship to the level of the roadway.

FHWA's *Recommended Best Practices for the Use of the FHWA Traffic Noise Model* (TNM) states, "The loudest hour of the day is dependent upon traffic conditions – vehicle volume, operating speed, and number of trucks – that combine to produce the highest hourly noise levels adjacent to the highway corridor. According to FHWA guidance, the 'worst hourly traffic noise impact' usually occurs at a time when truck volumes and vehicle speeds are the greatest, typically when traffic is free flowing and at or near LOS C conditions. Based on this guidance, the use of traffic data that are based on LOS was the preferred approach."

Traffic engineers determined that based on existing counts and speed data the time period from 9 to 10 a.m. most closely represented LOS C conditions.

4.9.7.2. CRITERIA FOR NOISE IMPACT

The FHWA Noise Abatement Criteria (NAC), which is presented in 23 CFR 772, establishes the NAC for various land uses. A traffic noise impact is defined as a future noise level that approaches or exceeds the NAC; or a future noise level that creates a substantial noise increase over existing noise levels.

Table 4-9 presents the NAC for various land uses.

Table 4-9: Federal Highway Administration Noise Abatement Criteria

Activity Category ¹	Activity Criteria ² $L_{eq(h)}$ ³	Activity Criteria ² $L_{10(h)}$ ⁴	Evaluation Locator	Activity Description
A	57	60	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	67	70	Exterior	Residential
C	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare 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.
D	52	55	Interior	Auditoriums, daycare 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 ⁵	72	75	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	N/A	N/A	N/A	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	N/A	N/A	N/A	Undeveloped lands that are not permitted.

¹ MDOT defines a noise impact as a 10 dB(A) increase between the existing noise level to the design year predicted noise level, or a predicted design year noise level that is 1 dB(A) less than the NAC standard.

² Either $L_{eq(h)}$ or $L_{10(h)}$ (but not both) may be used on a project. MDOT uses $L_{eq(h)}$. The $L_{eq(h)}$ and $L_{10(h)}$ Activity Criteria values are for impact determination only and are not design standards for noise abatement measures.

³ L_{eq} is the equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with $L_{eq(h)}$ being the hourly value of L_{eq} .

⁴ L_{10} is the sound level that is exceeded 10% of the time (90th percentile) for the period under consideration, with L_{10} being the hourly value of L_{10} .

⁵ Includes undeveloped lands permitted for this activity category

Source: Highway Noise Analysis and Abatement Handbook, Michigan Department of Transportation, 2011.

Traffic noise impacts are evaluated by modeling the worst-hour traffic noise levels using the equivalent sound pressure level (L_{eq}) noise descriptor. MDOT defines a traffic noise impact as follows:

- Predicted traffic noise levels approach (within 1 dB(A)) or exceed the FHWA noise abatement criteria (NAC), or
- Predicted traffic noise levels substantially exceed (an increase of 10 dB(A) or greater in the L_{eq}) existing noise levels.

4.9.7.3. NOISE IMPACT ASSESSMENT

Predicted future design year (2040) noise levels adjacent to the ASAM would approach or exceed the NAC at 189 receiver locations representing 386 receptors (382 residential receptors, one park, one public or nonprofit institutional structure, one active sport area and one playground). The future noise levels at these 386 impacted receptors would range from 66.0 to 75.2 dB(A) $L_{eq(h)}$.

Changes in L_{eq} noise levels under the future ASAM will range from -9.0 to 9.7 dB(A) compared to existing conditions. No future noise levels would substantially exceed existing noise levels.

4.9.8. Noise Mitigation Measures

The Handbook has established the criteria for determining where noise abatement must be provided. The Handbook and other MDOT resources can be found at https://www.michigan.gov/mdot/0,4616,7-151-9621_11041_25846---,00.html. The policy states that where adverse noise impacts are expected to occur, noise abatement will be considered and will be implemented if found feasible and reasonable for existing developments, and future developments that were approved before the date of public knowledge of the Project. All sites will be considered; however, it is generally known that commercial and industrial sites prefer that there be no interference with the view to their establishments. Therefore, when commercial and residential sites expected to convert to a commercial or industrial land use (e.g., some of the residential units have converted to commercial/industrial, or the area has been rezoned commercial) are found to be reasonable and feasible, MDOT will request property owners' comment on the desire for noise abatement.

Based upon the requirements of 23 CFR 772 and the MDOT Handbook, various methods were reviewed to mitigate the noise impact of the proposed improvements. Among those considered were construction of noise barriers including acquisition of property rights, either within or outside the highway right-of-way; traffic management measures; altering horizontal and vertical alignments; acquiring property to create buffer zones to prevent development that could be adversely impacted; and insulating public use or nonprofit institutional buildings.

Reductions of speed limits, although acoustically beneficial, are seldom practical unless the design speed of the proposed roadway is also reduced. Restricting or prohibiting trucks is counter to the Project's purpose and need. Design criteria and recommended termini for the Project preclude substantial horizontal and vertical alignment shifts that would produce noticeable changes in the projected acoustical environment. Cost restrictions typically prohibit property acquisition. Due to right-of-way limitation the construction of noise berms is neither feasible nor reasonable. Therefore, the construction of noise barriers was reviewed. Abatement is recommended only when it is feasible and reasonable to construct a noise barrier. The MDOT Handbook defines feasibility and reasonableness as follows:

- Feasible – This refers to engineering considerations such as: constructability of a noise barrier on the existing topography; achievement of substantial noise reductions; the presence of other noise sources in the area; and the ability to maintain access, drainage, safety, utilities in the area. While every reasonable effort should be made to obtain a substantial noise reduction, a noise abatement measure is not feasible if it cannot achieve at least a 5 dB(A) noise reduction for 75% of impacted receivers during design year traffic noise.
- Reasonable – Noise mitigation will be considered reasonable if:
 - During the environmental clearance phase, the preliminary cost per benefiting unit is less than 3% above allowable per benefitting unit level (\$46,967 in 2018 dollars);
 - MDOT receives generally positive comments from benefiting receptors during the environmental clearance phase; and

- The noise barrier provides a design year traffic noise reduction of 10 dB(A) for at least one benefitted unit and at least a seven dB(A) for 50% or more of the benefitted units.

MDOT evaluated 20 noise barriers for this noise study. One of the 20 barriers analyzed meets MDOT's preliminary feasible and reasonableness criteria (NB 4), see **Section 6.6** Noise Barriers. Nineteen analyzed barriers did not meet MDOT's preliminary feasible and reasonableness criteria. Additionally, based on the scattered location of noise impacts along the corridor, noise barriers are not reasonable for individual receptors.

Details about the barriers evaluated are presented in Tables 7 and 8 of the *Noise and Vibration Analysis Technical Memorandum – TM 48* (see **Appendix G**) with the locations of the noise barriers shown on Figures 4.1 through 4.19. The results of each evaluated barrier, including future $L_{eq(1h)}$ noise levels without and with a barrier, barrier length and height, and the noise reduction provided by the barrier are presented in Table 7. Table 8 presents the feasibility and reasonableness determination for each barrier.

Three noise barriers found to be feasible and reasonable as part of the 2004 FEIS were found to either not be necessary or not meet current feasibility and reasonableness requirements in the 2018 noise impact and abatement analysis. **Table 4-10** summarizes the noise abatement analysis findings for the three noise barriers proposed in the 2004 FEIS. Barrier analyses for NB 6 and NB 20 referenced in **Table 4-10** are presented in Tables 7 and 8 of the *Noise and Vibration Analysis Technical Memorandum – TM 48* (see **Appendix G**).

Table 4-10: 2018 Noise Impact Analysis Barrier Findings (ASAM) as Compared to 2004 FEIS (ASA)

ASA Reasonable and Feasible Barrier Location	Length (Feet)	Design Changes	New Findings
ASA Barrier B-3 Northwest quadrant of I-94 and M-10	890	ASAM interchange roadways are further from receptors. (See Exhibit 4-4)	The ASAM design moved roadways far enough away from receptors that a traffic noise impact is no longer predicted. The ASA design predicted a noise impact at nearby receivers (R-6) in the AM hour with a noise level of 67 dB(A). The noise levels under the ASAM, at comparably located receivers (GG-48 and GG-49), would be 63.5 dB(A) and 61.1 dB(A), respectively. Residential receivers are considered impacted if they experience a project noise level within 1 dB of the impact criterion for residential receivers, which is 67 dB(A). Therefore, no impact is predicted in this location and a barrier is no longer recommended.

4.9. Noise and Vibration

ASA Reasonable and Feasible Barrier Location	Length (Feet)	Design Changes	New Findings
ASA Barrier B-5 Southwest quadrant of I-94 and I-75	1,521	ASAM local road and interchange designs have changed. The frontage road that runs along the south side of I-94 now includes intersecting/crossing roads. (See Exhibit 4-5.)	Under the ASAM, additional noise impacts are predicted in this area, which required analysis of a longer barrier than was analyzed for the ASA. This barrier (ASAM Barrier NB 6) would need to be over twice as long at 3,904 feet. The ASAM's interchange design crosses over local roads, which would require breaks in the barrier. The ASA did not have the need for breaks in the barrier. This unavoidable situation decreases the effectiveness of a noise barrier. MDOT noise policy has changed since the analysis of the ASA to require a 5 dB(A) reduction at 75% of the impacted receptors. ASAM Barrier NB-6 is not feasible because it achieves only a 5 dB(A) reduction at 20% of the impacted receptors. MDOT policy also now requires at least 10 dB(A) reduction at one benefited receiver. ASAM Barrier NB 6 only achieved a maximum 9.3 dB(A) reduction and therefore is not reasonable.
ASA Barrier B-7 West of I-75 between Ferry Street and Warren Avenue	1,801	Under the ASAM, the I-75 southbound access configuration changed, requiring additional ramps. (See Exhibit 4-18.)	The ASAM's changed I-75 southbound access configuration requires analysis of a different barrier location. The modeled noise barrier (ASAM Barrier NB 20) would be located near the previous study's noise barrier (ASA Barrier B-7). The ASAM's additional access ramps would require gaps in the barrier where it did not under the ASA. This unavoidable situation decreases the effectiveness of a noise barrier. MDOT noise policy has changed since the analysis of the ASA to require a 5 dB(A) reduction at 75% of the impacted receptors. ASAM Barrier NB 20 did not achieve a 5 dB(A) reduction and therefore is not feasible.

4.9.8.1. STATEMENT OF LIKELIHOOD

As shown in Table 8 of the *Noise and Vibration Analysis Technical Memorandum – TM 48* (see **Appendix G**), NB 4 is a feasible and reasonable barrier, which MDOT will evaluate in further detail during final design. The preliminary assessment is based on preliminary design for barrier cost(s) and noise abatement as discussed in this document. If it subsequently develops during final design that these conditions have substantially changed, the abatement measures might not be provided.

4.9.9. Construction Noise and Vibration Impacts

Construction Impacts **Section 4.16.5** and **Section 4.16.8** discuss construction noise and vibration impacts, respectively.

4.10. Contaminated Sites

Section 5.8 of the 2004 FEIS summarizes the contaminated sites assessment. This section describes whether there are contaminated sites in the Project's proposed construction zones.

4.10.1. Existing Contaminated Sites

A Project Area Contamination Survey (PACS) conducted for the 2004 FEIS identified 49 properties within the PACS study area with a potential for contamination under the definition of environmental risk at that time. Fifteen properties were rated as low-risk, 15 were rated as medium-risk, and 19 were rated as high-risk.

MDOT completed an updated PACS in 2018 for an updated study area, which includes the Project limits, parcels adjoining the Project limits within a buffer consistent with the 2004 PACS' study area, and some parcels located in close proximity to the Project limits but not adjoining the Project Limits.⁷⁰ Based on a review of historical and current documentation, 15 of the 49 properties previously identified as sites of potential environmental concern are no longer properties with potential environmental contamination. Thirty-four properties still carry the potential for contamination. MDOT will test the high and medium risk areas during right-of-way acquisition.

During the 2018 PACS, MDOT reviewed state and federal government environmental database records to identify potential environmental concerns on or near the Project. A total of 195 properties within the 2018 PACS study area are identified as low- or high-risk for potential. One-hundred and twenty-nine properties are rated high-risk and 66 are rated low-risk. No properties are rated as medium-risk. The PACS found:

- Properties identified with potential environmental concerns are listed under environmental databases, which include but not limited to Federal Brownfield, Brownfield (state), Leaking Underground Storage Tanks (LUSTs), State Hazardous Waste Sites (SHWS), and Baseline Environmental Assessment (BEA).
- One property of approximately 3.5 acres was identified as having been delisted from the Superfund National Priorities List (NPL). This property is located at 4690 Humboldt, and although it is just outside of the limits of the 2018 PACS study area, it has a high-risk rating and is therefore worthy of noting. The property has been cleaned up to standards, such that no further response actions are appropriate.
- Three properties (1550 Harper Street, 2600 E. Grand Boulevard, and 1331 Holden Street) are listed under the solid waste facility/landfill (SWF/LF) database.
- Fifteen properties are listed under the Federal Brownfield database.
- Approximately 22 properties are not associated with a physical address. However, the properties are reported to be within or near the 2018 PACS study area.

4.10.2. Mitigation Measures to Address Contaminated Sites

MDOT will complete a Preliminary Site Investigation (PSI) for properties identified with medium and high environmental risk ratings. A PSI will provide environmental data that could be utilized to protect the health and safety of workers during demolition and/or construction activities and to manage construction/demolition waste.

Following the ongoing collection and evaluation of chemical characteristics of soil, MDOT will coordinate with Michigan Department of Environment, Great Lakes, and Energy (EGLE) and prepare a Due Care Plan under Part 201

⁷⁰ Somat Engineering, Inc. (2018). Project Area Contamination Survey Interstate 94 Modernization Project.

4.11. Water Resources

PA 451, Environmental Remediation. The Due Care Plan may be prepared in the form of specifications to be part of construction contract documents. The Due Care Plan will address needs for resident, business and worker safety, proper disposal of contaminated soil and sediment if present, and prescribe steps to prevent exacerbation of contamination. The Due Care Plan will also address containment, water and dust control to maintain a safe environment during construction.

4.11. Water Resources

The water quality assessment is presented in the 2001 DEIS in Section 5.9. Changes or updates to current programs and policies are summarized below.

4.11.1. Existing Water Resource Conditions

4.11.1.1. WATER QUALITY PROGRAMS AND POLICIES

The Clean Water Act Section 402 (National Pollutant Discharge Elimination System (NPDES)) regulates discharge of water pollutants. An NPDES Permit (No. MI0057364) issued by the Michigan Department of Environmental Quality (MDEQ) is currently in effect for MDOT.^{71, 72, 73}

The *Michigan Department of Transportation Drainage Manual* (drainage manual)⁷⁴ provides guidance for the planning, design, construction and maintenance of large-scale transportation facilities. The drainage manual introduces stormwater best management practices (BMPs) that are used in MDOT's operations and provides an overview of how water quality improvements can be realized by using BMPs. The drainage manual is also used to design roadway stormwater drainage systems and storage facilities.

4.11.1.2. EXISTING STORMWATER AND DRAINAGE CONDITIONS

The majority of the stormwater from I-94 currently enters the Detroit Water and Sewerage Department's (DWSD) combined sewer overflow system. One storm sewer currently drains to MDOT's I-96 storm-only system. Local permit requirements, codes and ordinances help DWSD implement best practices in stormwater management. The city's stormwater system is aging and deteriorating. DWSD's *2018-2022 Capital Improvements Program* lists no city water projects planned near the Project limits over the next five years.⁷⁵ The city has a commitment to implement "green infrastructure" and a goal to remove 2.8 million gallons of stormwater from the combined sewer system. The Great Lakes Water Authority (GLWA) and DWSD have an agreement to fund the replacement and rehabilitation of DWSD's aging water and sewer system.

⁷¹ Michigan Department of Transportation Stormwater Management. Stormwater Management Program. Retrieved from <https://www.michigan.gov/stormwatermgmt/0,4672,7-205--93182--,00.html>.

⁷² Formerly known as MDEQ, Governor Whitmer signed Executive Order 2019-06 on February 20, 2019, creating the Department of Environment, Great Lakes, and Energy (EGLE). The Executive Order took effect on Monday, April 22, 60-days after its submission to the Legislature.

⁷³ Michigan Department of Transportation. Phase II Storm Water Management Plan Permit No. MI0057364. Lansing, Michigan. April 1, 2005.

⁷⁴ Michigan Department of Transportation and Tetra Tech MPS. *Michigan Department of Transportation Drainage Manual*. Lansing, Michigan. January 2006.

⁷⁵ Detroit Water and Sewerage Department. (2018). 2018-2022 Capital Improvement Program. City of Detroit, Water & Sewerage Department. Detroit: City of Detroit. Retrieved January 2, 2018, from <https://www.detroitmi.gov/sites/detroitmi.localhost/files/2018-02/DWSD%202018-2022%20CIP%202017-06-07%20FINAL%20Version%20%281%29.pdf>.

4.11. Water Resources

A conceptual drainage study was completed for MDOT in June 2010.⁷⁶ This study is included as Appendix O of the *I-94 Rehabilitation Detailed Engineering Report* (Engineering Report).⁷⁷

I-94 in the Project limits has an enclosed drainage system located under the freeway lanes. The system has a combination of gravity outlets and pumped outlets leading to the DWSD combined sewer system, a tributary to the Detroit Wastewater Treatment Plant. After being treated, runoff is discharged to the Detroit River. During major storms, a portion of the runoff bypasses the DWSD system and enters the Detroit River through a combined sewer overflow. The existing DWSD system is at capacity. Detailed existing conditions are contained in Appendix O of the I-94 Engineering Report, which discusses the existing sewer routing, outlet locations, and discharge rates.

In the past several years Detroit has experienced some flooding along the interstates after intense rainfall events. City infrastructure condition is the primary factor contributing to flooding. The city's Capital Improvements Program has set aside funding and green infrastructure initiatives to address aging and deteriorating infrastructure.⁷⁸ MDOT has a stormwater management program and there are pump houses in the corridor that pump water from lower lying areas. MDOT has also adopted a stormwater management ordinance that requires private developers to implement stormwater controls to address their project's runoff.

4.11.2. Impacts to Water Resources

Like the ASA, the ASAM will have more impervious area (paved area) than existing conditions, which could result in higher stormwater discharge. The ASAM will increase impervious area by 78.55 acres; a 28% increase over existing conditions. DWSD requires matching the existing discharge rates because their system is currently at full capacity.

Runoff from I-94, M-10 and I-75 carries contaminants into adjacent surface waters. Contaminants are deposited on road surfaces during regular highway operation and maintenance, such as from the application of snow and ice treatment during winter or when debris and other substances, such as heavy metal and hydrocarbons, fall from motor vehicles driving along the freeways. Additional contaminants can also come from the occasional accidental spill of petroleum products or industrial liquids that may occur after a crash on the highway. The type and amount of pollutants varies and cannot be determined precisely, so highway designers incorporate passive means to treat stormwater runoff. While I-94, M-10 and I-75 are under the jurisdiction of the state, the service drives are under the jurisdiction of the city of Detroit. The service drives, like the freeways, carry deposited contaminants into the stormwater system. Runoff from nearby impervious surfaces such as parking facilities, sidewalks, building rooftops will be carried along the service drives and into the stormwater system. Urban runoff often carries debris, litter, lawn fertilizer, road de-icing agents (such as salt and sand), contaminants from commercial activities and from motor vehicles, and eroding soils. Future design phases will address additional discharges associated with the service drives.

⁷⁶ Michigan Department of Transportation. (2010, June).

⁷⁷ CH2MHill. (2010). Conceptual Drainage Study, I-94 Rehabilitation, I-96 to Conner Avenue, Detailed Engineering Report (JN32587). Michigan Department of Transportation, Michigan Department of Transportation. Michigan Department of Transportation.

⁷⁸ Detroit Water and Sewerage Department. (2018).

4.11. Water Resources**Table 4-11: Change in Impervious Area (Acres)**

Existing Impervious Area	Proposed (ASAM) Impervious Area	Change
282.43 acres	360.98 acres	78.55 acres

For information about impacts to water quality during construction activities, see the discussion in **Section 4.16.4**. Preliminary plans for stormwater management are included in the *I-94 Detroit- Potential Stormwater Management and Landscaping Plan* included in **Appendix H**.

4.11.3. Mitigation Measures to Address Water Resources Impacts

MDOT will review the proposed improvements along the service drives and local street improvements to identify opportunities to incorporate green infrastructure to the extent feasible based on localized grading, soil conditions, available right-of-way, ground water elevation, and available outlet locations. Where conditions are favorable, MDOT will further investigate green infrastructure in the form of bioretention using bioretention basins or bioswales.

MDOT will develop the Project's conceptual drainage system according to the drainage manual, which uses a 50-year design storm for depressed freeways.⁷⁹ The Project's stormwater system will meet the city's criteria for allowable discharge rates into the DWSD combined sewer and will treat water that drains to the I-96 MDOT storm-only system to meet the requirements of MDOT's stormwater permit.

MDOT will further evaluate the stormwater collection system, underground storage, detailed pump station designs, and a pump switching plan during final engineering design. MDOT will coordinate as required with DWSD and EGLE or other applicable regulatory agencies.

The Project design will include measures to remove excessive contaminants before highway and street run-off reaches the receiving waters. To accomplish this, the Project will conform to the procedures in MDOT's *Phase II Storm Water Management Plan* (SWMP) and will incorporate installation and maintenance of appropriate best management practices (BMPs) as set forth under Chapter 9 of the drainage manual.^{80,81} Selection of permanent BMPs will be done with input from DWSD and EGLE or other applicable regulatory agencies.

During construction activities, the Phase II NPDES permit (No. MI0057364) will be implemented. MDOT will submit a Notice of Coverage form to the EGLE. NPDES site inspections of soil erosion and sedimentation control measures will be done every seven days including weekends or within 24 hours of a precipitation event that results in a stormwater discharge from the site. Construction activities will be conducted under MDOT's approved *Soil Erosion and Sedimentation Control (SESC) Plan* and the *State of Michigan's Permit-by-Rule*.

⁷⁹ Michigan Department of Transportation and Tetra Tech MPS. (2006, January).

⁸⁰ Michigan Department of Transportation. (2005, April 1).

⁸¹ Michigan Department of Transportation and Tetra Tech MPS. (2006, January).

4.12. Natural Resources

4.12.1. Existing Natural Resources Conditions

4.12.1.1. WETLANDS AND FLOODPLAINS (NONE PRESENT)

Section 5.10.1 of the 2001 DEIS discusses wetlands and floodplains. Wetlands are subject to the Clean Water Act Section 404 and are defined as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

The discussion of wetlands and floodplains included in the 2001 DEIS remains valid. The 2001 DEIS indicated that there were no wetlands or floodplains affected by the Project. The National Wetlands Inventory was consulted to confirm whether any changes have occurred since the 2005 ROD. The NWI indicates that there are two drainage ponds near the Project limits at the GM Hamtramck Assembly Plant. Project construction activities will be located approximately 140 feet or more from these ponds. The ASAM brings the Project roadways further away from these ponds than the ASA had planned. All work in this area remains within the current highway/street rights-of-way. No additional comments on the ASAM’s potential impacts on wetlands and floodplains have been received from cooperating and participating agencies on this topic. There is no open ditching associated with this highly urbanized area.

The Project limits are outside of FEMA-mapped floodplains.⁸² Since the ASA and ASAM will not directly impact any floodplains or wetlands, the Project will not fall under the requirements of Executive Order 11988, *Floodplain Management*, which involves Projects associated with the occupancy and modification of flood plains, or Executive Order 11990, *Protection of Wetlands*, which involves avoiding and minimizing degradation of wetlands.

4.12.1.2. WILD AND SCENIC RIVERS AND NATURAL AREAS (NONE PRESENT)

No designated wild and scenic rivers or natural areas exist in the Project limits. The discussion of wild and scenic rivers and natural areas in Section 5.10.2 of the 2001 DEIS remains valid. No additional comments on this topic have been received from cooperating and participating agencies.

Similar to the ASA, the ASAM will not impact streams, lakes or drains and a EGLE Part 301 permit will not be required. No Section 404 or Section 10 permits and/or coordination with U.S. Coast Guard is required for this Project.

4.12.1.3. VEGETATION AND WILDLIFE

Vegetation

Vegetation is examined under Section 5.10.3 of the 2001 DEIS. Appendix K of the 2001 DEIS provides a list of vegetation within the Project limits. There have been no substantial changes to vegetation characteristics in the Project limits since the 2005 ROD. The terrestrial community in the Project limits is limited by urban land use. Upland flora is dominated by weedy herbaceous and shrub species. The herbaceous community consists of a predominance of species in the grass, mustard pea, and sunflower families. Shrubs identified were typical of borders of fields or lawns such as species in the willow, maple and honeysuckle families.

⁸² Federal Emergency Management Agency, 2012.

Wildlife

The discussion of wildlife in Section 5.10.3 of the 2001 DEIS remains valid. Wildlife is expected to be typical of urban and suburban environments with species such as sparrow, finch, cardinal, blue jay, robin, starling, and grackle, as well as other common birds. Mammal species known to be commonly present include opossum, raccoon, woodchuck, and fox squirrel. No reptile or amphibian species are expected to be present in the Project limits.

4.12.1.4. THREATENED AND ENDANGERED SPECIES

Section 5.10.4 of the 2001 DEIS discusses the Endangered Species Act of 1973 (ESA). The USFWS has jurisdiction over species that are listed on the Threatened and Endangered species lists. MDOT coordinated with the USFWS in 2017 to update the list of threatened and endangered species that may be present within the Project limits since the 2005 ROD. An updated list of species potentially affected by activities within the Project corridor is presented below.⁸³

Northern Long-eared Bat and Indiana Bat (Mammals)

In 2015 the USFWS listed the northern long-eared bat (*Myotis septentrionalis*) (NLEB) as a threatened species under the ESA. The Indiana bat (*Myotis sodalist*) has been a listed endangered species since 1967.

There are no wood lots or forested tracts present within 1.0 mile of the Project limits; land use is primarily urban with very little natural cover or habitat.

Eastern Massasauga Rattlesnake (Reptile)

In 2016 the USFWS listed the eastern massasauga rattlesnake (*Sistrurus catenatus*) as a threatened species under the ESA. This reptile occupies wet areas including wet prairies, marshes and low areas along rivers and lakes. They can also use adjacent uplands during part of the year. Regulated areas are delineated by the USFWS.

Red Knot (Bird)

In 2014, the USFWS listed the red knot (*Calidris canutus rufa*) as a threatened species under the ESA. This species of bird only needs to be considered for projects in coastal areas during the window of May 1 through September 30. No critical habitat has been designated for this species.

Northern Riffleshell (Clam)

The northern riffleshell (*Epioblasma torulosa rangiana*) is an endangered species listed in 1993. Its habitat includes wetlands, streams or rivers.

Eastern Prairie Fringed Orchid (Flowering Plant)

The eastern prairie fringed orchid (*Platanthera leucophaea*) was listed by USFWS in 1989 as a threatened species. The species occurs in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs. It requires full sun for optimum growth and flowering and a grassy habitat with little to no woody encroachment.

⁸³ U.S. Fish & Wildlife Service. (2018, September 6). IPaC Information for Planning and Consultation. Retrieved from U.S. Fish & Wildlife Service ECOS Environmental Conservation Online System: <https://ecos.fws.gov/ipac/>.

4.12.1.5. GEOLOGICAL RESOURCES

Potential impacts to geological resources are discussed in Section 5.10.5.2 of the 2001 DEIS and the discussion remains valid for the ASAM. Topography will be altered by cut-and fill activities necessary to prepare and construct the new typical section of I-94. However, the ASAM is not expected to affect the geological composition of the Project area since the area is largely disturbed already through the years of highway and urban development. No geologic impacts are anticipated, and no related mitigation measures proposed.

4.12.1.6. SOILS

The 2001 DEIS discussed soils in Section 5.10.6 and the discussion remains valid for the ASAM. The glacial till soils present in the Project area are typical of the upper Midwest and are clay-rich and less prone to erosion. The soils in this urbanized area have been disturbed previously during construction of the existing roads, railroads, and structures.

4.12.2. Impacts to Natural Resources

4.12.2.1. VEGETATION AND WILDLIFE

Similar to the ASA, the ASAM will not adversely impact vegetation or wildlife. Both the ASA and ASAM will disturb existing grassy slopes and terraces adjacent to the freeway and service drives and the areas within the interchanges and vacant lots. Some residential or commercial ornamental landscaping may be removed during construction but will be replaced under the Project's design guidelines. The *I-94 Rehabilitation Project Corridor Design Guidelines* adopted in 2010 serves to increase the number of shrubs and trees over what was originally proposed with the ASA. Wildlife will be disturbed and displaced within the limited and temporarily impacted areas. Since there have been no substantial changes in the landscape and since landscape plans have been adopted by MDOT, the 2004 FEIS's findings of no impact remains valid for the ASAM.

4.12.2.2. THREATENED AND ENDANGERED SPECIES

Northern Long-Eared Bat and Indiana Bat (Mammals)

In coordination with the USFWS, MDOT has determined that no further review or coordination is required because there are no wood lots or forested tracts present within 1 mile of the Project limits; that the land use is primarily urban with very little natural cover or habitat, and that the corridor supports high vehicular traffic volumes that are likely disruptive to the Indiana Bat and the NLEB.

Based upon reviews and discussions regarding urban land use with the USFWS, MDOT assumes the removal of trees within the Project area will have no seasonal restrictions. In a letter from USFWS, MDOT received concurrence indicating that the proposed project "will not affect" the Indiana Bat or the NLEB (see **Appendix D**).

Eastern Massasauga Rattlesnake (Reptile)

MDOT biologists found no regulated habitat in the Project limits. The Project will have no effect on the eastern massasauga rattlesnake. No further review or coordination is needed with USFWS.

Red Knot (Bird)

The Project is not within a coastal area and therefore will have no effect on the red knot. No further review or coordination is needed with USFWS.

Northern Riffleshell (Clam)

No wetlands, streams or rivers are present in the Project limits and the Project will have no effect on the northern riffleshell. No further review or coordination is needed with USFWS.

Eastern Prairie Fringed Orchid (Flowering Plant)

Highly developed urban areas such as defined by the Project limits do not support this species. The Project will have no effect on the eastern prairie fringed orchid. No further review or coordination is needed with USFWS.

4.12.2.3. SOILS

Some disturbance of terrain will be involved in construction. Whenever this happens, there is the possibility of erosion. The ASA and the ASAM would disturb soils similarly and the impacts associated with the Project will be minor with the implementation of an erosion control plan during construction.

4.12.3. Mitigation of Impacts to Natural Resources

4.12.3.1. WETLANDS AND FLOODPLAINS

No impacts to wetlands and floodplains are anticipated and no related mitigation measures are proposed.

4.12.3.2. WILD AND SCENIC RIVERS AND NATURAL AREAS

No impacts to wild and scenic rivers or natural areas are anticipated and no related mitigation measures proposed.

4.12.3.3. VEGETATION AND WILDLIFE

The 2004 FEIS's mitigation measure is amended to include the *I-94 Rehabilitation Project Corridor Design Guidelines* adopted in 2010. Ornamental trees and plants that are removed for construction of the Project will be replaced in kind with native woody and herbaceous species to the extent practicable. During final design, MDOT will consider additional landscaping consistent with the Guidelines.

The provisions of the Migratory Bird Treaty Act apply to removal of nests prior to demolition and construction. MDOT will add a Special Provision for "Migratory Bird Protection" to the final design plans. The provision will include adhering to restrictions on any bridge work potentially affecting actively nesting birds. The contractor is responsible for determining the presence of migratory birds and following prescribed actions depending on whether the work is to be done during nesting season, which is generally considered to be between April 15 to September 1.

4.12.3.4. SOILS

No mitigation measures were identified in the 2004 FEIS. However, MDOT will include an erosion control plan in the final design plans that will be implemented during construction. The plan will require installing and maintaining temporary and permanent soil erosion control measures to minimize erosion and to keep eroded material from running off into adjacent waterways and properties and revegetating exposed areas as soon as possible after construction is complete. Erosion control measures for the plan will be developed in coordination with EGLE and MDOT in compliance with Chapter 2.05 (Erosion Controls – General) of the *Michigan Design Manual Road Design*.⁸⁴

⁸⁴ Michigan Department of Transportation. (1997, October 10). Section 2.05 Erosion Controls – General. Michigan Design Manual Road Design (SI) Volume 3. Michigan Department of Transportation.

MDOT will investigate opportunities to reduce the need to landfill soils removed from slopes, including coordinating with local groups to re-use clean soil in neighborhood projects or within the Project limits.

4.13. Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 (as amended) requires federal agencies to consider the effects of their undertakings on historic properties. Historic properties consist of historic and archeological resources, including Traditional Cultural Properties, that are listed on or eligible to be listed in the National Register of Historic Places (NRHP). Section 1.5.14 of the 2004 FEIS discusses cultural resources. MDOT signed a memorandum of agreement (2005 MOA) with the State Historic Preservation Officer (SHPO) and FHWA in 2005 (see **Appendix K**), which outlines mitigation measures for adverse impacts to historic resources. MDOT resurveyed cultural resources for the ASAM and the findings of those studies are discussed in the following sections. The 2005 MOA was also re-examined and amendments to it are proposed in the sections below.

4.13.1. Historic Resources and Archaeological Sites and Traditional Cultural Properties

MDOT has identified historic and archeological resources that may be affected by the ASAM in accordance with the requirements of Section 106 of the Historic Preservation Act and 36 CFR 800 (Section 106). This section identifies these resources, their significance, eligibility for the National Register of Historic Places (NRHP), and potential effects on them. To be eligible for the NRHP, properties must meet certain criteria as described in the box below.



What is the National Register of Historic Places?

The NRHP is the official list of the United States' historic, archaeological, and other culturally important properties. To be listed in the NRHP, the property must meet certain criteria. Properties listed on or eligible to be listed in the NRHP have certain protections under Section 106 of the National Historic Preservation Act.

- Criterion A: Event: Properties associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B: Person: Properties associated with the lives of persons significant in the past
- Criterion C: Design/Construction: Properties that embody distinctive characteristics of a type, period or method of construction, or high artistic value
- Criterion D: Information Potential: Properties that have yielded or may be likely to yield information important to prehistory or history

To mitigate effects, a Memorandum of Agreement (MOA) will be executed with the Federal Highway Administration, Advisory Council on Historic Places, Michigan State Historic Preservation Office, and Michigan Department of Transportation. **Appendix K** includes the 2005 MOA executed with the 2005 ROD. An executed MOA will be issued with the Combined FSEIS and ROD.

The resources discussed in this section are also protected under Section 4(f) of the DOT Act. **Chapter 5** discusses alternatives to avoid, minimize, or mitigate impacts to Section 4(f) resources.

4.13.1.1. EXISTING ARCHAEOLOGICAL SITES AND TRADITIONAL CULTURAL PROPERTIES

The Commonwealth Heritage Group Inc. in 2018 conducted an assessment of archaeological potential to evaluate areas that were not previously investigated in the 2001 DEIS. MDOT and FHWA developed a new Area of Potential Effect (APE) to account for the ASAM construction limits. The study, except for an unmarked cemetery discussed below, did not identify any archaeological sites listed on or eligible for listing in the NRHP or archaeologically sensitive locations within the new APE that warrant additional investigation. In addition, MDOT consulted with Michigan Indian Tribes and no cultural sites of concern have been identified (see tribal consultation letters in **Appendix D**).

The unmarked cemetery referenced above is near the I-94/Conner Avenue interchange. The site is known variously as the Detroit City Cemetery, Conner Creek Cemetery, and archaeological site 20WN383. A stone monument standing near the intersection of Gunston and Hern streets, just east of the interchange, memorializes the cemetery. This site was previously determined not eligible for listing in the NRHP by the SHPO, though it is listed on the State Register of Historic Sites. While not subject to further investigation under the regulations of Section 106, MDOT conducted ground-penetrating radar survey of MDOT right-of-way at the I-94/Conner Avenue interchange in 2013 but found no evidence of graves.

4.13.1.2. EXISTING HISTORIC RESOURCES

MDOT and FHWA developed a new APE for above-ground resources (including buildings, structures, sites, objects or districts) to account for the ASAM. The APE included the areas where there may be direct impacts, impacts to views to or from historic resources, impacts from noise or vibration, and where the Project may affect the setting of a historic property.

Commonwealth Heritage Group completed a reconnaissance and intensive level survey of the APE to update the historic property survey conducted for the 2001 DEIS. The survey encompassed 7.09 miles west/east and 2 miles north/south comprising 1,108.9 acres of land.⁸⁵ The updated survey identified properties within the APE that are listed in the NRHP; are determined eligible for the NRHP; or are potentially eligible for the NRHP. These properties are mapped in **Figure 4-5**, **Figure 4-6** and **Figure 4-7** and described more fully in the survey reports.

MDOT, in consultation with SHPO, determined that six of the identified historic properties (listed in **Table 4-12**) will be adversely affected by construction of the ASAM. Properties not identified in the 2004 FEIS but recommended as eligible for the NRHP include the house at 5832 Second Ave., the Hendrie Street Historic District, Elenora Apartments building at 447-449 Antoinette, Gemmer Manufacturing Company complex and the S.T. Gilbert Terminal complex. The following sections describe the properties that were not considered historic in the 2004 FEIS.

S.T. Gilbert Terminal

The S.T. Gilbert Terminal complex at 5600 Wabash St., constructed in 1947-1948 by the Detroit Department of Street Railways, now Detroit Department of Transportation (DDOT). The facility houses repair, storage, and administrative operations for a portion of the DDOT fleet. It is of Mid-Century Modern architectural style and is representative of the evolving role of public transportation in Detroit. The site illustrates the change at the time in commuter transportation from streetcars to buses. S.T. Gilbert Terminal is eligible for the NRHP under Criteria A and C.

⁸⁵ Commonwealth Heritage Group, Inc. (July 2019). I-94 Modernization Project: Above-Ground Reconnaissance and Intensive Level Survey, City of Detroit, Wayne County, Michigan. Lansing, Michigan: Michigan Department of Transportation.

House at 5821 Second Ave. (Demolished in 2018)

The 2005 FEIS found that the house at 5821 Second Ave. was ineligible for the NRHP. In consultation with SHPO, MDOT determined that it should be re-evaluated for eligibility. In 2018 MDOT re-evaluated the property and was prepared to recommend it as potentially eligible under Criterion C (Architecture) as an uncommon example of a Dutch Colonial Revival variant, inspired by urban Dutch Colonial townhouse architecture of New York. The house was the work of architect Harry C Stevens. However, Project environmental consultants identified the building as an imminent danger to public safety due to its structural condition and emergency demolition was conducted in December 2018. The building being no longer extant cannot be included in the NRHP.

House at 5832 Second Ave.

The two-story Prairie Style house at 5832 Second Ave. is situated between United Sound Systems Recording Studios (USSRS) and I-94. The building was constructed in 1916 and it retains integrity of location, design and materials, but is of a common type and design found throughout Detroit. Additional research indicates the house at 5832 Second Ave. is eligible under NRHP Criterion B because of its association with Mrs. Emma Fox, a locally prominent socialite and nationally recognized parliamentarian with a focus on helping improve the effectiveness of women's organizations.

Elenora Apartments

This 0.133-acre site at 447-449 Antoinette St. contains a 3-story apartment building built in 1913. In its current condition it retains a satisfactory level of historic integrity. The building, however, is of a relatively standard design representing a popular design trend for small apartment buildings of that time period. It does not carry any strong historical associations.

The property's setting is isolated and has recently changed with the demolition of the adjacent Floradora Apartments immediately to the west at 467 Antoinette St. and the construction of metal-clad storage building. The building is considered NRHP eligible based on the *Apartment Buildings of Detroit Multiple Property Documentation Form*.⁸⁶

Hendrie Street Historic District

The potentially eligible Hendrie Street Historic District is comprised of eight buildings along Hendrie Street between John R Street and Brush Street, on the south side of Hendrie Street, parallel to and south of I-94. The potential Hendrie Street Historic District includes one single-family home, five duplexes, one three-unit rowhouse, and an apartment building. All located along the south side of Hendrie Street, the buildings represent the variety of middle- and upper-middle class housing that once dominated the area. The houses were the residences of factory workers and managers, salesmen, teachers, and secretaries.

Each of the brick structures retains a good level of historic integrity and is representative of the late nineteenth- and early twentieth-century residences in Detroit. With only minor exceptions, the buildings retain their integrity of design, materials, and workmanship. The proposed district continues to convey the feeling and association of the neighborhood. The district is recommended eligible for listing in the NRHP under Criteria A and C.

Gemmer Manufacturing Company

The Gemmer Manufacturing Company industrial complex at 6400 Mt. Elliott St. is located on the northeast corner of the intersection of Harper Avenue and Mt. Elliott Street. The property is significant for its role in the industrial growth of Detroit, particularly relative to the automobile and supplier industry and as a manufacturer of goods used by the United States military in World War II and the Korean conflict.

The building is an excellent example of industrial architecture from the early twentieth century and the complex retains integrity of design. Gemmer Manufacturing Company is recommended eligible for listing in the NRHP under Criteria A.

⁸⁶ Quinn Evans Architects. National Register of Historic Places Multiple Property Documentation Form – Apartment Buildings in Detroit, 1892-1970, Wayne County, Michigan. Form prepared by Ruth E. Mills, Architectural Historian, et. al. 2018.

Table 4-12: Impacted Historic Resources in the I-94 Area of Potential Effect

Address	Historic Name	NRHP Status	Type of Impact
Multiple vacant properties along West Edsel Ford Service Drive between Wabash Street and Trumbull Avenue	Woodbridge Historic District	Listed	Adverse effect
5287 Hecla St.	House. Contributing element in the Woodbridge Neighborhood Historic District	Listed	Adverse effect
I-94/M-10 Interchange	Ford-Lodge Interchange	Determined eligible	Adverse effect
5832 Second Ave.	House	Recommended eligible	Adverse effect
5840 Second St.	United Sound System Recording Studios	Determined eligible	Adverse effect
447-449 Antoinette St.	Elenora Apartments	Determined eligible	Adverse effect
6060 Rivard St.	Square D/Detroit Fuse and Manufacturing Company	Determined eligible	Adverse effect
5600 Wabash St.	S.T. Gilbert Terminal	Recommended eligible	No adverse effect/ <i>de minimis</i>
6400 Mt. Elliott St.	Gemmer Manufacturing Co.	Recommended eligible	No adverse effect/ <i>de minimis</i>

Source: I-94 Modernization Project: Above-Ground Reconnaissance and Intensive Level Survey. Commonwealth Heritage Group Inc. 2018.

Figure 4-5: Historic Resources and Parks and Recreation Areas Inventory Maps: I-96 to M-10 from Grand Boulevard to Martin Luther King Jr. Boulevard

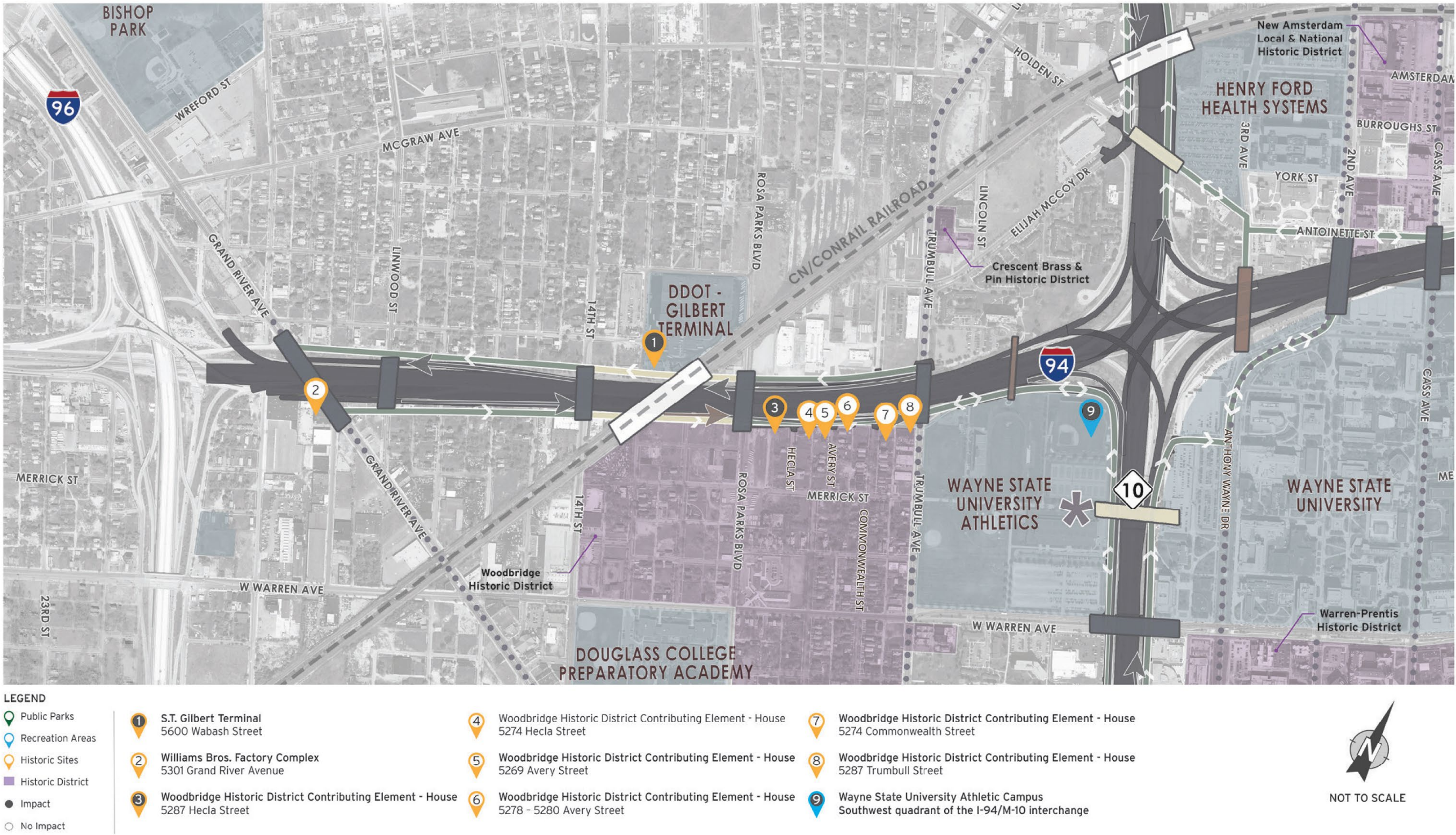


Figure 4-6 Historic Resources and Parks and Recreation Areas Inventory Maps: M-10 to I-75

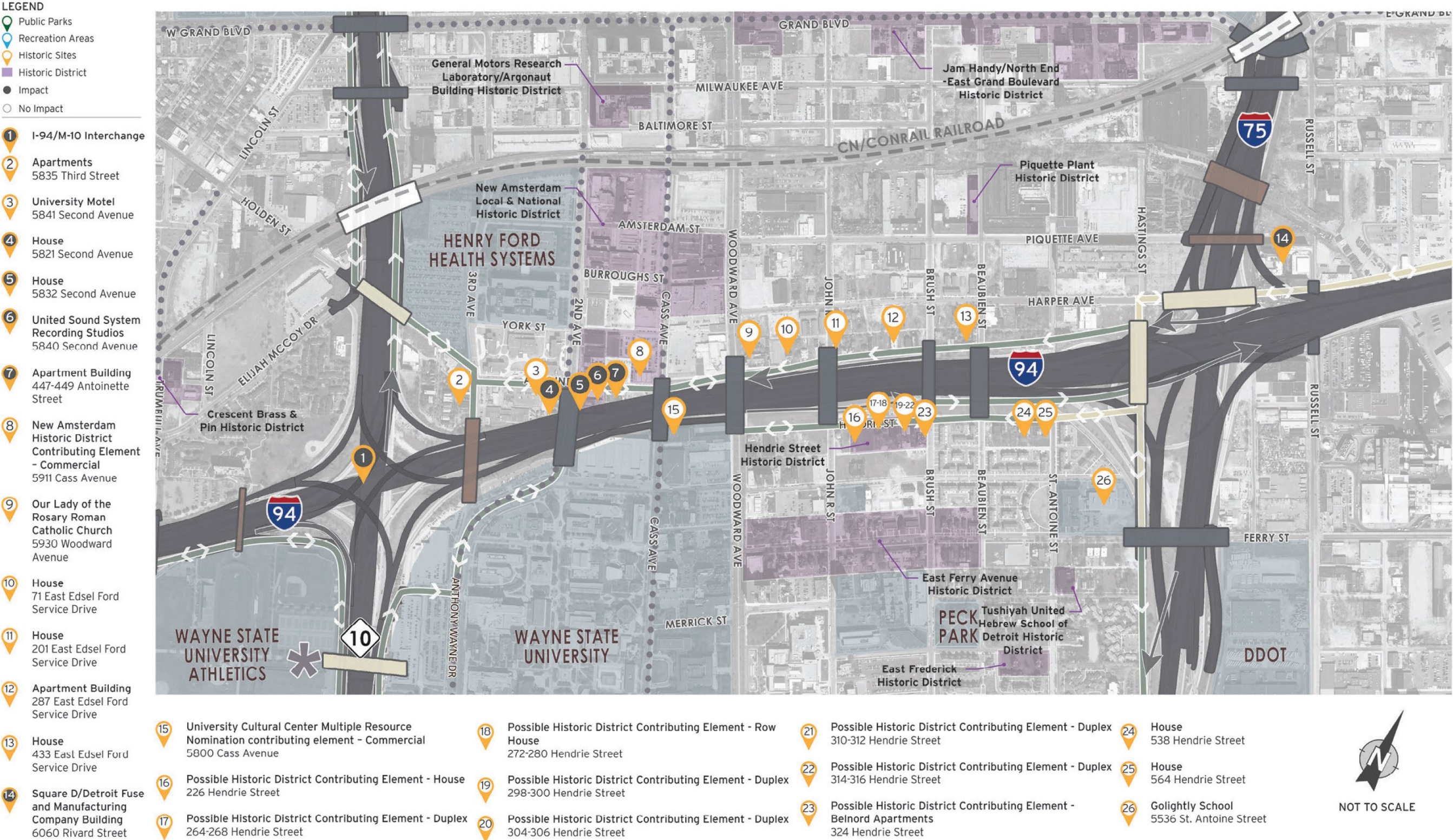


Figure 4-7: Historic Resources and Parks and Recreation Areas Inventory Maps: Trumbull Avenue to Dequindre Street and M-10 from Grand Boulevard to Martin Luther King Jr. Boulevard

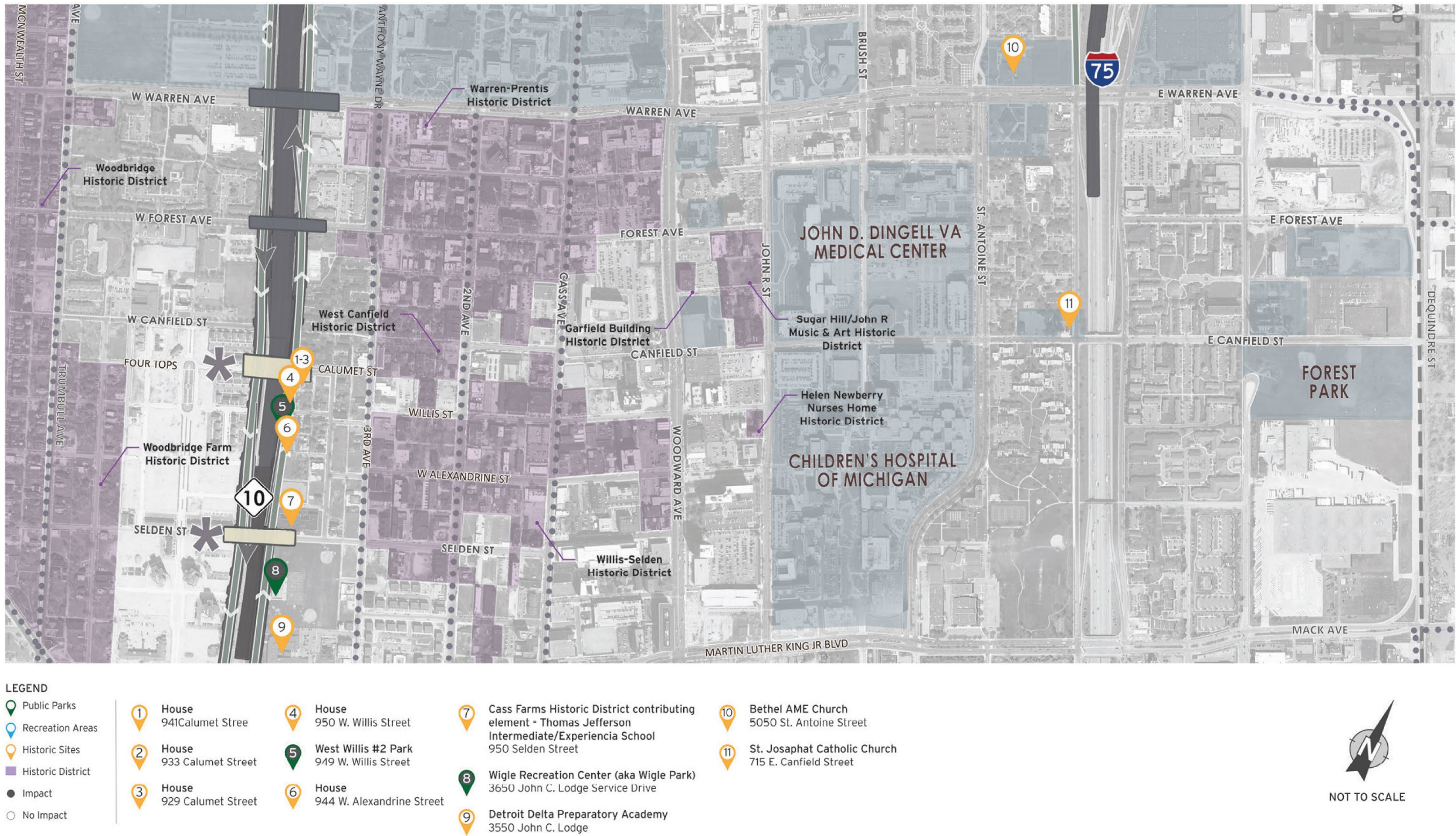


Figure 4-8: Historic Resources and Parks and Recreation Areas Inventory Maps: St. Aubin Street to Van Dyke Avenue



Figure 4-9: Historic Resources and Parks and Recreation Areas Inventory Maps: Burns Avenue to Barrett Avenue



4.13.2. Impacts to Historic Resources and Archaeological Sites and Traditional Cultural Properties

4.13.2.1. IMPACTS TO ARCHAEOLOGICAL SITES AND TRADITIONAL CULTURAL PROPERTIES

Based on the 2018 archaeological report prepared by Commonwealth Heritage Group Inc., and in consultation with the MDOT Archaeologist and SHPO staff, including the state archaeologist, and MDOT and Michigan Indian Tribes, the Project will have no effect on archaeological sites or Traditional Cultural Properties listed on or eligible for listing in the NRHP.⁸⁷

4.13.2.2. IMPACTS TO HISTORIC RESOURCES

The adverse effects cited in the 2004 FEIS remain valid and include the previously identified effects to 5287 Hecla St. in the Woodbridge Neighborhood Historic District, the I-94/M-10 interchange, USSRS, and the Square D/Detroit Fuse and Manufacturing Company Building as acknowledged in the 2005 ROD. This section discusses changes or refinements in the assessment of effects of the ASAM on historic properties.

Woodbridge Neighborhood Historic District (Adverse Effect)

Like the ASA, the ASAM will acquire a 0.091-acre lot that contains the house at 5287 Hecla Street, which is a contributing element in the NRHP-registered Woodbridge Neighborhood Historic District. Other right-of-way acquisition impacts within the Historic District include 0.764 acres of permanent right-of-way and 0.131 acres of temporary right-of-way along the West Edsel Ford Service Drive. This land will be required for grading during construction to replace sidewalks and to construct improvements to West Edsel Ford Service Drive (see **Appendix I**, Page I-11). No structures are present on these affected lots.

S.T. Gilbert Terminal (No Adverse Effect)

The ASAM will require 0.068 acres of permanent property acquisition along the southern boundary of the potentially NRHP-eligible S.T. Gilbert Terminal site. This acquisition accommodates the extension of the Edsel Ford Service Drive from Wabash Street to Rosa Parks Avenue. There will also be 0.043 acres of temporary impacts along the southern boundary for grading during construction (see **Appendix I**, Page I-7). These impacts would not be an adverse effect because no structures would be affected, and the ASAM would not alter, directly or indirectly, the characteristics of the property that would qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property. MDOT proposes a determination of no adverse effect under Section 106, which may qualify for a finding of *de minimis* impact under Section 4(f) (see **Chapter 5** for further discussion).

I-94/M-10 Interchange (Adverse Effect)

The ASAM does not change the need to redesign the I-94/M-10 interchange and it continues to be an adverse effect, (see **Appendix I**, Page I-6).

United Sound Systems Recording Studio (Adverse Effect)

With the ASA, the USSRS building was proposed to be demolished and mitigation measures are included in the 2005 MOA (see **Appendix K**). MDOT studied design alternatives to avoid the building. Avoidance alternatives are

⁸⁷ Commonwealth Heritage Group, Inc. (June 2018). I-94 Modernization Project: Land Use History and Assessment of Archaeological Potential, City of Detroit, Wayne County, Michigan. Dexter, Michigan: Commonwealth Heritage Group, Inc.

described in the matrix in **Appendix I**, Page I-15. MDOT presented the alternatives to SHPO in a meeting on May 7, 2018. Due to the elevated risk of damage during construction, MDOT and SHPO agreed impacts cannot be avoided. MDOT and SHPO discussed the potential of relocating the USSRS as an option to maintain the building. The suggested location for the relocation would be a parking lot (also owned by the USSRS property owner) adjacent to the north side of the current building location, which is on the corner of Second Avenue and Antoinette Street. The impacts to the USSRS site are illustrated in **Appendix I**, Page I-9.

5821 Second Ave. House (Demolished)

This 0.28-acre site has been acquired by MDOT and was demolished earlier than anticipated when it was determined to be an imminent public safety hazard. Since it was demolished, it is no longer eligible for listing in the NRHP. However, it is retained in this discussion because it was identified for re-evaluation during the DSEIS process.

5832 Second Ave. House (Adverse Effect)

The house at 5832 Second Ave. is located adjacent to USSRS and is also impacted by changes to the I-94/M-10 interchange ramp. During reevaluation, it was determined that 5832 Second Ave. is eligible for listing in the NRHP. The 0.10-acre site will be acquired and demolished. The impacts are illustrated in **Appendix I**, Page I-9. As the building appears to be NRHP eligible, demolition would pose an adverse effect.

Elenora Apartments – 447-449 Antoinette Street (Adverse Effect)

The Elenora apartment building is located near USSRS and is also impacted by changes to the I-94/M-10 interchange ramp. The 0.133-acre site will be acquired and the building demolished, which would be an adverse effect. The impacts are illustrated in **Appendix I**, Page I-9.

Hendrie Street Historic District (No Adverse Effect)

Project improvements within the potential Hendrie Street Historic District include changes to Hendrie Street that will result from the design of the Brush Street service interchange, just west of I-75. This interchange is close enough to the potential Hendrie Street Historic District that the ramp improvements need to extend west toward the potential historic district. The ASA would have eliminated Hendrie Street between Woodward Avenue and St. Antoine Street and replaced it with continuous one-way westbound service drives. The ASA was strongly opposed by the city of Detroit because it eliminated existing connections.

The ASAM reconnects Hastings Street from Ferry Street to Harper Avenue with a new bridge crossing over I-94; extends Hendrie Street to a new Hastings Street extension; and converts Hendrie Street to two-way traffic flow. These design changes reestablish the street grid pattern improving local connectivity. To meet FHWA interstate access requirements, this alternative proposes a one-way eastbound Service Drive that connects the eastbound I-94 exit and entrance ramps and parallels Hendrie Street to the north. The ASAM avoidance alternative closely matches the existing roadway configuration adjacent to the potential Hendrie Street Historic District. The ASAM does not alter, directly or indirectly, the characteristics of the district that qualify it for inclusion in the NRHP. MDOT proposes a determination of no adverse effect under Section 106.

Square D/Detroit Fuse and Manufacturing Company (Adverse Effect)

The ASAM does not change the need to acquire the site of Square D/Detroit Fuse and Manufacturing Company Building at 6060 Rivard St. in the northeast quadrant of the I-75/I-94 interchange. The site will continue to be impacted by the extension of Harper Avenue through the interchange and by the ramp from westbound I-94 to

northbound I-75. Impacts are illustrated in **Appendix I**, Page I-8, and include 2.966 acres of permanent property acquisition, which adversely affect the property.

Gemmer Manufacturing Company (No Adverse Effect)

The ASAM will acquire 0.689 acres of permanent right-of-way at the Gemmer Manufacturing Company complex. An additional 0.148 acres of temporary right-of-way impacts will occur for grading during construction. These impacts are located on the southeast portion of the site as shown in **Appendix I**, Page I-5. No structures will be affected, and the impacts will be limited to the parking and transportation related areas of the site. The ASAM will not alter, directly or indirectly, the characteristics of the property that qualify it for inclusion in the NRHP. MDOT proposes a determination of no adverse effect under Section 106, which may qualify for a finding of *de minimis impact* under Section 4(f) (see **Chapter 5** for further discussion).

4.13.3. Mitigation of Impacts to Historic Resources and Archaeological Sites and Traditional Cultural Properties

4.13.3.1. ARCHAEOLOGICAL SITES AND TRADITIONAL CULTURAL PROPERTIES

Regarding the unmarked cemetery located in or near the I-94/Conner Avenue interchange, MDOT is committed to pursuing due diligence given the possibility that human remains may be present. Once design plans are sufficiently detailed to determine where Project impacts will take place in the vicinity of the unmarked cemetery, MDOT will take appropriate measures to ensure that any human remains, if present, are treated appropriately and in accordance with Michigan law and legal mandates.

4.13.3.2. HISTORIC RESOURCES

The 2005 MOA executed with the 2005 ROD is still valid and addresses the mitigation of impacts to properties identified in the 2004 FEIS (see **Appendix K**). Stipulations contained in the 2005 MOA have not been carried out since the parts of the Project subject to Section 106 have not yet been constructed. MDOT will amend the 2005 MOA to address the findings of the updated historical and archaeological surveys. Coordination with SHPO and consulting parties will continue. Comments on historic properties that are received will be considered and reported in the Combined FSEIS and ROD.

Typically, unavoidable historic property impacts from MDOT projects are, at a minimum, mitigated by the preparation of photographic and historical documentation prepared according to SHPO guidelines. Such documentation is deposited into the Michigan History Center Archives and other repositories as recommended by SHPO.

4.14. Energy

Energy will be used to construct the Project. The overall effect of the ASA on transportation energy usage was expected to be limited (see Section 5.12 of the 2004 FEIS). The findings of the 2004 FEIS remain valid for the ASAM and are updated and summarized in this section.

4.14.1. Energy Impacts

Improvements to traffic flow and speeds will result in fuel savings to motorists over the long term. Stop and go traffic is very fuel inefficient. Increased capacity on I-94 will reduce congestion and the extent of stop and go traffic. Motorists will be able to maintain more constant traveling speeds on the freeway. The additional lane will allow

4.15. Utilities

greater ability to move around incidents. Travel on freeways is more fuel efficient than travel on arterial streets, which are controlled by traffic signals, causing all traffic to stop at some point.

The additional capacity provided by the Project accommodates the projected 35% increase in the number of vehicle miles traveled (VMT) in the Project limits. This may result in an increase in fuel consumption by motorized vehicles using I-94 and the service drives. The increase in VMT and fuel consumption is small when compared to the total VMT in the Detroit metropolitan area. According to the SEMCOG 2040 RTP for Southeast Michigan, the total VMT in the region is forecasted to grow by 7% from 115 million VMT to 123 million VMT.⁸⁸

Reduced congestion may allow motor vehicles to operate more efficiently. The increased efficiency will offset, at least in part, the increased fuel usage resulting from more vehicle miles traveled. In addition, vehicles that might have diverted travel to avoid a congested I-94, may now stay on an improved I-94.

4.14.2. Energy Mitigation

There are no significant impacts related to energy and no mitigation measures are proposed.

4.15. Utilities

Utilities are discussed in Section 5.13 of the 2001 DEIS. The assessment remains valid and is summarized here.

All types of utilities are present in the corridor and will need to be identified prior to construction in coordination with the utility owners and providers. MDOT has met with utility providers, including the Public Lighting Authority, Public Lighting Department, Wayne County, Detroit Water and Sewerage Department, Great Lakes Water Authority, SEMTOC, DTE Gas-Electric-Energy Electric and Gas, Detroit Thermal, AT&T, Energy Group, Comcast, Western Tel-Com, ITC, Wayne State University, and Sprint to share Project information and gather data on existing utilities.

4.15.1. Mitigation for Utility Impacts

MDOT will continue coordination with utility providers prior to and during construction to avoid and minimize service disruptions. Utility owners will be responsible for relocating utility infrastructure prior to and during construction. Disruption of utility service will be temporary, and residents and businesses will be notified in advance. See also **Section 4.16.10** regarding disruption of utilities during construction.

4.16. Construction Impacts and Mitigation

Project construction impacts are reported in Section 5.14 of the 2004 FEIS. Impacts of the ASAM will not be substantially different than reported for the ASA. Construction impacts to build the ASAM are unavoidable and short-term in nature and will be felt by residents and travelers while construction activities take place. The following sections discuss each type of impact that is characteristic of highway construction.

⁸⁸ SEMCOG. (June 2013 (Revised May 3, 2018)).

4.16.1. Traffic Flow

4.16.1.1. IMPACTS

Like the ASA, the ASAM will result in temporary impacts to traffic flow while improvements are constructed. Impacts will vary in location and duration and will be unavoidable. Potential impacts include traffic congestion on the interstate and adjacent streets. No upgrades are anticipated to local roadways to accommodate the detours. MDOT worked with transit providers in the region to identify potential impacts to transit. Through this coordination, MDOT identified the need to coordinate with the transit agencies in the region and to notify travelers of construction activities that may affect them during the duration of construction.

4.16.1.2. MITIGATION

Disruption of traffic in the construction area will be minimized to the extent possible. A public awareness and information program will inform residents, businesses, trucking companies and other travelers about the I-94 construction schedules, ramp closings, alternative routes, and other matters affecting travel in and through the area. MDOT will implement Active Transportation and Demand Management (ATDM) strategies and will continue to work with transit providers to add transit service to help alleviate congestion and improve safety.

The construction phasing will include planned local community connections when feasible prior to the construction of mainline I-94. Adding these local community connections that do not exist today will help to keep local traffic that was utilizing the I-94 Freeway for local trips on the local roadway network. Construction of the I-94 mainline is anticipated to start in 2023 and continue through 2036 based on the current funding structure. Three construction staging options are being considered including:

- Part-width construction, where two lanes of traffic will be maintained in each direction;
- Directional closures, where one direction of travel on I-94 will remain open and the opposite direction will be detoured to other state roadways; and
- Full closure, where both directions of travel on I-94 will be detoured onto other state roadways.

The duration of ramp closings will be minimized to the extent practicable, and where possible, adjacent ramps will not be closed at the same time. Incentive Penalty Clauses can be included in construction contracts to encourage speedy construction and minimize the duration of construction. Through-traffic that does not elect to use suggested detours will be encouraged to use alternate routes and/or transit service through the ATDM system. Traffic management measures such as signage and temporary barricades will be used on non-arterial local streets to discourage through-traffic on local streets. Michigan Avenue (US-12) and Gratiot Avenue (M-3) will serve I-94 traffic traveling to and from Detroit's Central Business District. Adaptive traffic signal control will be used on Michigan Avenue and Gratiot Avenue to mitigate spikes in traffic volumes.

Informational signage encouraging the use of alternative routes will be erected as far away as Port Huron and Ann Arbor as well as within the work zone. It is expected that these efforts will reduce travel on I-94 in the Project area so that the available lanes will be adequate during most times other than the morning and afternoon peak periods. In addition, MDOT will utilize techniques to reduce travel demand, construction duration, and minimize community impacts, such as:

- Encouraging carpooling through advertising campaigns, pool development, and planning.
- Using existing and proposed ITS facilities to inform motorists and redirect to routes outside of the construction zone.

4.16. Construction Impacts and Mitigation

- Providing an information campaign that announces identified alternate travel routes prior to construction and informs residents of upcoming construction and suggesting alternative travel options and routes.
- Working with Regional Transit Authority (RTA), Suburban Mobility Authority for Regional Transportation (SMART), and Detroit Department of Transportation (DDOT) to divert transit away from construction activities to alternate routes such as Gratiot Ave and Michigan Ave to provide circulation for residents within the Project area.
- Working with RTA, SMART, and DDOT to determine if adding bus service from urban and suburban areas with sizable volumes of traffic heading downtown or to major employers would reduce traffic volumes through the construction area.

Although drivers' personal travel patterns might be disrupted, access to homes and businesses will be maintained. Continuing coordination between MDOT, the contractor, and local businesses will be conducted to inform business owners or managers of construction activity schedules and to inform the contractor of any special needs of the businesses.

4.16.2. Emergency Services**4.16.2.1. IMPACTS**

Like the ASA, construction of the ASAM will affect emergency response during temporary road closures and access changes. Construction traffic congestion will also affect emergency response.

Emergency services are provided by the Detroit Police Department and the Detroit Fire Department, which provides ambulance treatment and transport services in addition to fire response. The Detroit Homeland Security & Emergency Management (DHSEM) coordinates local, regional, state, federal and private-sector agencies and is responsible for a wide range of emergency management activities.

The assessment of impacts to emergency services during construction that was reported in the 2004 FEIS is still valid. Emergency vehicle routes (police, fire, and ambulance) will need to be re-established along I-94 between M-10 and I-75 where vehicular bridges will be removed.

4.16.2.2. MITIGATION

MDOT and the appropriate emergency services agencies will cooperatively develop an emergency response plan to be implemented during construction to maintain emergency services within the Project limits. Final design plans will be shared with DHSEM to include in amended comprehensive emergency response plans.

4.16.3. Air Quality**4.16.3.1. IMPACTS**

I-94 construction will take place in different locations along the corridor over multiple construction seasons. During each construction season there would be localized increased emissions from construction equipment and particulate emissions from construction activities.

4.16.3.2. MITIGATION

Particulate emissions, whether from construction equipment diesel exhaust or dust from the construction activities, should be controlled as well as possible. Contractors should follow all MDOT's Standard Specifications for Construction that address the control of construction equipment exhaust or dust during construction. Standard Specification for Construction sections 107.15(A) and 107.19 will apply to control fugitive dust during construction

4.16. Construction Impacts and Mitigation

and cleaning of haul roads. MDOT's anti-idling policy (Policy #10179) will address unnecessary engine idling of vehicles and equipment.

While not required, there are several measures that could be considered to reduce engine activity or reduce emissions per unit of operating time. Operational agreements that reduce or redirect work or shift times to avoid community exposures can have positive benefits. Also, technological adjustments to construction equipment, such as off-road dump trucks and bulldozers, could be an appropriate strategy. The EPA recommends Best Available Diesel Retrofit Control Technology (BACT) to reduce diesel emissions. Typically, BACT requirements can be met through the retrofit of all diesel-powered equipment with diesel oxidation catalysts or diesel particulate filters, and other devices that provide an after-treatment of exhaust emissions.

Other strategies that could be considered during construction include:

- Apply water suppression to active construction areas to minimize dust.
- 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.
- Maintain properly tuned equipment.

4.16.4. Erosion and Sedimentation Control

4.16.4.1. IMPACTS

Construction activities such as demolition, excavation, grading, and equipment staging may cause soil erosion. Without erosion control measures, sediments may enter storm sewers, which eventually lead to the Detroit River. Such erosion could occur during construction activities, but also could result in permanent adverse impacts to downstream waters and off-site properties if not properly controlled.

4.16.4.2. MITIGATION

EGLE designated MDOT as an Authorized Public Agency (APA) for implementation of the Public Act 451 Natural Resources and Environmental Protection, Part 91 (Soil Erosion and Sedimentation Control). The intent of Act 451 is to protect the waters of the state by minimizing erosion and controlling sediment. MDOT has implemented a program and procedures to comply with soil erosion and sedimentation control regulations. Grading activities within

MDOT right-of-way are conducted in accordance with Part 91. EGLE may inspect and enforce soil erosion and sedimentation control practices during construction to ensure that MDOT and the contractor follow Part 91 rules and regulations.

MDOT's *Soil Erosion and Sedimentation Control Manual* (April 2006), in conjunction with MDOT's Standard Specifications for construction, has been developed to aid in the selection and application of adequate control measures during Project development and delivery.

MDOT's approved operating erosion and sedimentation control program on file with EGLE will ensure compliance with Part 91, Soil Erosion and Sedimentation Control Act 451 as amended. MDOT's standard soil and erosion control measures are considered best management practices (BMPs).

As such, the following measures will be taken to minimize soil erosion and sedimentation during construction:

- Soil and erosion and sedimentation control measures will be followed as set forth in MDOT's *Soil Erosion and Sedimentation Control Manual* (April 2006).
- An earth change plan conforming to rule R323.1703 and as directed by the MDOT's *Soil Erosion and Sedimentation Control Manual* (April 2006) will be prepared by MDOT for any earth changes that are not covered by the approved procedures in MDOT's *Soil Erosion and Sedimentation Control Manual* (April 2006).
- At a minimum MDOT's Standard Specifications and practices for construction site erosion control will be included on plans and drawings that show details of erosion control measures. The design plans will provide details of best management practices. The construction contractor will be responsible for implementing the plans.
- A Stormwater Pollution Prevention Plan will be prepared for the Project. Where dewatering is required, appropriate erosion/sedimentation controls will be implemented.

4.16.5. Construction Noise

4.16.5.1. IMPACTS

The major construction elements of this Project are expected to be demolition, hauling, grading, paving, and bridge construction. Construction of the proposed improvements will result in a temporary increase in the ambient noise level along I-94. General construction noise impacts for passersby and those individuals living or working near the Project can be expected particularly from demolition, earth moving, pile driving, and paving operations. Equipment associated with construction generally includes backhoes, graders, pavers, concrete trucks, compressors, and other miscellaneous heavy equipment. Further details on the hours and days when construction will occur for the project are not yet available. Construction work may occur outside of typical weekday work hours (7 am – 5 pm).

4.16.5.2. MITIGATION

Considering the relatively short-term nature of construction noise, impacts are not expected to be substantial. The transmission loss characteristics of nearby structures are believed to be sufficient to moderate the effects of intrusive construction noise. MDOT will be sensitive to local needs and may adjust work practices to reduce inconvenience to the public, such as prohibiting the use of certain types of equipment and processes during the nighttime hours (10 p.m. to 7 a.m.).

4.16.6. Lighting

4.16.6.1. IMPACTS

Nighttime construction activities will require that activities be well-lighted. The most sensitive areas will be residential land uses, which cover a substantial portion of the Project limits.

4.16.6.2. MITIGATION

For construction activities that will occur at night, lighting for night work will follow MDOT's special provisions in effect at the time of construction. This will include the submittal of a "work area lighting plan." Lighting levels should not fall below the minimum requirements and should not spill over to adjoining property and should not interfere with traffic, workers and inspection personnel. The MDOT Project Engineer will review and approve a lighting plan and layout prior to the start of construction and the construction contractor will be responsible to implement the lighting plan.

4.16.7. Surface Streets

4.16.7.1. IMPACTS

Damage to adjacent local street pavements could occur during construction activities.

4.16.7.2. MITIGATION

MDOT's Standard Specifications for construction will guide the use of construction equipment on pavements and structures. Local roadways will be inspected before construction begins and at regular intervals during construction. Road damage caused by construction vehicles, equipment or activities will be temporarily repaired during the construction period. After construction is complete, a final road inspection will be conducted by MDOT and the construction contractor will make permanent repairs.

4.16.8. Vibration

4.16.8.1. IMPACTS

Temporary vibration impacts could occur in residential areas and at other vibration-sensitive land uses from activities associated with construction of the Project, such as excavation, demolition, and vibratory compaction, as well as pile-driving at bridges, noise walls, and retaining walls. The potential for vibration impact would be greatest at locations near pile-driving for bridges and other structures, pavement breaking, and at locations close to vibratory compactor operations.

The equipment with the highest vibration level for roadway construction is the vibratory roller, and the highest potential vibration level for pile driving is with the impact pile driver. For buildings near pile driving activities, short-term construction vibration impact can extend to approximately 100 feet from the construction site. For buildings near roadway construction activities, short-term construction vibration impact can extend to approximately 30 feet from the construction site.

Human annoyance from pile driving could extend to approximately 400 feet from the construction site while roadway construction annoyance could extend to approximately 100 feet from the construction site.

4.16.8.2. MITIGATION

The primary means of mitigating short-term vibration impacts resulting from construction activities is to require the contractors to prepare a vibration monitoring plan. Key elements of a plan include:

- Identify vibration sensitive buildings
- Conduct a pre-construction inspection of residences, historical and other vibration sensitive structures in the Project limits
- Prohibit certain activities that create higher vibration levels during nighttime hours
- Implement vibration control measures where appropriate
- Develop a method for responding to community complaints

4.16.9. Disposal of Excess Materials

4.16.9.1. IMPACTS

Construction can generate excess materials. The following mitigation measures are applied to ensure excess material is disposed of properly.

4.16.9.2. MITIGATION

Surplus or unsuitable material generated by construction will be disposed of in accordance with specific provisions designed to control possible detrimental impacts of this material. Hazardous materials, such as asbestos, removed from buildings to be demolished will be disposed of in accordance with local and federal laws.

If surplus or unsuitable material is to be disposed of outside the right-of-way, the contractor will obtain and file with MDOT written permission from the owner of the property on which the material is to be placed. In addition, no surplus or unsuitable material is to be disposed of in any public or private wetland area, watercourse, or designated floodplain.

Disposal of solid wastes must comply with all applicable EGLE regulations.

4.16.10. Disruption of Utilities

4.16.10.1. IMPACTS

Temporary disruption of utility service and relocation of utilities will occur as roadways are modified. The exact locations of water, sanitary sewer, electrical, telephone, cable and storm sewer lines will be identified in the next phase of roadway design.

4.16.10.2. MITIGATION

Detailed utility plans will be prepared during the next engineering design phases of the Project. During construction, MDOT and the construction contractors will coordinate with the appropriate utilities to ensure minimal disruption of service to residents and businesses. Disruption of services during construction will be temporary and business and residential customers will be notified of planned service disruptions in advance. Chapter 9 of MDOT's *Road Design Manual* sets forth the policies and procedures to be followed by the construction contractor and MDOT.

4.16.11. Visual Impacts

4.16.11.1. IMPACTS

During construction, temporary, short-term visual changes will occur including vegetation removal and earth-moving operations, construction of the various elements of the modernization including bridges interchanges, roadway, ditches, walls. Construction activity and the presence of construction equipment will also have a visual impact. Until the construction sites are cleaned-up and vegetation restored, viewers will be subjected to these views.

4.16.11.2. MITIGATION

Work areas will be restored upon completion of the Project including re-seeding to re-establish vegetation, landscaping, and removal of construction-related equipment and refuse. Site clean-up will be the responsibility of the construction contractor and shall follow MDOT's Standard Specifications for Construction Section 209 – Project cleanup. Clean-up will address roadsides, the area within the right-of-way and up to 50 feet beyond the grading limits. All debris, fences, fallen timber, logs, guardrail section and posts, rocks, boulders and rubbish will be removed and properly disposed of.

4.17. Indirect Effects

The Council on Environmental Quality (CEQ) defines indirect effects as “effects, which are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable.” Indirect effects include changes to land use, such as new commercial and/or industrial development, which can result in an increase in employment. Indirect effects will therefore occur after construction of the ASAM is complete.

The effects also can be removed in distance from the Project. For this analysis, the distance varied from the immediate right-of-way (visual resources) to region-wide (air quality).

The 2004 FEIS evaluated Indirect and Cumulative Effects (ICE study) and the findings of that study are generally still valid. The following sections review and update the 2004 FEIS's findings. The results of the ICE study can be found in Section 5.15.1 of the 2004 FEIS.

4.17.1. Land Use

Land use and transportation are inextricably linked, and land use changes can occur because of improved transportation access that enables faster or more reliable travel between destinations. Studies conducted since the publication of original ICE study bear this out. A study report titled *Interactions Between Transportation Capacity, Economic Systems, and Land Use* provided several case studies confirming the assertion that increased transportation access can result in increased development.⁸⁹ Therefore, as reported in the 2004 FEIS, land development continues to be expected to accelerate because of improved access to land that is currently vacant or underutilized. Some significant developments have been constructed since the 2004 FEIS. Some properties have been cleared where vacant homes once stood as the city implements its Detroit Demolition Program, which uses federal Hardest Hit Funds (HFF) that can only be used in federally designated zones. Most demolitions near I-94 have

⁸⁹ SHRP2 Capacity Research. (2012). *Interactions Between Transportation Capacity, Economic Systems, and Land Use*. Report S2-C03-RR-1. Transportation Research Board.

4.17. Indirect Effects

been in residential neighborhoods, slightly increasing the amount of vacant land. However, these demolitions are scattered throughout neighborhoods and do not substantially change the findings in the 2004 FEIS.

Induced development and redevelopment can be expected to occur primarily where new service drive and bridge connections are made; and between I-96 and I-75 consistent with land-use recommendations outlined in the city of Detroit's current Master Plan of Policies. Although updated since the 2004 FEIS, the city's land use and development plans continue to have goals and policies supportive of re-development in these areas.⁹⁰ Planning areas, or "Neighborhood Areas," within the study area include Rosa Parks, Jeffries, Woodward and Lower Woodward, Upper East Central, Middle East Central, Airport and Kettering, and these have not changed since the 2001 DEIS. The city continues to encourage development and redevelopment. There is a focus on connecting neighborhoods, which is in part the intention of the modifications proposed under the ASAM; that is, to better enhance connectivity and mobility. The ASAM will support the city's plan for promoting development.

As reported in **Section 4.18**, substantial development has occurred recently or is planned within the Midtown, New Center and Tech Town neighborhoods. Midtown Detroit, Inc. projects continued investment in these areas. The Detroit Economic Growth Corporation also reports that revitalization and economic growth is occurring in Detroit. Elsewhere near the Project limits redevelopment of the Packard Automotive plant has begun.

4.17.2. Socioeconomic Resources

Indirect effects can be expected to include a slight increase in population and demographic shifts along the corridor as new housing develops or is built on vacant lands and existing commercial and industrial land uses are sustained with the modernization of I-94, and the associated improvement of the service drives. The ASAM, like the ASA, provides opportunities to increase development and re-development. Specifically, the Master Plan of Policies recommends new and rehabilitated housing between West Grand Boulevard and I-94, on Virginia Park Street, and along Grand River Avenue and Joy Road. The ASAM, like the ASA should positively affect the economy through improved transportation of goods, services and people, new business development, and expansion of existing businesses.

The Detroit Retail Opportunity Study conducted by the Detroit Economic Growth Corporation cited the need to increase connectivity between commercial corridors.⁹¹ It specifically points out how the ease of freeway connections to commercial corridors is important to the success of commercial growth. MDOT has worked with the city to improve the ASAM design to address connectivity and the transition from the freeways to the service drives and connecting local streets.

4.17.3. Community Facilities and Services

As reported for the ASA, the ASAM will improve access to land near community facilities; construction of additional and revitalized housing and businesses and increased population and business workforce will require the services provided by these community facilities.

⁹⁰ City of Detroit. (2018).

⁹¹ Detroit Economic Growth Corporation. (2018). Detroit Neighborhood Retail Opportunity Study. Detroit: Detroit Economic Growth Corporation.

4.17. Indirect Effects**4.17.4. Transit**

As discussed in **Section 4.17.1**, transportation improvements can induce land use development. Redevelopment and infill could result in increased population and employment, which could in turn increase transit demand. Compact communities can make public transit more practical and cost-effective because destinations are closer together.

4.17.5. Nonmotorized (Pedestrian and Bicycle) Mobility

The 2004 FEIS recommended that improved sidewalks have the indirect effect of encouraging more residents and students to walk in residential and neighborhood commercial areas. This finding remains valid and the ASAM increased the Project's emphasis on designing for nonmotorized mobility. The Project increases mobility for pedestrians and bicyclists by constructing Complete Streets with sidewalks and bike lanes; constructing the Iron Belle Trail on a separate, nonmotorized facility crossing I-94; and replacing pedestrian bridges in kind or by replacing the crossing at Complete Street bridges nearby.⁹²

4.17.6. Neighborhood Character and Community Cohesion

The findings of no significant indirect effects to neighborhoods in the 2004 FEIS remain valid in terms of connectivity modifications proposed in the ASAM. The 2004 FEIS stated that improved access and traffic flow via continuous service drives between neighborhoods would benefit community cohesion, but increased traffic could be expected in residential areas where service drives currently do not exist. The ASAM eliminates the continuous service drive concept but utilizes the existing service drive network and proposes new connections at select locations that avoid substantial property impacts while improving local connectivity. The two-way traffic flow proposed on the service drives and new neighborhood connections may reduce adverse travel for local traffic not needing to cross I-94 for trips traveling in the reverse direction.

One location was evaluated for providing a new service drive connection through the residential area between Burns Street and McClellan Street, on the south side of I-94. Due to potential concerns from local residents, this connection was not proposed with the ASAM. Instead the ASAM proposes modifying the ASA to match existing conditions in this approximately 3-block distance segment of the East Edsel Ford Service Drive, which will eliminate the concern for increased through traffic. However, this will reduce connectivity within this neighborhood and access across I-94 at the Burns Street bridge and the new Rohns Street Complete Streets bridge.

Consistent with stakeholder input, the ASAM's enhanced connectivity between neighborhoods are expected to indirectly benefit community cohesion, as compared to existing conditions.⁹³ Proposed enhancements include the following:

- New Complete Streets connections over M-10 at Selden Street and Calumet Street between the Woodbridge and Midtown neighborhoods. The new Complete Streets bridges enhance the existing pedestrian-only connections by constructing a new connection that provides access for all users (vehicular, pedestrians, and bicycle users).

⁹² See Glossary for definition of Complete Streets.

⁹³ City of Detroit. The Neighborhoods. (February 2018). Retrieved from <https://www.theneighborhoods.org/map>.

4.17. Indirect Effects

- Eliminate Third Avenue crossing over I-94 in M-10 interchange, moving the traffic to cross at Second Avenue between Tech Town neighborhood on the north of I-94, and Wayne State University campus on the south. The Second Avenue bridge was identified as a Community Connector Bridge through the public participation process, which is defined as one of the most important connections in the corridor. As such, the Second Avenue bridge will include wider sidewalks, buffered bike lanes, vehicular lanes, and more enhanced landscaping and aesthetics.
- New Complete Streets connection over M-10 at Holden Street between Tech Town on the east and Elijah McCoy and Henry Ford neighborhoods on the west of M-10. The new Complete Streets bridge enhances the existing pedestrian-only connection by constructing a new connection providing access for all users (vehicular, pedestrian, and bicycle users).
- The new Hendrie Street and Hasting Streets extensions reestablish the city grid pattern and provide improved local connectivity including a new bridge over I-94 between the Milwaukee Junction and Medbury Park neighborhoods on the north to the Cultural Center and Medical Center neighborhoods on the south.
- New two-way Harper Avenue extension from Mt. Elliott Street to Hastings Street will provide improved access from neighborhoods on the eastside of Detroit to the New Center and Midtown neighborhoods. This connection will provide a new parallel route to I-94 to provide improved access for residents to the job centers, medical districts, cultural centers, and entertainment districts in the Midtown and New Center neighborhoods. The Harper Avenue extension also provides opportunities for future transit routes, that improve connectivity for residents who do not have access to motor vehicles.
- New Complete Streets connections over I-94 at Helen Street, Rohns Street, Iroquois Avenue, Sheridan Street, and Lemay Street between the neighborhoods north (Airport Sub) and south of I-94 (Gratiot Town/Kettering, Gratiot-Grand, Pingree Park, Gratiot Woods, and West End). The new Complete Streets bridges enhance the existing pedestrian only connections by constructing new connections providing access for all users (vehicular, pedestrians, and bicycle users). The new Complete Streets bridges along Iroquois Avenue and Sheridan Street replace the Seminole Street, Townsend Street, and Springfield Street pedestrian bridges over I-94.
- Removal of the McClellan Street Bridge adjacent to the Gratiot Avenue interchange will decrease access across I-94 between the Airport Sub neighborhood on the north and the Gratiot Woods, Gratiot Town/Kettering, and West End neighborhoods on the south. However, the new Rohns Street Complete Streets bridge will help mitigate some of the lost connectivity of the removal of the McClellan Street bridge.
- Continuation of the East Edsel Ford Service Drive between Springfield Street and St. Jean Street will create a new connection from the West End neighborhood to the Conner Creek Industrial neighborhood and Wayne County Community College. Likewise, on the north side of I-94 a new connection of the East Edsel Ford Service Drive between Lemay Street and Beniteau Street will create a through street from Conner Avenue to Lemay Street.

The proposed connections will offset the proposed closures developed with local stakeholders, including:

- Closure of Wabash Street at Mark Avenue and the Edsel Ford Service Drive
- Removal of the Brooklyn Street Pedestrian Bridge over I-94
- Closure of Third Avenue at the M-10 interchange and Third Avenue bridge over I-94
- Removal of the Piquette Avenue over I-75
- Elimination of the French Road Interchange with I-94 (the French Road Bridge will be retained)

4.17.7. Environmental Justice

Environmental Justice is discussed in **Section 4.4**. The communities adjacent to I-94 are predominantly minority and low-income. The 2004 FEIS found that pedestrian and vehicular safety and business activity could be temporarily adversely affected during construction. The potential indirect effect on land use, economic development and community cohesion may result in housing and business (and associated job creation) opportunities.

4.17.8. Mobility

The ASAM capacity improvements to the freeway and service drive system are anticipated to benefit local community traffic flow by providing the adjacent local road network with additional capacity and connectivity. All the intersections adjacent to the Project limits are designed to operate at an acceptable Level of Service (LOS) D or better (vehicles might be required to stop and experience some delay) in the peak hours of the day. Most of the intersections operate at LOS B or better (good traffic flow and little delay to drivers), which will accommodate traffic from additional future development along the corridor. The ASAM also extends these benefits to nonmotorized users with provision of Complete Streets design on local roads, connecting bridges and service drives.

4.17.9. Construction

Disruptions to local and the mainline freeway traffic during construction of the ASAM are similar to those described for the ASA. Construction might adversely affect businesses in the Project vicinity. Congestion associated with construction vehicles or traffic temporarily rerouted may decrease pedestrian or vehicular access to local businesses. The extent of adverse effects will be localized and vary according to the construction staging option finally selected, since construction of the ASAM will likely consist of multiple phases staged over approximately eight years or more. There is a potential for local job growth, due to the freeway reconstruction.

Mitigation of construction activities is included in **Section 4.16**.

4.17.10. Cultural Resources

Like the ASA, the indirect effect of the ASAM on cultural resources is related to effects discussed in **Section 4.17.1**. As development pressure grows, the threat to demolish historic properties also grows. The development projects listed in **Table 4-13** point to a trend to redevelop and renovate existing spaces, which can minimize the loss of historic sites. Resources potentially affected by MDOT actions are subject to a detailed review and consultation process required by Section 106 (see **Section 4.12.3.1**) and Section 4(f) (see **Chapter 5**).

4.17.11. Air Quality

No consequential effects to air quality are anticipated, based on anticipated land-use changes and a worst-case analysis of local 2025 air quality levels (CO) for the ASAM in 2025. All 2025 air quality parameters are anticipated to not exceed air quality standards.

4.17.12. Water Quality

Like the ASA, the indirect effects of the ASAM include an increased amount of surface water runoff. This increase likely would occur as vacant land and residential property are developed with commercial structures consisting of large buildings and impervious parking areas. An increase in the surface water runoff also would be related to additional residential development that occurs on undeveloped parcels of land.

4.18. Cumulative Effects

Pollutant loading to the surface water may increase as the development of residential and commercial parcels accelerates and vehicular traffic increases. The predominant sources of potential additional pollutants during construction activities are leaking equipment, spills, and erosion of disturbed soils. Once construction is complete, an increased volume of vehicles and vehicular traffic will provide additional sources of pollutants, including fluid leaks, fluid spills, and fluid discharges during vehicular crashes.

Water quality will indirectly benefit from the new underground drainage system and engineering controls, including catch basins, in-line detention, oil/water separators and filter strips. Highway maintenance operations could also improve water quality with pavement sweeping, trash collection, and catch basin cleaning. The improved drainage will eliminate existing periodic flooding along I-94 within the Project limits.

4.17.13. Noise

The 2004 FEIS reported that no indirect effects are expected to occur from construction or traffic noise. This finding remains valid.

4.17.14. Summary of Indirect Effects

The 2004 FEIS assessment remains valid in that land use and socioeconomic resources will experience indirect effects and that the density of development can be expected to increase over time as existing vacant lands develop and the ASAM is constructed. The finding that these impacts will be largely positive on the socio-economic environment remains valid because although land development and redevelopment has occurred since the 2005 ROD, there remains large amounts of vacant lands and opportunities for renovations and redevelopments. The local economy should benefit from the greater density of business and residential developments, improved employment opportunities and an expanded tax base, which will be a positive impact on the quality of life for residents and businesses.

4.18. Cumulative Effects

Cumulative effects are impacts on the environment which result from the incremental impact of the Project when added to past, present, and reasonably foreseeable future actions. Individually minor impacts may become significant with combined actions taking place over time. This section reviews and updates the analysis in the 2004 FEIS. The resources discussed in the context of cumulative impacts are those discussed in prior sections of this chapter.

4.18.1. Land Use and Economic Development

Cumulative impacts are discussed in the 2004 FEIS where a summary of key past, present, and reasonably foreseeable future actions was compiled. This list included industrial, residential, commercial, civic/cultural, recreational, transportation, development. The study identified two areas within the cumulative effects study area where there is a high potential for cumulative land-use change at the west and east ends of the study corridor. This is due to the expanding transportation network, tracts of vacant land, available infrastructure, local plans and policies supporting redevelopment.

Similar to the ASA, construction and implementation of the ASAM in combination with other transportation projects, such as the proposed Detroit Intermodal Freight Terminal (DIFT) and I-75 modernization, and other development projects is expected to result in the cumulative effect of increasing industrial and commercial land uses, and residential land use. No recent changes in land use policy are expected to change this finding as Detroit continues to

4.18. Cumulative Effects

plan for and implement economic development within the city limits. Since the 2004 FEIS, several transportation projects and millions of dollars of investments in institutional, residential, commercial and public space development has occurred, but is focused primarily in the Midtown, New Center, and TechTown neighborhoods. The city of Detroit maintains an interactive map showing the current neighborhood-based development projects at <https://detroitmi.gov/webapp/map-neighborhood-based-detroit-development-projects>. Midtown Detroit, Inc. also maintains a list of projects at <http://midtowndetroitinc.org/development/development-projects> as does Curbed Detroit <https://detroit.curbed.com/maps/new-center-development-construction-map>. Using these sources, a list of past present and future projects is presented in **Table 4-13**. Midtown Detroit Inc states that in 2018, population in Midtown is increasing, and residential demand is outpacing supply with a 98% residential rental occupancy. Housing development includes 1,894 recently completed units, 1,913 under construction and another planned 2,466 units. Their most recent 2018 report cites \$787 million invested since 2014 in completed projects with another \$1.10 billion in planned projects.⁹⁴

Table 4-13: Development Projects in the Cumulative Effects Study Area

Name	Type	Description	Date
College for Creative Studies	Institutional	Multiple projects including historic home renovations, the Yamasaki building, and other New Center area improvements and renovations including the A. Alfred Taubman Center for Design Education, a mixed-use facility.	Past (2009)
Detroit Historical Museum	Institutional	Upgrade and renovation in the museum and the Detroit Legends Plaza	Past (2012)
Detroit Medical Center	Institutional	• Midtown Marketplace food plaza • Upgrades to Children's Hospital (\$155 million) • Heart Hospital Access Center	• Past (2016) • Past (2018) • Past (2014)
Henry Ford Health System Brigitte Harris Cancer Pavilion	Institutional	\$155 million facility to house cancer-related treatment and support services, retail, and public space. Will employ over 230 people. 187,000 sq. ft.	Future (2020)
Mosaic "Midtown Church	Institutional	\$2.5 million renovation	Past (2016)
Wayne State University	Institutional	\$40 million investments in a new 120,000 sq. ft business school	Past (2018)
Pistons Training Facility	Commercial	Training and rehab facility and corporate headquarters for the Pistons basketball team	Present (2019)
3627 Cass	Commercial	Commercial storefront restoration	Past (2018)
4100 Third Avenue	Commercial	Commercial space rehabilitation	Present
92 E. Forest	Commercial	\$5 million renovation of a church into art and entertainment venue	Present

⁹⁴ Midtown Detroit, Inc. 2018 Community Update. (2018, January 12). Midtowndetroitinc.org. Retrieved from <http://midtowndetroitinc.org/sites/default/files/images/site-content/MDI%202018%20Community%20Update.pdf>.

4.18. Cumulative Effects

Name	Type	Description	Date
Boulevard West Building	Commercial	\$1.2 million office building renovations to include office and retail space, and 42-space parking lot.	Present (2019)
Cardinal Health, Inc. – Medical Products Distribution Center	Commercial	\$30 million new construction of a distribution center to serve as an anchor for Henry Ford Health System’s neighborhood redevelopment initiative. 140 jobs	Past (2015)
Carhartt	Commercial	50,000 sq. ft. retail store with indoor parking	Past (2015)
Chung’s Restaurant	Commercial	Restaurant renovation	Future (2019)
Detroit Design Center	Commercial	Façade improvements and building expansion including commercial and gallery space	Future
Gus’s Chicken	Commercial	\$1 million new construction restaurant	Past (2016)
HopCat	Commercial	\$4.5 million restaurant redevelopment	Past (2014)
Selden Innovation District	Commercial	Mixed use	Future
Shinola and Third Man Records	Commercial	Retail store and offices	Past (2015)
Shinola Watches and Bicycles	Commercial	Retail	Past (2013)
Detroit Shipping Company	Commercial	Restaurant development with entertainment venue	Present (2019)
Shoppes of Woodward	Commercial	70,000 sq. ft. mixed development	Future
Third/Willis Storefronts	Commercial	Renovation of commercial spaces	Past (2016)
Whole Foods Market	Commercial	20,000 sq. ft. grocery store	Past (2013)
Will Leather	Commercial	8,000 sq. ft. high end retail fashion outlet, redevelopment	Past (2015)
Woodward Garden Block Development	Commercial	Parking structure, rehabilitation of historic building and construction of office space, renovation of theater and a mixed-use building.	Past (2014)
Woodward/Willis Mixed-use Project	Commercial	\$6.8 million, 29,000 sq. ft. office and retail space	Past (2015)
110 E. Ferry	Residential	Conversion of historic home into 4 condominium units	Past
207 E. Baltimore	Residential	\$1.8 million mixed-use development with 12 live/work units	Past (2017)
284 Eliot	Residential	9200 sq. ft. residential development 4 units	Present (2018)
445 W. Willis	Residential	Redeveloped 6 units	Past (2016)
51 West Palmer	Residential	Redevelopment of up to 30 residential spaces	Past (2017)
5734 Woodward	Residential	Mixed use of 2 units and 2,400 sq. ft. commercial space	Future (2019)
64 Watson	Residential	Building restoration/redevelopment into 6 condominium units	Future

4.18. Cumulative Effects

Name	Type	Description	Date
678 Selden	Residential	\$3.7 million, 22,796 sq. ft. mixed-use building renovation with 28 apartments	Past (2016)
691 West Alexandrine	Residential	Rehab of 2 units	
701 Canfield	Residential	Mixed use residential restoration	Past (2014)
71 Garfield	Residential	Conversion of a hotel into mixed-use with 22 live-work spaces	Past (2013)
Anthony Wayne Drive Apartments	Residential/mixed-use	\$1.4 billion over 40 years. Phase 1 and 2 will house 842 students, 18,000 sq. ft. retail and 9,000 sq. ft. health services center.	Present (2017-2019)
Baltimore Station	Residential	\$3.7 million new construction of 11 units and 8,000 sq. ft. retail	Future (2019)
Brentwood Apartments 487 Prentis	Residential	\$1.2 million renovation of 38 new residential units	Past (2014)
Casamira 680 Delaware	Residential	\$10.2 million redevelopment of 44 residential units	Past (2018)
Cass Plaza	Residential	\$17 million restoration of 39 units	Past (2016)
Charlotte Apartments	Residential	\$6 million renovation of 27 units	Past (2016)
Crystal Lofts 3100 Woodward Ave.	Residential	30,00 sq. ft. renovation mixed-use with 17 units and retail space.	Past (2017)
East Ferry Townhomes (Nailah Commons)	Residential	\$8.4 million new construction of 58 units	Past (2017)
East Palmer Townhomes	Residential	11 townhomes	Past (2015)
Eco-Homes in North Cass Neighborhood	Residential	14 single family homes and playground	Future
Forest Arms	Residential	70 units	Past (2016)
Kirby Center Lofts Art Center neighborhood	Residential	\$6.9 million renovation of school into 26 units	Past (2016)
Milner Arms (The Hamilton)	Residential	93-unit planned apartment renovation	Past (2018)
Patterson Row Houses	Residential	\$1.8 million renovation of 9 units	Future (2019?)
Rainer Court	Residential	\$6.4 million renovation of 36 units and retail space	Past (2015)
Regis Houze Apartments	Residential	58 units over 4,000 sq. ft. retail	Past (2015)
Scott Mansion	Residential	Redevelopment into 27 units	Present (2019)
Strathmore	Residential mixed-use	\$28 million redevelopment of hotel into 129 units with 2,000 sq. ft. commercial	Past (2016)
The Auburn at 4240 Cass Ave.	Residential mixed-use	62 units for student/young professionals. Common areas and 9,000 sq. ft. retail.	Past (2013)
The El Moore	Residential	12 units and 11 "lodging spaces"	Past (2015)
The Plaza	Residential	Conversion of medical offices into 72 units with 2,500 sq. ft. retail.	Past (2017)

4.18. Cumulative Effects

Name	Type	Description	Date
The Scott	Residential mixed-use	199 units and 15,000 sq. ft. retail	Past (2016)
The Selden	Residential mixed-use	\$10 million 12 condo units with restaurant and office space.	Past (2018)
Third/Grand in New Center neighborhood	Residential mixed-use	231 units, 20,000 sq. ft. retail and 250 parking spaces.	Future (2019)
Midtown Loop infrastructure improvements	Public space	Infrastructure upgrades to increase accessibility and promoting walkability. \$1.75 million in 2011, \$2.3 million in 2013, \$4 million in 2015, \$5 million (potential), \$322,000 in 2012, \$446,000 in 2013	Past (2015)
Packard Automotive Plant 6199 Concord Avenue	Mixed use	\$16 million (Phase 1 only) including offices, restaurant, gallery, event space. Future phases would include recreation, live-work spaces and potential hotel.	Past/present/future
True North, Detroit at Warner and Grand River Avenues	Mixed use	50,000 sq. ft. of new construction and adaptive reuse to food, retail, art, park and residential space	Past (2017)
Flex-n-Gate	Manufacturing	\$160 million facility building vehicle parts expected to employ up to 750	Past (2018) and future
Chroma 2937 East Grand Blvd.	Mixed-use	Renovation of a 9-story building into work space, restaurants, entertainment.	Future (2019)

Sources: <http://midtowndetroitinc.org/development/development-projects> Midtown Detroit Inc. website Jan. 12, 2019. City of Detroit Map of Neighborhood-Based Detroit Development Projects <https://detroitmi.gov/webapp/map-neighborhood-based-detroit-development-projects>. Jan. 12, 2019. Curbed Detroit <https://detroit.curbed.com/maps/new-center-development-construction-map> 1/12/19. Wayne State University Facilities Planning & Management web page. <https://facilities.wayne.edu/construction/projects-index> 1/12/19.

4.18.2. Community Facilities

The cumulative effects of the indirect land use development, in combination with past, present and future developments result in the construction of additional and revitalized housing and businesses that would increase the population requiring community facility services.

4.18.3. Nonmotorized Mobility

The Project increases mobility for pedestrians and bicyclists by constructing Complete Streets with sidewalks and bike lanes; constructing the Iron Belle Trail on a separate, nonmotorized facility crossing I-94; and replacing pedestrian bridges in kind or by replacing the crossing at Complete Street bridges nearby. These improvements, in concert with city efforts to incorporate such features that increase mobility and connectivity into city developments, would cumulatively increase mobility.

4.18.4. Neighborhood Character and Community Cohesion

As reported in the 2004 FEIS, some residents near the Project were affected by relocation impacts from the construction of the interstate system in the 1950s. Some communities were divided by the physical barrier created by the freeway, service drives and interchanges. The Project may again affect these residents. In combination with

other ongoing past, present, and future transportation projects in Detroit, there would be a cumulative social impact on these neighborhoods.

MDOT is addressing community needs in Project design through early and inclusive public outreach and involvement as reported in **Chapter 7**. The resulting proposed ASAM reduces residential and business relocations; right-of-way impacts to parks, recreation, and historic sites; and increases connectivity and mobility. Based on stakeholder input, the ASAM can minimize the cumulative negative impact of past actions, provide important community connections and improve traffic safety and operations.

4.18.5. Mobility

As reported in the 2004 FEIS, the ASAM and associated advanced phases, in combination with past present and future area transportation projects, will have a positive effect of increasing mobility throughout the corridor.

4.18.6. Construction

Public and private construction projects within the city can compound the highway construction impacts described in **Section 4.16**.

The findings presented in the 2004 FEIS remain valid. The combination of ASAM construction activities with residential, commercial and industrial development, and other transportation projects, could create cumulative effects on traffic flow, local commerce, noise, and air and water quality. These other construction projects can cause traffic patterns to shift, possibly to the I-94 corridor or local streets; this might induce higher traffic volumes as vehicles try to avoid other construction areas, resulting in possible impacts to local businesses, temporary air quality degradation, or increases in noise levels.

The funding and timing of these various projects is not yet established, and the extent and duration of impacts associated with constructing these projects are not known. However, MDOT will coordinate with the city of Detroit to minimize cumulative effects of adjacent and nearby private and city development projects that may occur during the I-94 construction time. Application of the mitigation measures presented in **Section 4.16** will also minimize cumulative construction impacts.

4.18.7. Cultural Resources

The discussion of cumulative effects on cultural resources in the 2004 FEIS remains valid. Impacts to historic properties by the ASAM, in combination with the loss of historic structures due to deterioration and neglect results in an irretrievable loss of these resources. MDOT follows the regulatory requirements of Section 106 and Section 4(f) and seeks to avoid, minimize, or mitigate adverse effects to historic resources and Traditional Cultural Properties. Local groups such as Preservation Detroit and the Michigan Historic Preservation Network dedicate themselves to preservation of historic properties in the region. The city's Historic District Commission also implements local ordinances to preserve historically and culturally significant areas in the city. Cumulatively, the actions of MDOT combined with local preservation activities would serve to minimize and mitigate the overall loss of cultural resources.

4.18.8. Air Quality

The Project is in the Metropolitan Detroit-Port Huron Intrastate Air Quality Control Region (AQCR #123). Wayne County is currently in attainment status for three of the six criteria pollutants and has been classified as being in non-attainment for Sulfur Dioxide SO₂ (2010). Wayne County is considered a "Maintenance Area" for CO and PM_{2.5}. No consequential effects to air quality are anticipated, as the Project is required to meet Transportation Conformity

4.19. Cost and Funding

Rule requirements found in 40 CFR Part 93. The Project is included in SEMCOG's 2040 RTP for Southeast Michigan and FY 2017-2020 TIP for Southeast Michigan. The RTP and TIP are consistent with the air quality goals established in the state air quality implementation plan (SIP). The process for demonstrating this consistency is called Air Quality Conformity. The purpose of Conformity is to ensure that projects in the plan will not cause new air quality violations, worsen any existing violations, or delay timely attainment of NAAQS. SEMCOG is responsible for ensuring this conformity is demonstrated. Due to this, no consequential cumulative effects to air quality are anticipated.

4.18.9. Water Quality

The city of Detroit recently adopted a new post-construction stormwater management ordinance. Before this, development activities were not subject to stormwater management requirements. As the city implements stormwater controls for private developments, combined with MDOT's existing procedures to manage stormwater, it can be expected that water quality and stormwater systems will improve above and beyond existing conditions.

4.18.10. Noise

The number of sensitive receptors can be expected to increase as lands surrounding the Project redevelop and as vacant areas are infilled as discussed in the Indirect Effects section (**Section 4.17**). The potential for adverse cumulative noise impacts can be reduced if appropriate mitigation measures are implemented. MDOT will notify local planning authorities of the anticipated noise effects within the Project limits. The distances to 66 dB(A) $L_{eq(1h)}$ are provided to local planning authorities to inform land use development in the Project limits to prevent further development of incompatible land use. The 66 dB(A) setback distances are mapped in Appendix A of the *Noise and Vibration Technical Memorandum* (see **Appendix G**). The city of Detroit also regulates private development design in ways to reduce the impacts of traffic noise on sensitive receptors, including not only placement of structures, but building materials and structure design that could attenuate sound.

4.18.11. Summary of Cumulative Effects

The 2004 FEIS assessment of cumulative effects remains valid in that land use and socioeconomic resources will experience cumulative effects as existing vacant lands develop and the ASAM is constructed. The finding that these impacts would be largely positive on the socio-economic environment remains valid because although land development and redevelopment has occurred since the 2005 ROD, there remains substantial amounts of vacant land and opportunities for renovations and redevelopments. The local economy should benefit from the cumulative effect of local business and residential developments, improved employment opportunities, and an expanded tax base. The implementation of the city's new stormwater management requirements on private development will have a new cumulative positive effect on overall water quality in Detroit and in the Detroit River.

4.19. Cost and Funding

Table 4-14 summarizes the ASAM cost estimate. The estimate is based on concept design quantities and unit prices. The Project will be funded with approximately 20% state and 80% federal funding.

Table 4-14: Cost Estimate of the Approved Selected Alternative with Modifications (Current Year Dollars)

Activity	2018 Cost (in Millions)
Construction	\$2,211
Right-of-way	\$68

Activity	2018 Cost (in Millions)
Design, Construction Engineering, & Project Management	\$558
Total	\$2,837

4.20. Relationship Between Local Short-Term Uses Versus Long-Term Productivity

The relationship between local short-term uses versus long-term productivity discussed in the 2004 FEIS remains valid for the ASAM.

Environmental impacts will be felt during the construction of the ASAM. The reconstruction of bridges and service drives will temporarily impact the mobility of residents, access to businesses, and emergency services. The impacts will continue through the construction period, but local mobility and access will be returned and improved after construction is complete.

Implementation of the ASAM will be consistent with the goals and objectives developed as part of local and regional planning processes. The Project incorporates the desires of local citizens and businesses and is consistent with SEMCOG's 2040 RTP.⁹⁵

The Project alternatives discussed in **Chapter 3** are based on planning efforts spanning several years. MDOT developed the ASAM alternative, which recognizes mobility requirements and development plans as well as future land use development in the Project limits and the city of Detroit as a whole. The short-term effects and use of resources will be offset by the long-term productivity and economic health that is anticipated to result from the improved transportation facility and new development in the city of Detroit.

4.21. Irreversible and Irretrievable Commitment of Resources

The discussion of irreversible and irretrievable commitments of resources in the 2004 FEIS remains valid for the ASAM.

Implementation of the ASAM involves the commitment of natural, physical, human, and fiscal resources. Land used to modernize I-94 will result in an irreversible commitment of resources.

Implementation of the Project will expend labor, fossil fuels, and highway construction materials such as cement, aggregate, and bituminous material. Additional amounts of labor and natural resources will be used in the fabrication and preparation of these construction materials. Such construction materials are not currently in short supply, and their use will not have an adverse effect on the availability of these resources.

Construction will require a one-time expenditure of state, federal and local funds that are irretrievable. Residents in the area, region, and state will benefit from the improved quality of the transportation system and the benefits of improved accessibility and safety, time savings, and greater availability of quality services are anticipated to outweigh the commitments of resources.

⁹⁵ SEMCOG. (June 2013 (Revised May 3, 2018)).

5. DRAFT SECTION 4(F) EVALUATION

This chapter updates a Section 4(f) evaluation conducted for the 2004 Final Environmental Impact Statement (2004 FEIS) and it reviews the modernization of approximately 6.7 miles of Interstate freeway (I-94) in the city of Detroit, Michigan, between I-96 and Conner Avenue (Project).

The Federal Highway Administration (FHWA) found, based on considerations the 2004 FEIS discussed, there was no feasible and prudent alternative to the use of land from the Woodbridge Neighborhood Historic District, the I-94/M-10 interchange, the United Sound Systems Recording Studios (USSRS) or the Square D/Detroit Fuse and Manufacturing Company Building.

The evaluation also found that the Approved Selected Alternative (the ASA) included all possible planning to minimize harm to the historic properties. The Michigan Department of Transportation's (MDOT's) updated survey identified additional historic and public recreation properties within the Project limits for the ASAM.

5.1. Introduction

The U.S. Department of Transportation's (USDOT) Section 4(f) law states that federal funds may not be approved for transportation projects that use land from a significant publicly owned park, recreation area, wildlife or waterfowl refuge, or public or privately owned historic sites listed on or eligible for listing in the National Register of Historic Places (NRHP), unless it is determined that there is no feasible and prudent avoidance alternative to the use of land from such properties. If the property cannot be avoided, all possible planning to minimize harm to the property must be taken to reduce the impact to Section 4(f) properties. The least overall harm may be achieved through the implementation of reasonable mitigation measures and can include measures that result in benefits to the property.

Section 4(f) of the Department of Transportation Act of 1966 was set forth in U.S. Code (USC) 49 USC § 1653(f). A similar provision was added to 23 USC § 138, which applies only to FHWA's Federal-Aid Highway Program and states that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. These laws are still commonly referred to as "Section 4(f)" and are implemented by FHWA regulations in the Code of Federal Regulations (CFR) 23 CFR § 774 – Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f)).



What are 'ASA' and 'ASAM'?

The "Approved Selected Alternative" or **ASA** is the selected alternative described in the Project's 2005 ROD, which affirmed the 2004 FEIS recommended alternative.

The "Approved Selected Alternative with Modifications" or **ASAM** is a proposed modification to the ASA. MDOT has not yet approved or selected the ASAM, but it is the preferred alternative evaluated in this DSEIS.

After a formal public and agency review period and public hearing on the SDEIS, MDOT and FHWA will identify a selected alternative in the Combined FSEIS and ROD.

In accordance with 23 CFR § 774, a *de minimis* impact to a Section 4(f) property is one that, after taking into account any measures to minimize harm such as avoidance, minimization, mitigation or enhancement measures, results in either:

- A determination that the Project would not adversely affect the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f).
- A finding of no adverse effect or no historic properties affected under Section 106 of the National Historic Preservation Act (NHPA).

A *de minimis* impact determination requires agency coordination and public involvement as specified in 23 CFR 774.5(b). The regulation has different requirements depending upon the type of Section 4(f) property that would be used. For historic sites, the consulting parties identified in the Section 106 process must be consulted. The official(s) with jurisdiction must be informed of the intent to make a *de minimis* impact determination and must concur in a finding of no adverse effect or no historic properties affected in accordance with 36 CFR Part 800. Compliance with 36 CFR Part 800 satisfies the public involvement and agency coordination requirement for *de minimis* impact findings for historic sites.

For parks, recreation areas, or wildlife and waterfowl refuges, the official(s) with jurisdiction over the property must be informed of the intent to make a *de minimis* impact determination, after which an opportunity for public review and comment must be provided. After considering any comments received from the public, if the officials with jurisdiction concur in writing that the Project will not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection, then FHWA may finalize the *de minimis* impact determination.

At this time, FHWA is considering a *de minimis* impact determination for some properties affected by the Project.

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

5.2. Conditions for Use of Section 4(f) Property

The following are conditions for use of Section 4(f) property:

Land is “permanently incorporated” into a transportation facility. Land is considered permanently incorporated when it has been purchased as right-of-way or sufficient property interests have otherwise been acquired for the purpose of Project implementation. For example, a permanent easement for future construction or maintenance access would be considered a permanent incorporation.

There is a “temporary occupancy” of land that is adverse in terms of the Section 4(f) statute’s preservationist purposes. Examples of temporary occupancy include right of entry, temporary easement or other short-term arrangement involving a Section 4(f) property. A temporary occupancy will not constitute a Section 4(f) use when all the following five conditions are satisfied:

- Duration is temporary and there is no change in ownership of the land.
- Scope of work is minor and nature/magnitude of changes to Section 4(f) property is minimal.
- There will be no anticipated permanent adverse physical impacts or interference with the protected activities, features or attributes of the property on either a temporary or permanent basis.

5.3. Proposed Action and Need for the Project

- The land being used will be fully restored and returned to a condition which is at least as good as that which existed prior to the Project.
- There is documented agreement on the above conditions with officials having jurisdiction over the Section 4(f) resource.

There is a “constructive use” of Section 4(f) property. Constructive use is only possible in the absence of permanent or temporary occupancy. Constructive use occurs when the proximity impacts on adjacent or nearby Section 4(f) property (after mitigation) are so severe that the activities, features, or attributes that qualify the property for Section 4(f) protection are substantially impaired (diminished). The degree of impact/impairment must be determined in consultation with officials having jurisdiction over the property. In cases where a potential constructive use can be reduced below a substantial impairment through mitigation, there will be no constructive use and Section 4(f) will not apply.

5.3. Proposed Action and Need for the Project

Chapter 2 discusses the purpose and need for the Project, which is to improve safety, capacity, local connectivity, and condition of the I-94 roadway, service drives, bridges, and interchanges between I-96 and Conner Avenue. The proposed Project improvements should be context sensitive and support the mobility needs of local, regional and interstate commerce as well as national and civil defense in a way that integrates all modes of travel.⁹⁶

The Project purpose and need for the ASAM is essentially the same as the ASA, with added emphasis on local connectivity and mobility.

5.4. Section 4(f) Property Descriptions

Like the ASA, the ASAM, which is described in detail in **Chapter 3**, will require the purchase of temporary and permanent right-of-way. Some of this right-of-way is on properties protected under Section 4(f). The list of properties has changed since the 2004 FEIS because of modifications in the Project design and additional identified Section 4(f) properties. Potentially impacted Section 4(f) properties include eight publicly owned park and recreation areas and eight historic sites of national, state, or local significance. Maps of these properties and the potential impacts to them are included in **Appendix I**.

The following sections briefly describe each of the identified affected Section 4(f) properties, the anticipated impacts associated with the ASAM, a discussion of avoidance alternatives and measures to minimize harm. The ASAM will not use publicly owned property from any wildlife or waterfowl refuge.

5.4.1. Historic Properties

Impacted properties are summarized below. Detailed descriptions of the properties are found in **Section 4.13.1** in this DSEIS and Section 6.2 of the 2004 FEIS.

5.4.1.1. WOODBRIDGE NEIGHBORHOOD HISTORIC DISTRICT

The Woodbridge Neighborhood Historic District, listed in the NRHP in 1979, encompasses about 162 acres. The approximate boundaries are the West Edsel Ford Service Drive, Trumbull Avenue, Grand River Avenue, and the

⁹⁶ See “CSS” in the Glossary of Terms in **Chapter 11**.

Grand Trunk Railroad tracks to the Service Drive. The district is an example of a middle-class, turn of the century residential area of one- and two-family dwellings with some apartment buildings as well. The architecture varies from elaborate Queen Anne structures to more humble cottages. Houses are located on narrow lots with shallow setbacks from the sidewalk.

Located at the north edge of the district is 5287 Hecla St., a one-and-one-half story frame worker's cottage built in circa 1895, whose first resident was Jane Middleton, widow of James, who made a portion of her income selling notions. Various roomers helped her keep the bills paid.

5.4.1.2. S.T. GILBERT TERMINAL

The S.T. Gilbert Terminal complex at 5600 Wabash Street was constructed in 1947-1948 by the Detroit Department of Street Railways, now Detroit Department of Transportation (DDOT). The facility houses repair, storage, and administrative operations for a portion of the DDOT fleet. It is of Mid-Century Modern architectural style and is representative of the evolving role of public transportation in Detroit. The complex was specifically designed to support the shift from fixed-rail streetcars to buses. The subject property is not listed in the NRHP and was not identified in the 2004 FEIS. The S.T. Gilbert Terminal complex is recommended eligible for inclusion in the NRHP under Criterion A (association with changes in public transportation in post WWII) and Criterion C (architecture).

5.4.1.3. I-94/M-10 INTERCHANGE

This interchange is historic because of its association with Post-World War II freeway construction and for its unique design. It was designed in 1945, began construction in 1948 and was completed in 1955. The interchange was the first freeway-to-freeway interchange in the Midwest. The design was considered so unique by the engineering community that a small model of it was built and displayed at the "Conference of the Future" held in New York City in 1952. The interchange is NRHP-eligible under Criterion A for its association with Post-WWII freeway construction and under Criterion C for its unique design.

5.4.1.4. UNITED SOUND SYSTEMS RECORDING STUDIOS

The United Sound Systems building at 5840 Second Ave. is eligible for inclusion in the NRHP for its association with some of the most influential musical artists of the 20th century. The recording studio was founded by James V. Siracuse in 1933 and moved to this location in 1939-1940. Besides recording popular music across many genres, the studio also recorded countless jingles used in radio and television commercials. The two-story brick building was originally a residence, built in 1916. The rear addition was added in circa 1960 when United Sound expanded its business. Artists who have recorded here include Miles Davis, John Lee Hooker, Isaac Hayes, Aretha Franklin, Keith Richards, George Clinton, and others. The studio closed in 2006 but was re-opened in 2014. It was listed as a City of Detroit Historic District in 2015. In 2017 a Michigan Historical Marker was erected on site by the United Sound System Recording Studios and the Detroit Sound Conservancy (Registered Site S0744).

5.4.1.5. 5832 SECOND AVE. HOUSE

The two-story Prairie Style house at 5832 Second Ave. was constructed in 1916 as a two-family dwelling. It retains integrity of location, design and materials, but is of a common type and design found throughout Detroit. Additional research indicates the house at 5832 Second Ave. is eligible under NRHP Criterion B because of its association with Mrs. Emma Fox, a locally prominent socialite and nationally recognized parliamentarian with a focus on helping improve the effectiveness of women's organizations. Mrs. Fox lived in one unit from 1920 until her death in 1945. Her driving interests were the quality of public education and advancing the social and political work of women's clubs. In 1962 the Detroit Public Schools dedicated the Emma Fox Primary School, which closed in 2005.

5.4.1.6. ELENORA APARTMENTS – 447-449 ANTOINETTE ST.

This property is a three-story apartment building built in 1913 by Stella Kaltz and is noted as illustrative of early 20th century small apartment building design. In its current condition it retains a good level of historic integrity. This potential historic property is not listed in the NRHP and was not identified in the 2004 FEIS. The building is considered NRHP eligible (Criterion A, community development) based on the *Apartment Buildings in Detroit, 1892-1970 Multiple Property Documentation Form*.⁹⁷

5.4.1.7. SQUARE D/DETROIT FUSE & MANUFACTURING BUILDING

The manufacturing building at 6060 Rivard St. is located in the area bounded by Piquette Avenue, Harper Avenue, Rivard Street, and Russell Street, adjacent to the northeast quadrant of the I-94/I-75 interchange. Albert Kahn designed the reinforced concrete building, constructed in 1909. Detroit Fuse and Manufacturing Company was a leader in the development and manufacture of enclosed electrical safety switches. The company expanded, and in 1917 became known as Square D. The company became one of the largest manufacturers and distributors of electrical supplies in the United States. The property is also significant as the site of a 107-day strike by members of the United Electrical Workers union in 1954. The strike was marked with incidences of violence between strikers and non-union replacement workers. The building is significant under NRHP Criterion A for its association with the Square D Company and with labor history.

5.4.1.8. GEMMER MANUFACTURING COMPANY

The Gemmer Manufacturing Company industrial complex at 6400 Mt. Elliott St. is significant for its role in the industrial growth of Detroit. Gemmer Manufacturing was founded in Wabash, Indiana but relocated to Detroit in 1907, operating from a factory at Merrick and Stanton streets. The company built the Mt. Elliott complex in 1926-1927 (with an addition in 1950). The company produced steering gears and transmissions. The company contributed to defense production in both world wars and the Korean Conflict. Gemmer employed between 1,000 and 1,200 workers, producing gears used in automobiles, trucks, and watercraft. The company moved to Lebanon, Tennessee, in 1962-1963.

5.4.2. Public Parks and Recreation Areas

5.4.2.1. WAYNE STATE UNIVERSITY ATHLETIC CAMPUS HARWELL BASEBALL FIELD (ACQUISITION SITES 1, 2 AND 3)

Wayne State University's athletic campus is in the southwest quadrant of the I-94/M-10 interchange. It is a Section 4(f) property due to its use as a publicly owned recreation area. The activities include college level baseball play, practice and spectating. The field also hosts numerous youth, high school, and city ball teams during the nonwinter seasons. Twenty-seven mature street trees line the perimeter of the athletic field block and chain-link fencing lines many of the sidewalks.

5.4.2.2. WIGLE RECREATION CENTER (WIGLE PARK)

This park is a 7.026-acre city-owned park in the Midtown neighborhood known as the Wigle Recreation Center site at 3650 John C. Lodge Service Drive. The park area includes play areas, basketball, tennis courts, and

⁹⁷ Quinn Evans Architects. National Register of Historic Places Multiple Property Documentation Form – Apartment Buildings in Detroit, 1892-1970, Wayne County, Michigan. Form prepared by Ruth E. Mills, Architectural Historian, et. al.

baseball/softball and a parking lot that is accessed by two driveways off John C. Lodge Service Drive. Most of the site is mowed grass. Three street trees line John C. Lodge Service Drive.

5.4.2.3. WEST WILLIS #2 PARK

West Willis #2 Park is in the Midtown neighborhood on M-10, south of I-94 at 949 West Willis Street. It is comprised of 0.15 acres of mowed lawn surrounded by chain link fence with what appears to be a former sand box that is now grown over. There is one shade tree near the eastern property boundary.

5.4.2.4. VERNOR PARK

This park/playground, located at 5947 Grandy Street in the Poletown East neighborhood, is 3.26 acres with amenities including a basketball hoop, informal baseball/softball diamond, and picnic tables. The site is primarily mowed lawn with approximately eight trees near the perimeter. A chain link fence runs along the frontage of the Edsel Ford Service Drive.

5.4.2.5. CASTADOR PARK

Castador Park, at 5995 Hurlbut Street in the West End neighborhood, has 1.76 acres of open space with a play structure with shade trees, basketball court with benches, and a baseball/softball backstop at the corner of Cadillac and Edsel Ford Service Drive. There are three street trees along Edsel Ford Service Drive, one on Hurlbut Street, and two on Cadillac Avenue. The remainder of the site is mowed field.

5.4.2.6. IRON BELLE TRAIL (CONNER CREEK GREENWAY)

The Iron Belle Trail is a 2,000-mile recreation trail beginning on the far western tip of Michigan's Upper Peninsula and ending at Belle Isle in Detroit. It traverses the Project limits at the Conner Avenue interchange using bike lanes on Conner Avenue and Harper Avenue, where it connects to an off-street, north/south-running path through Conner Playfield Park.

5.4.2.7. CONNER PLAYFIELD PARK

Conner Playfield is a publicly owned park located northwest of the interchange at 10644 Gratiot Avenue. Conner Playfield is a 21.68-acre park that includes a soccer field and a walking/biking path (Iron Belle Trail) that runs from Harper Avenue north, somewhat parallel to Conner Avenue. There are several landscaping and shade trees near the path. The Conner Creek Greenway Master Plan describes the playfield as a prominent open space along Conner Avenue and it is part of the greater Conner Creek Greenway.⁹⁸

5.4.2.8. CHANDLER PARK

Chandler Park is located at 12831 Frankfort Street in the Chandler Park neighborhood. This 200.39-acre park includes play areas, basketball, baseball/softball, picnic facilities, tennis courts, horseshoes, a swimming pool, and a comfort station. There is an 18-hole public golf course at 12801 Chandler Park Drive that includes a pro shop and practice green.

⁹⁸ Detroit Eastside Community Collaborative (DECC). (2003). Conner Creek Greenway Master Plan. Detroit: Detroit Eastside Community Collaborative.

5.5. Impacts to Section 4(f) Properties

5.5.1. Historic Properties

5.5.1.1. WOODBRIDGE NEIGHBORHOOD HISTORIC DISTRICT (ADVERSE EFFECT)

Similar to the ASA, the ASAM will acquire a 0.091-acre lot that contains the house at 5287 Hecla Street, which is a contributing element in the Woodbridge Neighborhood Historic District.

Other acquisition impacts within the Historic District include 0.764 acres of permanent right-of-way and 0.131 acres of temporary right-of-way along the West Edsel Ford Service Drive. This land will be required for grading during construction to replace sidewalks and to construct improvements to West Edsel Ford Service Drive (see **Appendix I**, Page I-13). No structures are present on these affected lots. The functions of the roadways will not change, and traffic noise and vibration are not expected to change substantially. The 2004 FEIS Section 4(f) Evaluation remains valid.

5.5.1.2. S.T. GILBERT TERMINAL (NO ADVERSE EFFECT)

The ASAM will require 0.068 acres of permanent right-of-way along the southern boundary of the S.T. Gilbert Terminal site. This acquisition accommodates the extension of the Edsel Ford Service Drive from Wabash Street to Rosa Parks Avenue. There will also be 0.043 acres of temporary right-of-way impacts along the southern boundary for grading during construction (see **Appendix I**, Page I-7). These impacts will not be an adverse effect because no structures will be affected, and the ASAM will not alter, directly or indirectly, the characteristics of the property that qualify it for inclusion in the NRHP. MDOT will, with the State Historic Preservation Office (SHPO) concurrence, request a Finding of *de minimis* Impact from FHWA.

5.5.1.3. I-94/M-10 INTERCHANGE (ADVERSE EFFECT)

The ASAM does not change the need to redesign the I-94/M-10 interchange and it continues to be an adverse effect (see **Appendix I**, Page I-6). The 2004 FEIS Section 4(f) Evaluation remains valid.

5.5.1.4. UNITED SOUND SYSTEMS RECORDING STUDIOS (ADVERSE EFFECT)

With the ASA, the USSRS building was proposed to be demolished and mitigation measures agreed to under the stipulations in the project Memorandum of Agreement (2005 MOA) (see **Appendix K**). The ASAM does not change the need to acquire the USSRS building. The impacts to the USSRS site are illustrated in **Appendix I**, Page I-9. Although the 2004 Section 4(f) Evaluation remains valid, the Project is exploring relocation of the building rather than demolition.

5.5.1.5. 5832 SECOND AVE. HOUSE (ADVERSE EFFECT)

The house at 5832 Second Ave. is located adjacent to USSRS and is also impacted by changes to the I-94/M-10 interchange ramp. During reevaluation, it was determined that 5832 Second Ave. is eligible for listing in the NRHP. The 0.10-acre site will be acquired and demolished. The impacts are illustrated in **Appendix I**, Page I-9. As the building appears to be NRHP eligible, demolition would pose an adverse effect and suitable mitigation measures will be developed in consultation with SHPO.

5.5.1.6. ELENORA APARTMENTS – 447-449 ANTOINETTE ST. (ADVERSE EFFECT (POTENTIAL))

The Elenora apartment building is located near USSRS and is also impacted by changes to the I-94/M-10 interchange ramp. The 0.133-acre site will be acquired and the building demolished. The impacts are illustrated in **Appendix I**, Page I-9. If the building is determined to be eligible for listing in the NRHP, an adverse effect will occur with its removal. MDOT proposes the previous not-eligible determination remains valid.

5.5.1.7. SQUARE D/DETROIT FUSE & MANUFACTURING BUILDING (ADVERSE EFFECT)

The ASAM does not change the need to acquire the site of Square D/Detroit Fuse and Manufacturing Company Building at 6060 Rivard St. in the northeast quadrant of the I-94/I-75 interchange. The site will continue to be impacted by the extension of Harper Avenue through the interchange and by the ramp from westbound I-94 to northbound I-75. Impacts are illustrated in **Appendix I**, Page I-8, and include 2.966 acres of permanent property acquisition. The 2004 FEIS Section 4(f) Evaluation remains valid.

5.5.1.8. HENDRIE STREET HISTORIC DISTRICT (NO ADVERSE EFFECT)

Project improvements within the potential Hendrie Street Historic District include changes to Hendrie Street that will result from the design of the Brush Street service interchange, just west of I-75. This interchange is close enough to the potential Hendrie Street Historic District that the ramp improvements need to extend west toward the potential historic district. The ASA would have eliminated Hendrie Street between Woodward Avenue and St. Antoine Street and replace it with continuous one-way westbound service drives. The ASA was strongly opposed by the city of Detroit because it eliminated existing connections.

The ASAM reconnects Hastings Street from Ferry Street to Harper Avenue with a new bridge crossing over I-94; extends Hendrie Street to a new Hastings Street extension; and converts Hendrie Street to two-way traffic flow. These design changes reestablish the street grid pattern improving local connectivity. To meet FHWA interstate access requirements, this alternative proposes a one-way eastbound Service Drive that connects the eastbound I-94 exit and entrance ramps and parallels Hendrie Street to the north. The ASAM is the avoidance alternative recommended by SHPO because it closely matches the existing roadway configuration adjacent to the potential Hendrie Street Historic District. Based on assumed eligibility, the proposed improvements pose no adverse effect because there will be no permanent right-of-way acquired from the affected properties. FHWA has made a preliminary determination that, if in consultation with SHPO, the Hendrie Street Historic District is found to be eligible for the NRHP, impacts to the Hendrie Street Historic District and the individual buildings within, would pose no adverse effect.

5.5.1.9. GEMMER MANUFACTURING COMPANY (NO ADVERSE EFFECT)

The ASAM will acquire 0.689 acres of permanent right-of-way at the Gemmer Manufacturing Company complex. An additional 0.064 acres of temporary right-of-way impacts will occur for grading during construction. These impacts are located on the southeast portion of the site as shown in **Appendix I**, Page I-5. No structures will be affected, and the impacts will be limited to the parking and transportation related areas of the site. The ASAM will not alter, directly or indirectly, the characteristics of the property that qualify it for inclusion in the NRHP. MDOT, with SHPO concurrence will request a determination that the impacts to Gemmer Manufacturing Company are *de minimis*.

5.5.2. Public Parks and Recreation Areas

5.5.2.1. WAYNE STATE UNIVERSITY ATHLETIC CAMPUS HARWELL BASEBALL FIELD (DE MINIMIS IMPACT)

The ASAM will require permanent property acquisitions for sidewalk reconstruction from the Wayne State University Athletic Campus southwest of the I-94/M-10 Interchange. Acquisitions include 0.095 acres at the corner of Edsel Ford Service Drive and John C. Lodge Service Drive next to Harwell Baseball Field and 0.003 acre from the northwest quadrant of the intersection of M-10 and Warren Avenue. The chain link fence surrounding the athletic facilities and a ground-mounted Wayne State University monument sign may be relocated. This minor, or *de minimis*, use will not affect occupancy, facilities, or functions, or create substantial noise or visual effects. Grading and roadway and sidewalk construction along the service drive frontages will temporarily impact 0.128 acres of the

property (see **Section 5.5.2.3**). Street trees between the sidewalk and street will likely be removed during replacement of the sidewalk and roadway. Access to the parking lots may be affected during construction but access will be provided during construction. MDOT will request a Finding of *De Minimis* Impact from FHWA. FHWA has made a preliminary determination that the impacts to the Wayne State University Athletic Campus are *de minimis*.

5.5.2.2. IRON BELLE TRAIL (CONNER CREEK GREENWAY) (DE MINIMIS IMPACT)

The Conner Avenue interchange will be redesigned and reconstructed as part of the ASAM, creating an opportunity to reroute the Iron Belle Trail off the street to a separate shared-use path and bridge. Changes proposed within Conner Playfield include vacating the southbound separated right-turn lane from Conner Avenue to Harper Avenue. This traffic movement will be shifted to the mainline of Conner Avenue. This change will create additional land at Conner Playfield to move the trail path and align it with the crossing at Harper Avenue. The alignment will improve safety for bikes and pedestrians crossing Harper Avenue. The impacts are illustrated in **Appendix I**.

Moving the Iron Belle Trail onto a separate bridge over I-94 freeway and exit/entrance ramps preserves and enhances safety by separating it from vehicular traffic. For this reason, it was preferred by the officials with jurisdiction (city of Detroit Parks and Recreation Department and the Michigan Department of Natural Resources) who were informed of the plans at a meeting with MDOT on Jan. 29, 2018 (see **Appendix I**). MDOT is preparing concept plans for improvements to the trail including aesthetics of the bicycle/pedestrian bridge, and further enhancing and improving the design of the trail through this location. FHWA has made a preliminary determination the impacts to the Iron Belle Trail are *de minimis*.

5.5.2.3. PARKS WITH TEMPORARY IMPACTS

Construction for grading for sidewalk replacements will temporarily impact parks. No recreation facilities or functions will be impacted by construction activities. Parks with temporary construction impacts are listed in **Table 5-1**.

Table 5-1: Temporary Construction Impacts to Parks

Park Name	Temporary Impact (in Acres)
Chandler Park	0.027
Vernor Park	0.030
Wayne State University Athletic Campus*	0.128
West Willis #2 Park	0.010
Wigle Recreation Center (Wigle Park)	0.031
Castador Park	0.015
Conner Playfield	0.156

* There will also be *de minimis* impacts to Wayne State University Athletic Campus. See **Section 5.5.2.1**.

5.6. Avoidance Alternatives

MDOT developed and evaluated avoidance alternatives for historic resources adversely affected by the ASAM. The anticipated *de minimis* use of properties does not require avoidance alternatives. Properties with anticipated *de minimis* use include Wayne State University and the Iron Belle Trail.

5.6.1. Historic Properties

5.6.1.1. WOODBRIDGE NEIGHBORHOOD HISTORIC DISTRICT

The 2004 FEIS discusses avoidance alternatives. Alternative locations for the improvements were not feasible or prudent. MDOT evaluated various cross-sections and changes to the ramps to and from I-94 and I-96 that affect the house at 5287 Hecla, but the structure could not be avoided. No additional avoidance alternatives were investigated for this DSEIS.

5.6.1.2. I-94/M10 INTERCHANGE

As discussed in the 2004 FEIS, MDOT evaluated several alternatives to improve I-94 without improving M-10. The alternatives were not prudent because they do not eliminate left-hand exits and entrances. Also, additional through-lanes cannot be added without modifying the interchange. No additional avoidance alternatives were investigated for this DSEIS.

5.6.1.3. UNITED SOUND SYSTEMS RECORDING STUDIOS

MDOT studied design alternatives to the ASA that avoid the USSRS building. Avoidance alternatives are described in the matrix in **Appendix I**, Page I-9. MDOT presented the alternatives to SHPO in a meeting on May 7, 2018. Due to the elevated risk of damage during construction, the alternatives are not feasible or prudent. MDOT and SHPO agreed impacts cannot be avoided. Therefore, there are no proposed modifications to the ASA freeway design at the USSRS property.

5.6.1.4. 5832 SECOND AVE. HOUSE

The house at 5832 Second Ave. is situated between USSRS and I-94. The ASA alignment in this area was selected because there is no prudent and feasible avoidance alternative.

5.6.1.5. ELENORA APARTMENTS – 447-449 ANTOINETTE ST.

Avoidance alternatives presented for USSRS in **Section 5.6.1.3** are applicable to the Elenora Apartments because the building is situated along the alignment of the I-94 to M-10 ramp. The ASA alignment in this area was incorporated into the ASAM because the avoidance alternatives do not mitigate the adverse effects to the building, and they created reduced safety conditions on the freeway.

5.6.1.6. SQUARE D/DETROIT FUSE & MANUFACTURING BUILDING

Section 6.4.4 of the 2004 FEIS discusses avoidance alternatives. No additional avoidance alternatives were investigated under the current study. Alternative locations for the proposed action were considered and were found not practical because the Project involves the reconstruction of an existing roadway with minimal need for additional right-of-way. The only alternatives under consideration were variations in cross-section and interchange design on the existing alignment. Other locations outside the immediate area will not provide necessary system connections and will require significant new rights-of-way that will result in substantially greater impacts to the natural and built environment.

The 2004 FEIS Section 4(f) evaluation reports the study team considered a narrower cross-section to reduce impacts on neighboring properties and minimize displacements but found it will not accommodate current and future traffic volumes nor will it improve operations and safety. Without these elements, the purpose and need would not be met. No additional avoidance alternatives were investigated for this DSEIS.

5.7. Measures to Minimize Harm

The Section 4(f) approval process requires the consideration of “all possible planning to minimize harm” on Section 4(f) resources. Minimization includes design modifications that reduce impacts and mitigation measures for unavoidable impacts. MDOT developed minimization and mitigation measures through consultation with the officials with jurisdiction over the affected resources.

5.7.1. Historic Properties

MDOT initiated consultation with SHPO to discuss avoidance alternatives and measures to minimize harm.

MDOT, in consultation with SHPO and FHWA will amend the 2005 MOA to formally document mitigation measures for adverse impacts to historic resources.

5.7.1.1. WOODBRIDGE NEIGHBORHOOD HISTORIC DISTRICT

The following mitigation measures from the 2005 MOA are expected to be retained. Coordination and consultation with SHPO are ongoing and final mitigation measures will be included in the Combined FSEIS and ROD.

MDOT will prepare photographic documentation and a historical overview of the historic property at 5287 Hecla Street according to SHPO Documentation Guidelines. MDOT shall ensure that all documentation is completed and accepted by the SHPO for deposit in the State Archives of Michigan, and any appropriate local repositories designated by the SHPO prior to the initiation of any construction activities (Stipulation I., I-94 Rehabilitation MOA, Jan. 10, 2005).

MDOT shall ensure that any vacant land within the Woodbridge District boundaries impacted by the Project will be landscaped in accordance with a landscape plan designed in consultation with and approved by the SHPO, a representative staff member from the City of Detroit Historic District Commission and the property owners. MDOT will retain a historian meeting the *Secretary of the Interior's Professional Qualifications Standards* (48 FR 44738-39) and trained in historic landscape analysis and design to assist in plan development (Stipulation II).

Subject to the availability of land within the Woodbridge District and the cooperation of the property owner, MDOT will make an effort to locate a vacant parcel within the boundaries of the Woodbridge District and move the impacted house at 5287 Hecla Street to the vacant parcel MDOT will develop a relocation plan in conjunction with the property owner and the SHPO. Should attempts to satisfy this mitigation measure fail, MDOT will prepare a marketing plan in conjunction with the SHPO to market the house for removal from its current location and relocation to another site. Should attempts to market the house fail, MDOT will demolish the building. Prior to any demolition, MDOT will record the house in accordance with Stipulation I. of the 2005 MOA (Stipulation III.A).

5.7.1.2. I-94/M10 INTERCHANGE

The following mitigation measures from the 2005 MOA are expected to be retained. Coordination and consultation with SHPO are ongoing and final mitigation measures will be included in the Combined SFEIS and ROD.

MDOT will prepare photographic documentation and a historical overview of the historic property according to SHPO Documentation Guidelines. MDOT shall ensure that all documentation is completed and accepted by the SHPO for deposit in the State Archives of Michigan, and any appropriate local repositories designated by the SHPO prior to the initiation of any construction activities (Stipulation I., I-94 Rehabilitation MOA, Jan. 10, 2005).

MDOT will compile copies of the original design plans and other materials relating to the design and construction of the I-94/M10 Interchange. MDOT will provide the SHPO and any other repository as directed by the SHPO, with the

compiled information. MDOT will ensure that the SHPO copy will meet the requirements for housing in the State Archives of Michigan (Stipulation IV. A. 1).

MDOT will produce a small-scale exhibit of the I-94 Interchange and coordinate the exhibit display with the SHPO (Stipulation IV. B. 1).

5.7.1.3. UNITED SOUND SYSTEMS RECORDING STUDIOS

MDOT and SHPO discussed the potential of relocating the USSRS as an option to maintain the building. The suggested location for the relocation would be a parking lot that is part of the USSRS property at the southeast corner of Second Avenue and Antoinette Street.

MDOT is consulting with SHPO regarding existing mitigation stipulations and amendments to the MOA related to relocation rather than demolition of the building.

5.7.1.4. 5832 SECOND AVE.

Since this house has been determined eligible for the NRHP, MDOT will develop suitable mitigation measures in consultation with SHPO and they will be added to the Project's MOA.

5.7.1.5. ELENORA APARTMENTS – 447-449 ANTOINETTE ST.

Since this building has been determined eligible for the NRHP, MDOT will develop suitable mitigation measures in consultation with SHPO and they will be added to the Project's MOA.

5.7.1.6. SQUARE D/DETROIT FUSE & MANUFACTURING BUILDING

The following mitigation measures from the 2005 MOA are expected to be retained. Coordination and consultation with SHPO are ongoing and final mitigation measures will be included in the Combined FSEIS and ROD.

MDOT will prepare photographic documentation and a historical overview of the historic property according to SHPO Documentation Guidelines. MDOT shall ensure that all documentation is completed and accepted by the SHPO for deposit in the State Archives of Michigan, and any appropriate local repositories designated by the SHPO prior to the initiation of any construction activities (Stipulation I., I-94 Rehabilitation MOA, Jan. 10, 2005).

MDOT will produce a physical and/or internet-based exhibit of the events surrounding the 1954 Square D strike and will coordinate the exhibit display with the SHPO.

5.7.2. Public Parks and Recreation Areas

5.7.2.1. CITY OF DETROIT PUBLIC PARKS

MDOT will restore any vegetation disturbed on city of Detroit park properties to its current condition, or better, upon completion of construction.

5.7.2.2. WAYNE STATE UNIVERSITY ATHLETIC CAMPUS

The following mitigation measures will be applied to work within the Wayne State University athletic campus.

MDOT will restore any vegetation disturbed on Wayne State University Athletic Campus property to its current condition, or better, upon completion of construction.

5.8. Coordination

MDOT will replace any trees removed. If space does not permit for replacements along the service drive, replacement trees can be planted in other areas on WSU campus.

Should the chain-link fence surrounding the athletic complex be impacted, MDOT will move or replace it.

Where right-of-way is required, MDOT will maximize space for athletic facilities and minimize green space between the street and sidewalk.

MDOT will relocate the ground mounted kiosk at the corner of the John C. Lodge Service Drive and Warren Avenue. Where possible, MDOT will maximize sidewalk space in this area.

During construction, MDOT will maintain access to the recreational facilities.

5.7.2.3. IRON BELLE TRAIL

During construction, MDOT will maintain access on the Iron Belle Trail.

5.8. Coordination

5.8.1. Public Meetings

FHWA and MDOT hosted four public meetings in November 2018 that presented information on Section 4(f) properties and potential impacts. FHWA and MDOT solicited public and agency comment and discussion with Project staff. A meeting summary is included in **Appendix A**.

At the November public meetings and at other meetings held throughout the planning process (see **Chapter 7**) comments were received about the USSRS. These comments indicated concern about the location of the building within the footprint of the off-ramp and that moving the structure would be an acceptable mitigation measure to minimize impacts of the I-94/M-10 realignment.

Positive comments were also received from members of the public regarding the planned improvements to bring the Iron Belle Trail onto a separate structure crossing I-94 at Conner Avenue.

5.8.2. Local and Agency Coordination

MDOT initiated consultation with the SHPO and coordination with the officials with jurisdiction of the Section 4(f) properties, and other interested parties to determine whether there were any additional actions available that would avoid, minimize and mitigate harm to impacted Section 4(f) properties.

5.8.2.1. HISTORIC PROPERTIES

For historic properties, MDOT is coordinating with SHPO to determine the significance of the surveyed properties and to identify those that are eligible for the NRHP. MDOT will submit a Determination of Effects letter, with supporting documentation for SHPO review and concurrence. For properties where adverse effects will occur, the 2005 MOA will be amended to include any additional adverse effects that are identified. SHPO agreed to the selection of avoidance alternatives for the Brush Street interchange within the potential Hendrie Street Historic District. SHPO concurred impacts at the USSRS and the Elenora Apartments could not be avoided. They also agreed the 2005 MOA is valid for the other properties that were previously identified, see **Appendix I**.

5.8.2.2. PARKS AND RECREATION AREAS

MDOT met and corresponded with the officials with jurisdiction, including officials from Michigan DNR Iron Belle Trail, Wayne State University, and the city of Detroit Department of Parks and Recreation to determine the purposes and significance of the Section 4(f) parks and recreation areas. MDOT provided the city and DNR conceptual design plans for the Iron Belle Trail crossing over I-94 at Conner Avenue including the proposed trail location and access points where it transitions from on-street bike lanes to off-street paths and relocation through Conner Playfield. Options for the cross-section of the trail were discussed. The city of Detroit was also provided plans for each affected public park location. Likewise, plans for the affected areas within the Wayne State University athletic campus were shared with Wayne State University officials at a site visit.

MDOT and the officials with jurisdiction discussed the potential temporary impacts to parks and recreation areas, potential minimization, and mitigation measures, and preliminary *de minimis* impact determinations. See **Sections 5.5** and **5.7** for details about impacts and mitigation measures. **Appendix I** includes correspondence documenting agreement by the officials with jurisdiction that the Project will have no significant impacts to the Section 4(f) park and recreation areas under their jurisdiction and that the amount and location of land to be used does not impair the use of the Section 4(f) property for its intended purpose. Officials with jurisdiction also agreed that the Project will not result in any temporary or permanent adverse change to the current activities, features, or attributes that are important to the purposes or functions that qualify the sites in question for protection under Section 4(f).

5.9. Section 4(f) Summary

5.9.1. No Feasible and Prudent Alternatives

The 2004 Final Section 4(f) Evaluation of prudent and feasible alternatives remains valid, and no substantive changes to the determination are proposed. The age and physical condition of existing I-94 between I-96 and Conner Avenue in Detroit requires action to keep the facility in serviceable condition. The congestion, capacity, safety, operational, and other problems identified in the 2004 FEIS require rehabilitating I-94 to current standards with added capacity. The existing right-of-way is used in its entirety to maximize the utilization of resources already committed to I-94 and to reduce impacts. The ASAM minimizes impacts while still accomplishing the Project purpose and need. As a result, there are no prudent and feasible alternatives to the ASAM.

5.9.2. Planning to Minimize Harm

The 2004 Final Section 4(f) Evaluation remains valid, with changes to account for newly reported Section 4(f) properties. The revised determination is as follows:

Since there is no prudent and feasible alternative to using the existing alignment and the use of adjacent Section 4(f) properties, the Project must include all possible planning to minimize harm.

Moving the Woodbridge Neighborhood Historic District house at 5287 Hecla Street to nearby vacant land will be considered during right-of-way acquisition, subject to feasibility, and approval by the owner. The I-94 cross-section was reduced to eliminate as many impacts as possible. The encroachments at the house on Hecla Street and at USSRS and at the Elenora apartment building cannot be avoided. These structures are impacted by the proposed I-94 westbound to M-10 northbound ramps. Numerous ramp configurations and lane widths and alignments were studied; however, the area is constrained by urban development that other locations for the ramps were not viable.

The left-hand entrances and exits on the I-94/M-10 interchange require replacement to bring the design into a standard, safe geometry. Moving the interchange to a new location to preserve the existing interchange is not

feasible or prudent because of the increased environmental and community impact it would cause at any new location. The redesign of the I-94/I-75 interchange to current design standards results in the ramp from westbound I-94 to northbound I-75 directly impacting the Square D/Detroit Fuse and Manufacturing Company Building. Moving this ramp is not feasible if it is to meet current design standards.

To mitigate the unavoidable impacts to historic resources, MDOT will record the properties in accordance with SHPO standards prior to their destruction or moving. The revised Project MOA will reflect updated measures to minimize harm, as needed.

Park properties were not discussed in the Final Section 4(f) Evaluation so are added to the Section 4(f) Evaluation update. In coordination with the city of Detroit, Iron Belle Trail staff and Wayne State University, MDOT identified park properties that may be impacted by the project and identified measures to minimize harm (see correspondence with the officials with jurisdiction in **Appendix I**).

5.9.3. Conclusion and Findings

The conclusion of the 2004 Final Section 4(f) Evaluation remains valid for the properties affected by the ASAM.

Based on the considerations discussed above, there is no feasible and prudent alternative to the use of land from the affected properties. The ASAM includes all possible planning to minimize harm to the following historic and parks and recreation area.

5.9.3.1. HISTORIC PROPERTIES

- Woodbridge Historic District/House at 5287 Hecla St. (adverse effect)
- I-94/M-10 Interchange (adverse effect)
- United Sound Systems Recording Studios (adverse effect)
- Square D/Detroit Fuse & Manufacturing Building (adverse effect)
- 5821 Second Ave. House (demolished)
- 5832 Second Ave. House (adverse effect)
- Elenora Apartments – 447-449 Antoinette St. (adverse effect)
- S.T. Gilbert Terminal (no adverse effect/*de minimis* impact)
- Gemmer Manufacturing Company (no adverse effect/*de minimis* impact)

5.9.3.2. PARK PROPERTIES

- Wayne State University Athletic Campus (temporary and *de minimis* impact)
- Iron Belle Trail (Conner Creek Greenway) (*de minimis* impact)
- Wigle Recreation Center (Wigle Park) (temporary impact)
- West Willis #2 Park (temporary impact)
- Vernor Park (temporary impact)
- Castador Park (temporary impact)
- Conner Playfield Park (temporary impact)
- Chandler Park (temporary impact)

6. COMPREHENSIVE LIST OF MEASURES TO MITIGATE IMPACTS

The mitigation measures discussed in this section are specifically for the Approved Selected Alternative with Modifications (ASAM) for the modernization of approximately 6.7 miles of interstate freeway (I-94) between I-96 and Conner Avenue (Project) in the city of Detroit, Michigan.

Mitigation addresses adverse impacts caused by the Project through measures such as avoidance, minimization, replacement, restoration, compensation or other means determined through coordination with agencies and public stakeholders. The goal of mitigation is to preserve, to the greatest extent possible, existing communities, land use, and natural resources, while improving transportation. Although some adverse impacts are unavoidable, precautions will be taken to protect social and environmental systems through environmental review, design, and construction processes.

The following sections discuss the mitigation concepts that are being considered at this time for the proposed Project. Without the benefit of detailed design plans and data, conceptual mitigation measures are proposed to avoid or reduce adverse impacts on certain resources. If the Project advances to the design phase, MDOT's design plans will incorporate additional social, economic, or environmental protection items prior to contract letting. More mitigation measures may be developed, if additional impacts are identified.

Specific mitigation measures that will be implemented by MDOT will be included in the design plans and permit applications. These measures will be compiled into the "Draft Project Mitigation Summary 'Green Sheet' for ASAM" included at the end of this section.



What are 'ASA' and 'ASAM'?

The "Approved Selected Alternative" or **ASA** is the selected alternative described in the Project's 2005 ROD, which affirmed the 2004 FEIS recommended alternative.

The "Approved Selected Alternative with Modifications" or **ASAM** is a proposed modification to the ASA. MDOT has not yet approved or selected the ASAM, but it is the preferred alternative evaluated in this DSEIS.

After a formal public and agency review period and public hearing on the SDEIS, MDOT and FHWA will identify a selected alternative in the Combined FSEIS and ROD.

6.1. Impacts to Community Facilities

MDOT will continue relationships with and will call on community leaders to help communicate Project activities and gather public input into the planning and environmental review process. Coordination with potentially affected schools, places of worship, and community centers will continue during roadway planning, design and construction.

MDOT is consulting with the city of Detroit Parks and Recreation Department, Wayne State University, and Michigan DNR on the affected city parks, Wayne State athletic campus and the Iron Belle Trail. Potential mitigation measures include the following:

6.1.1. Wayne State University Athletic Campus

- MDOT will restore any vegetation disturbed on Wayne State University Athletic Campus property to its current condition, or better, upon completion of construction.
- MDOT will replace any trees removed. If space does not permit for replacements along the service drive, replacement trees can be planted in other areas on WSU campus.
- Should the chain-link fence surrounding the athletic complex be impacted, MDOT will move or replace it.
- Where right-of-way is required, MDOT will maximize space for athletic facilities and minimize green space between the street and sidewalk.
- MDOT will relocate the ground mounted kiosk at the corner of the John C. Lodge Service Drive and Warren Avenue. Where possible, MDOT will maximize sidewalk space in this area.
- During construction, MDOT will maintain access to the recreational facilities.

6.1.2. City of Detroit Parks

MDOT will restore any vegetation disturbed on city of Detroit park properties to its current condition, or better, upon completion of construction.

6.1.3. Iron Belle Trail

During construction, MDOT will maintain access on the Iron Belle Trail.

6.2. Right-of-Way Acquisition and Relocation

6.2.1. Compliance with State and Federal Laws

Acquisition and relocation assistance and advisory services will be provided by MDOT in accordance and compliance with Act 31, Michigan P.A. 1970; Act 227, Michigan P.A. 1972; Act 149, Michigan P.A. 1911, as amended; Act 87, Michigan P.A. 1980, as amended, Act 367 Michigan P.A. 2006, as amended; Act 439, Michigan P.A. 2006, as amended, and the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Federal Law 91-646) (Uniform Act), as amended.; and Act 87, Michigan P.A. 1980, as amended. MDOT will inform individuals, businesses, and nonprofit organizations of the impact, if any, of the Project on their property. Every effort will be made through relocation assistance to lessen the impact when it occurs.

6.2.2. Residential

MDOT is required by statute to determine the availability of comparable, decent, safe and sanitary housing for eligible displaced individuals. MDOT has specific programs to implement the statutory and constitutional requirements of property acquisition and relocation of eligible displacees. Appropriate measures will be taken to ensure that all eligible displaced individuals from the seven residential relocations are advised of the rights, benefits, and courses of action available to them. Adequate replacement housing is available.

6.2.3. Business and Nonprofit Organizations

The Project will relocate 20 businesses. MDOT is required by statute to offer relocation assistance to displaced businesses and nonprofit organizations. MDOT has specific programs that will implement the statutory and constitutional requirements of property acquisition and relocation of eligible displacees. Appropriate measures will

be taken to ensure that all eligible displaced businesses and nonprofit organizations are advised of the rights, benefits, and courses of action available to them. Displaced businesses and organizations will be encouraged to relocate within the same community. Adequate replacement commercial properties are available.

6.2.4. Purchasing Property

MDOT will pay just compensation for fee purchase or easement use of property required for transportation purposes. “Just compensation,” as defined by the courts is the payment of “fair market value” for the property rights acquired plus allowable damages to any remaining property. “Fair market value” is defined as the highest price estimated, in terms of money, the property would bring if offered for sale on the open market by a willing seller, with a reasonable time allowed to find a purchaser, buying with the knowledge of all the uses to which it is adapted and for which it is capable of being used.

6.2.5. Relocation Information

A booklet titled “Your Rights and Benefits” detailing the relocation assistance program can be obtained by written request sent to MDOT, Development Services Division – Real Estate Services Section Area, P.O. Box 30050, Lansing, MI, 48909, or by calling (517) 335-4363.

6.2.6. Property Acquisition Information

A booklet titled “Public Roads & Private Property” that details private property purchasing can be obtained by written request sent to MDOT, Development Services Division – Real Estate Services Section Area, P.O. Box 30050, Lansing, MI, 48909, or by calling (517) 335-4363.

6.2.7. Conceptual Stage Relocation Plan

Appendix E includes the Project’s Conceptual Stage Relocation Plan (CSRP).

6.3. Impacts to Environmental Justice and Title VI Populations

To mitigate potential adverse impacts to environmental justice /Title VI population groups, and other impacts that may have a disproportionately high and adverse effect on minority or low-income population groups, MDOT has developed a CSRP that outlines the expected relocations at this stage of the study and the availability of replacement residential and commercial properties, and relocation assistance as defined in the plan. The 2019 *Conceptual Stage Relocation Plan* (see **Appendix E**) was updated for the DSEIS and will be updated, if necessary, for the Combined FSEIS and ROD. More mitigation measures may be developed if ongoing outreach activities during final design and construction identify additional impacts.

Regarding transient individuals, a Special Provision for “Relocation and Site Cleanup” will be included in the Project plan package to establish procedures for relocating unauthorized occupants of the Project site. The procedures will require the contractor to coordinate with the city of Detroit Department of Human Service, the Michigan Department of Community Health, and the local police authority in advance of removing transient dwellings. In addition, transient individuals will be notified in advance and provided the opportunity to clear their belongings prior to the removal of dwellings within the construction area. During final design, MDOT and the city of Detroit will also explore methods for cooperating with local shelters and other community services to provide alternate housing for transient individuals.

6.4. Economic Conditions

The industrial and commercial properties that will be displaced because of the ASAM will be acquired in conformance with the Federal Uniform Act (Federal Law 91-646). Businesses and nonprofit organizations are eligible for actual reasonable moving costs and related expenses. Displaced businesses may choose to relocate within the area to take advantage of development tax incentive programs and services offered in the city of Detroit.

In addition, during final design, local businesses will be contacted by MDOT and mitigation will be developed to assist businesses during and after construction.

6.5. Aesthetics and Visual Resources

Mitigation of impacts to aesthetics and visual resources is proposed as an integral part of the Project. Several actions already have been undertaken; these actions and additional future mitigation commitments are described below. Please see the *I-94 Rehabilitation Project Corridor Design Guidelines*.⁹⁹

MDOT is committed to a process of developing appropriate design themes for the Project consistent with the Department's Context Sensitive Solutions program. The process will continue based on the findings gained during this phase of the Project and carried forward into subsequent phases of design.

MDOT will seek agreements with the city of Detroit to maintain planters, median plantings, street trees and landscaping.

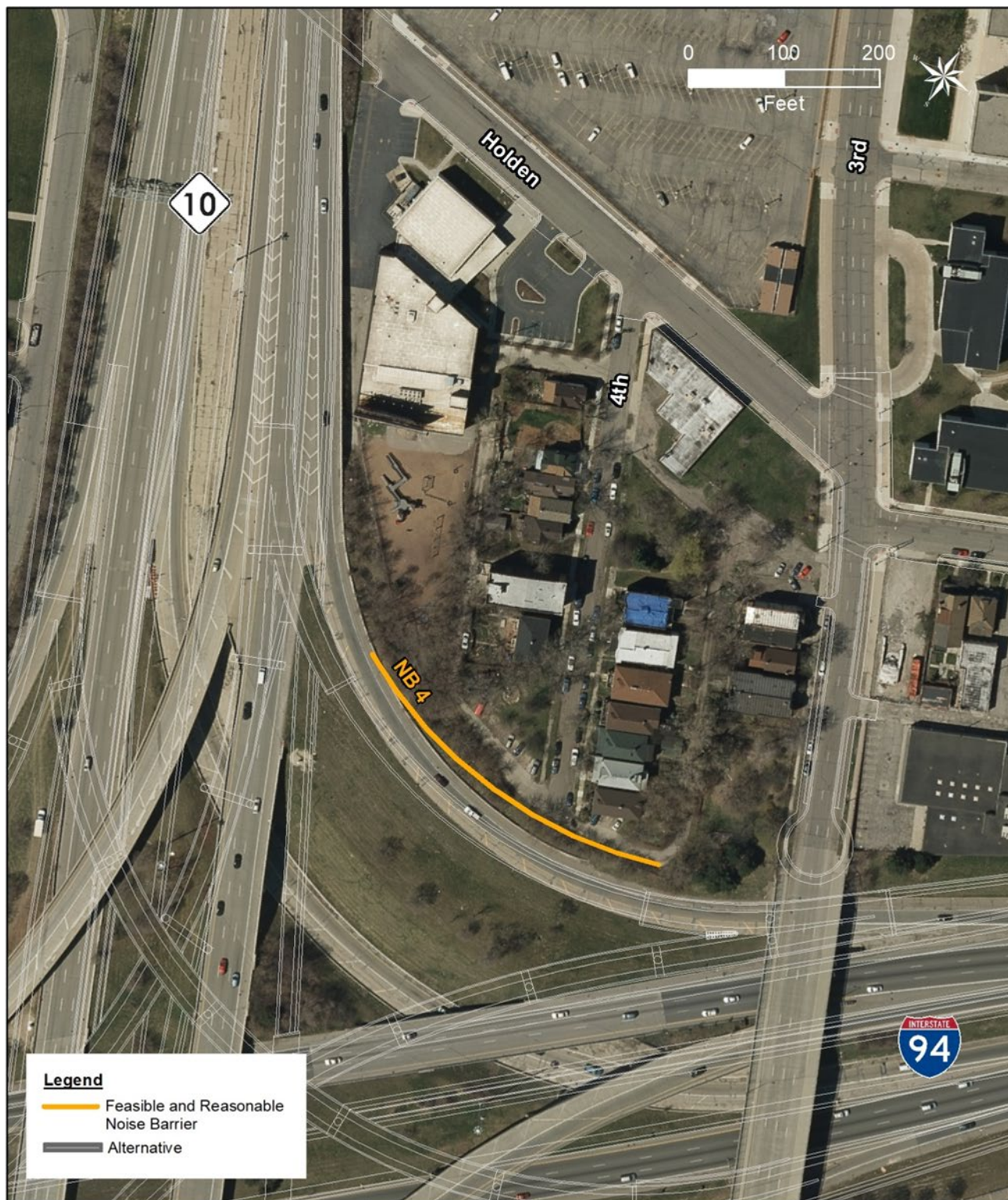
6.6. Noise Barriers

As shown in Table 8 of the *Noise and Vibration Analysis Technical Memorandum – TM 48*, which is presented in **Appendix G**, MDOT identified one reasonable noise barrier, which MDOT intends to install as highway traffic noise abatement for the Project. The preliminary assessment is based on preliminary design for barrier cost(s) and noise abatement as discussed in this document. If it subsequently develops during final design that these conditions have substantially changed, the noise impacts will be reanalyzed, and the abatement measures might not be provided if noise criteria are no longer met.

Based on the future design year noise levels, twenty noise barriers were modeled. Noise Barrier 4 (NB 4) meets preliminary feasibility criteria and reasonableness criteria, with the predicted noise reduction ranging from 0 to 12 decibels for receptors behind the barrier. The estimated cost of this barrier per benefited receptor (\$20,707 in 2018 dollars) would also meet the allowable cost per benefited receptor (\$46,967 in 2018 dollars). NB 4 is located on the north side of the I-94 off-ramp to northbound M-10 between Third Avenue and Holden Street as shown in **Figure 6-1**. NB 4, designed to mitigate the noise impact for residences along Third Avenue and 4th Street, is approximately 383 feet in length and 24 feet tall (see Figure 4.4 of the *Noise and Vibration Analysis Technical Memorandum – TM 48* presented in **Appendix G**). NB 4 reasonableness criteria will be verified in final design.

⁹⁹ Michigan Department of Transportation. (2010).

Figure 6-1: Noise Barrier 4 Location Map



6.7. Contamination

A Preliminary Site Investigation (PSI) is recommended for locations on-site that are related to on-site and off-site properties identified with medium and high environmental risk ratings. A PSI will provide environmental data that could be utilized to protect the health and safety of workers during demolition and/or construction activities and to manage construction/demolition waste.

Following the ongoing collection and evaluation of chemical characteristics of soil, MDOT will coordinate with EGLE and a Due Care Plan will be prepared. The Due Care Plan may be prepared in the form of specifications to be part of construction contract documents. The Due Care Plan will address needs for worker safety, proper disposal of contaminated soil and sediment if present, and prescribe steps to prevent exacerbation of contamination.

6.8. Water Quality

The ASAM will increase impervious area by 78.55 acres; a 28.0% increase over existing conditions. MDOT will review the proposed improvements along the service drives and local street improvements to identify opportunities to incorporate green infrastructure to the extent feasible based on localized grading, soil conditions, available right-of-way, ground water elevation, and available outlet locations. Where conditions are favorable, MDOT will further investigate green infrastructure in the form of bioretention using bioretention basins or bioswales.

The collection system will be evaluated further during final design phases. MDOT will develop the Project's conceptual drainage system according to MDOT's drainage manual, which uses a 50-year design storm for depressed freeways.¹⁰⁰ The Project's stormwater system will meet the city's criteria for allowable discharge rates into the Detroit Water and Sewerage Department (DWSD) combined sewer and will treat water that drains to the I-96 MDOT storm-only system to meet the requirements of MDOT's stormwater permit.

The design of the stormwater collection system, underground storage, detailed pump station designs, and a pump switching plan, will be completed during final engineering design. MDOT will coordinate as required with DWSD and Michigan Department of Environment, Great Lakes, and Energy (EGLE) or other applicable regulatory agencies.

The Project design will include measures to remove sediment before highway and street run-off reaches the receiving waters. To accomplish this, the Project will conform to the procedures in MDOT's *Phase II Storm Water Management Plan* (SWMP) and will incorporate installation and maintenance of appropriate best management practices (BMPs) as set forth under Chapter 9 of the drainage manual.^{101, 102} MDOT will select permanent BMPs with input from DWSD and EGLE or other applicable regulatory agencies.

During construction activities, the Phase II National Pollutant Discharge Elimination System (NPDES) permit (No. MI0057364) will be implemented. MDOT will submit a Notice of Coverage form to the EGLE. NPDES site inspections of soil erosion and sedimentation control measures will be done every seven days including weekends or within 24 hours of a precipitation event that results in a stormwater discharge from the site. Construction activities will be conducted under MDOT's approved *Soil Erosion and Sedimentation Control (SESC) Plan* and the *State of Michigan's Permit-by-Rule*.

¹⁰⁰ Michigan Department of Transportation and Tetra Tech MPS. January 2006.

¹⁰¹ Michigan Department of Transportation. April 1, 2005.

¹⁰² Michigan Department of Transportation and Tetra Tech MPS. January 2006.

6.9. Natural Resources

6.9.1. Vegetation and Wildlife

Ornamental trees and plants that are removed for construction of the Project will be replaced in kind with native woody and herbaceous species to the extent practicable. During final design, MDOT will consider additional landscaping consistent with the *I-94 Rehabilitation Project Corridor Design Guidelines*.

The provisions of the Migratory Bird Treaty Act apply to removal of nests prior to bridge demolition and construction. The special provision for Migratory Bird Protection will be added to the final plans. This will include adhering to restrictions on any bridge work that requires activity with the potential to affect actively nesting birds. The contractor is responsible for determining the presence of migratory birds and following prescribed actions depending on whether the work is to be done during nesting season, which is generally between April 15 to Sept. 1.

6.9.2. Soils

Erosion control plans will be included in the Project's design plans, which the construction contractor will be required to follow. Plans are required to include the installation and maintenance of temporary and permanent soil erosion control measures with the intent to prevent or minimize erosion and to keep eroded material from running off into adjacent waterways and properties. Measures will be developed in coordination with EGLE and MDOT and in compliance with erosion and sediment control guidelines published in MDOT's *Road Design Manual*.¹⁰³ Measures will include erosion controls to be applied during construction, and establishment of vegetation in appropriate locations.

6.10. Cultural Resources

6.10.1. Archaeological Resources

Regarding the unmarked cemetery located in or near the I-94/Conner Avenue interchange, MDOT is committed to pursuing due diligence given the possibility that human remains may be present. Once design plans are sufficiently detailed to determine where Project impacts will take place in the vicinity of the unmarked cemetery, MDOT will take appropriate measures to ensure that any human remains, if present, are treated appropriately and in accordance with Michigan law and legal mandates.

6.10.2. Historic Resources

The 2005 MOA executed with the 2005 Record of Decision (2005 ROD) is still valid and addresses the mitigation of impacts to properties identified in the 2004 FEIS. Stipulations contained in the 2005 MOA have not been carried out since the parts of the Project subject to Section 106 have not yet been constructed. Amendments to the 2005 MOA are recommended to address the findings of the updated historical and archaeological surveys. Coordination with the State Historic Preservation Officer (SHPO) and consulting parties will continue. MDOT and FHWA will consider comments received regarding historic properties, and they will be recorded in the Combined FSEIS and ROD.

Typically, unavoidable historic property impacts from MDOT projects are, at a minimum, mitigated by the preparation of photographic and historical documentation prepared according to SHPO guidelines. Such

¹⁰³ Michigan Department of Transportation. "Erosion & Sedimentation Control General". Chapter 2.05. *Road Design Manual*. Revised Nov. 28, 2011. Available at: <https://mdotcf.state.mi.us/public/design/englishroadmanual/>.

documentation is deposited into the Michigan History Center Archives and other repositories as recommended by SHPO.

6.11. Utilities

Utilities are responsible for relocating utility infrastructure prior to and during construction. Disruption of utility service will be temporary, and residents and businesses will be notified in advance. See also **Section 4.16.10** regarding disruption of utilities during construction.

6.12. Construction Impacts

6.12.1. Traffic

Disruption of traffic in the construction area will be minimized to the extent possible. A public awareness and information program will inform residents, businesses, trucking companies and other travelers about the I-94 construction schedules, ramp closings, alternative routes, and other matters affecting travel in and through the area. MDOT will implement Active Transportation and Demand Management (ATDM) strategies and will continue to collaborate with transit providers in the region to develop transit mitigation measures that may include additional transit service to help alleviate congestion and improve safety.

The construction phasing will include planned local street connections when feasible prior to the construction of mainline I-94. Adding local street connections that don't exist today will help to keep traffic that was utilizing the I-94 Freeway for local trips on the local roadway network. Construction of the I-94 mainline is anticipated to start in 2023 and continue through 2036 based on the current funding structure. Three construction staging options are being considered including:

- Part-width construction, where two lanes of traffic would be maintained in each direction;
- Directional closures, where one direction of travel on I-94 would remain open and the opposite direction would be detoured to other state roadways; and
- Full closure, where both directions of travel on I-94 would be detoured onto other state roadways.

The duration of ramp closings will be minimized to the extent practicable, and where possible, adjacent ramps will not be closed at the same time. Incentive and/or Penalty Clauses can be included in construction contracts to encourage speedy construction and minimize the duration of construction. Through-traffic that does not elect to use suggested detours will be encouraged to use alternate routes and/or transit service through the ATDM system. Traffic management measures such as signage and temporary barricades will be used on non-arterial local streets to discourage through-traffic on local streets. Michigan Avenue and Gratiot Avenue will be used as alternate routes for traffic on I-94 originating and/or destined for the Central Business District in Detroit. Adaptive traffic signal control will be used on Michigan Avenue and Gratiot Avenue to mitigate spikes in traffic volumes.

Informational signage encouraging the use of alternative routes will be erected as far away as Port Huron and Ann Arbor as well as within the work zone. It is expected that these efforts will reduce travel on I-94 in the Project area so that the available lanes will be adequate during most times other than the morning and afternoon peak periods. In addition, MDOT will utilize techniques to reduce travel demand, construction duration, and minimize community impacts, such as:

- Encouraging carpooling through advertising campaigns, pool development, and planning.
- Using existing and proposed Intelligent Transportation System (ITS) facilities to inform and redirect motorists to routes outside of the construction zone.
- Providing an information campaign that announces identified alternate travel routes prior to construction and informs residents of upcoming construction and suggesting alternative travel options and routes.
- Working with Regional Transit Authority (RTA), Suburban Mobility Authority for Regional Transportation (SMART), and Detroit Department of Transportation (DDOT) to provide transit away from construction activities to alternate routes such as Gratiot Ave and Michigan Ave to provide circulation for residents within the Project area.
- Working with RTA, SMART, and DDOT to determine if adding bus service from urban and suburban areas with sizable volumes of traffic heading downtown or to major employers would reduce traffic volumes through the construction area.

Although drivers' personal travel patterns might be disrupted, access to homes and businesses will be maintained. Continuing coordination between MDOT, the contractor, and local businesses will be conducted to inform business owners or managers of construction activity schedules and to inform the contractor of any special needs of the businesses.

6.12.2. Transit Service Impacts

6.12.2.1. DISRUPTION OF SCHEDULE

Construction activities within the Project limits may disrupt transit schedules. Such disruptions can be mitigated with advanced planning and data analysis. As delay patterns emerge throughout the construction cycle transit agencies can adjust transit schedules to mitigate the impact to transit users. However, due to the requirements of labor contracts that typically only allow for three schedule adjustments per year, MDOT will initiate early communication of potential closures or major changes in the maintenance of traffic to allow transit agencies time to include mitigating measures in schedule development. Rather than rely on advanced planning, transit agencies may choose to include additional schedule recovery time for potentially impacted routes during the planned construction period.

6.12.2.2. ROUTE DETOURS

Route detours are the second biggest impact that construction will likely have on transit users. The customer impact of detours can be minimized by placing them in areas that do not change stop locations for affected routes. When moving or eliminating a transit stop to accommodate a detour MDOT will coordinate with transit agencies to develop advanced notice and placing an alternative stop location to minimize impacts on those using the transit service. Often the most effective form of communication with transit riders is at their stop location or on the bus itself and should be considered when planning the temporary or permanent elimination of a transit stop. Maintenance of traffic will also consider an alternative to the eliminated stop near the original location while maintaining ADA compliance. Major changes to the distance to access a stop impacts the overall travel times of transit users.

6.12.2.3. NONREVENUE SERVICE IMPACTS

The third and final category of the construction impact on transit are nonrevenue service impacts. These impacts generally are limited to the transit agency itself and may not be realized by users of the transit system. MDOT will coordinate with transit agencies to develop appropriate measures to offset or minimize delays as traffic maintenance plans are developed.

6.12.3. Emergency Services

Routes for emergency vehicles such as police, fire and ambulance will need to be re-established along I-94 between M-10 and I-75 where vehicular bridges will be removed.

MDOT and the appropriate emergency services agencies will cooperatively develop an emergency response plan to be implemented during construction to maintain emergency services within the Project limits. Final design plans will be shared with Detroit Homeland Security & Emergency Management to include in amended comprehensive emergency response plans.

6.12.4. Erosion and Sedimentation Control

EGLE designated MDOT as an Authorized Public Agency (APA) for implementation of the Public Act 451, Natural Resources and Environmental Protection, Part 91 (Soil Erosion and Sedimentation Control). The intent of Act 451 Part 91 is to protect the waters of the state by minimizing erosion and controlling sediment. MDOT has implemented a program and procedures to comply with soil erosion and sedimentation control regulations. Grading activities within MDOT right-of-way are conducted in accordance with Part 91. EGLE may inspect and enforce soil erosion and sedimentation control practices during construction to ensure that MDOT and the contractor follow Part 91 rules and regulations.

MDOT's *Soil Erosion and Sedimentation Control Manual* (April 2006), in conjunction with MDOT's Standard Specifications for Construction, has been developed to aid in the selection and application of adequate control measures during Project development and delivery.

Construction activities such as demolition, excavation, grading, and equipment staging may cause soil erosion. Without erosion control measures, sediments may enter storm sewers, which eventually lead to the Detroit River. Such erosion could occur during construction activities, but also could result in permanent adverse impacts to downstream waters and off-site properties if not properly controlled.

MDOT's approved operating erosion and sedimentation control program on file with the EGLE will ensure compliance with Act 451, Part 91 (Soil Erosion and Sedimentation Control). MDOT's standard soil and erosion control measures are considered best management practices (BMPs).

As such, the following measures will be taken to minimize soil erosion and sedimentation during construction:

- Temporary and permanent soil and erosion and sedimentation control measures will be followed as set forth in MDOT's *Soil Erosion and Sedimentation Control Manual* (April 2006).
- An earth change plan conforming to rule R323.1703 and as directed by the MDOT's *Soil Erosion and Sedimentation Control Manual* (April 2006) will be prepared by MDOT for any earth changes that are not covered by the approved procedures in MDOT's *Soil Erosion and Sedimentation Control Manual* (April 2006).
- At a minimum MDOT's Standard Specifications and practices for construction site erosion control will be included on plans and drawings that show details of erosion control measures. The design plans will provide details of best management practices. The construction contractor will be responsible for implementing the plans.
- A Stormwater Pollution Prevention Plan will be prepared for the Project. Where dewatering is required, appropriate erosion/sedimentation controls will be implemented.

6.12.5. Lighting

For construction activities that will occur at night, lighting for night work will follow MDOT's special provisions in effect at the time of construction. This will include the submittal of a "work area lighting plan." Lighting levels should not fall below the minimum requirements and should not spill over to adjoining property and should not interfere with traffic, workers and inspection personnel. The MDOT Project Engineer will review and approve a lighting plan and layout prior to the start of construction and the construction contractor will be responsible to implement the lighting plan. Permanent freeway lighting plans will be developed to minimize disturbance to adjacent properties.

6.12.6. Surface Streets

Damage to adjacent local street pavements could occur during construction activities. MDOT's Standard Specifications for construction will guide the use of construction equipment on pavements and structures. Local roadways will be inspected before construction begins and at regular intervals during construction. Road damage caused by construction vehicles, equipment or activities will be temporarily repaired during the construction period. After construction is complete, a final road inspection will be conducted by MDOT and the construction contractor will make permanent repairs.

6.12.7. Disposal of Excess Materials

Surplus or unsuitable material generated by construction will be disposed of in accordance with specific provisions designed to control possible detrimental impacts of this material. Hazardous materials, such as asbestos, removed from buildings to be demolished will be disposed of in accordance with local, state and federal laws.

If surplus or unsuitable material is to be disposed of outside the right-of-way, the contractor will obtain and file with MDOT written permission from the owner of the property on which the material is to be placed. In addition, no surplus or unsuitable material is to be disposed of in any public or private wetland area, watercourse, or designated floodplain.

Inert debris may be used as a basement fill to a depth not less than two feet below the ground level if the basement is not within the roadway cross-section. Debris used as fill must be covered with at least two feet of clean soil to fill voids. Basement walls are to be removed to ground level.

Disposal of solid wastes must comply with all applicable EGLE regulations.

6.12.8. Disruption of Utilities

Temporary disruption of utility service and relocation of utilities will occur as roadways are modified. The exact locations of water, sanitary sewer, electrical, telephone, cable and storm sewer lines will be identified in the next phase of roadway design.

Detailed utility plans will be prepared during the next engineering design phases of the Project. During construction, MDOT and the construction contractors will coordinate with the appropriate utility distributors to ensure minimal disruption of service to residents and businesses. Disruption of services during construction will be temporary and business and residential customers will be notified of planned service disruptions in advance. Chapter 9 of the MDOT's *Road Design Manual* sets forth the policies and procedures to be followed by the construction contractor and MDOT.

6.12.9. Visual Impacts

During construction, temporary, short-term visual changes will occur including vegetation removal and earth-moving operations, construction of the various elements of the modernization including bridges, interchanges, roadway, ditches, and walls. Construction activity and the presence of construction equipment will also have a visual impact. Until the construction sites are cleaned-up and vegetation restored, viewers will be subjected to these views.

Work areas will be restored upon completion of the Project including re-seeding to re-establish vegetation, landscaping, and removal of construction-related equipment and refuse. Site clean-up will be the responsibility of the construction contractor and shall follow MDOT's Standard Specifications for Construction Section 209 – Project cleanup. Clean-up will address roadsides, the area within the right-of-way and up to 50 feet beyond the grading limits. All debris, fences, fallen timber, logs, guardrail section and posts, rocks, boulders and rubbish will be removed and properly disposed of.

6.13. Project Mitigation Summary (Green Sheet) for ASAM

The following four pages comprise the Project Mitigation Summary (Green Sheet).

**I-94 Detroit Modernization Project
I-96 to Conner Avenue
Draft Supplemental Environmental Impact Statement
Project Mitigation Summary (Green Sheet)
for Approved Selected Alternative with Modifications (ASAM)**

Draft August 9, 2019

This Project Mitigation Summary “Green Sheet” contains the Project-specific mitigation measures being considered at this time. A Final Green Sheet will be prepared and included in the Combined Final Supplemental Environmental Impact Statement and Record of Decision (Combined FSEIS and ROD). These mitigation items and commitments may be modified during the final design, right-of-way acquisition or construction phases of this Project. The Project mitigation will be tracked and sign-off on the mitigation commitments will occur as the Project progresses through the various phases; design, right-of-way acquisition, construction, and maintenance.

The Michigan Department of Transportation (MDOT) does not propose mitigation measures where certain resource areas are not impacted. These resources include stream crossings, floodplains, wetlands, and threatened and endangered species.

Draft Green Sheet: Project Mitigation Summary

Impact Category	Mitigation Measures
I. Social and Economic Environment	
a. Visual Effects	MDOT will continue developing appropriate Project design themes consistent with the Department’s Context Sensitive Solutions program and the I-94 Rehabilitation Project Corridor Design Guidelines. The design process will continue workshops initiated during this phase of the Project through subsequent design phases. MDOT will seek agreements with the city to maintain planters, median plantings, street trees and landscaping.
b. Relocations	Adequate replacement housing and industrial/commercial space is available to replace the seven residential and 20 businesses that will be relocated. MDOT will encourage displaced businesses and organizations to relocate within the same community. The 2019 Conceptual Stage Relocation Plan (CSRP) was updated for the DSEIS (see Appendix E) and will be updated, if necessary, for the Combined FSEIS and ROD.
c. Environmental Justice/Title VI	To mitigate potential adverse impacts to Environmental Justice (EJ)/Title VI population groups, and other impacts that may have a disproportionately high and adverse effect on minority and low-income population groups, MDOT will implement a CSRP that outlines the expected relocations at this stage of the study and the availability of replacement residential and commercial properties, and relocation assistance as defined in the plan. The 2019 CSRP (see Appendix E) was updated for the Draft Supplemental Environmental Impact Statement (DSEIS) and will be updated, if necessary, for the Combined FSEIS and ROD. The project design will follow the I-94 Rehabilitation Project Corridor Design Guidelines to further minimize Project impacts in local neighborhoods. Regarding transient individuals, a Special Provision for “Relocation and Site Cleanup” will be included in the Project plan package to establish procedures for relocating unauthorized occupants of the Project site. During final design, MDOT and the city of Detroit will also explore methods for cooperating with local shelters and other community services to provide alternate housing for transient individuals. To minimize Project impacts to nearby businesses and residents resulting from construction activities, MDOT will implement the measures listed in Row V.b., “Maintenance of Traffic,” of this Green Sheet. More mitigation measures may be developed, if additional impacts are identified through MDOT’s ongoing public participation program described in Chapter 7 of this document.

Impact Category	Mitigation Measures
a. Parks	The MDOT Frequently Used Special Provision (FUSP) for “Construction Staging Areas” must be included in the MDOT proposal. The contractor is prohibited from using public recreational property for construction staging or storage unless it is defined in the contract. During construction, the contractor must maintain access to all recreational properties at all times. Wayne State University Athletic Campus • MDOT will restore any vegetation disturbed on Wayne State University Athletic Campus property to its current condition, or better, upon completion of construction. • MDOT will replace any trees removed. If space does not permit for replacements along the service drive, replacement trees can be planted in other areas on WSU campus. • Should the chain-link fence surrounding the athletic complex be impacted, MDOT will move or replace it. • Where right-of-way is required, MDOT will maximize space for athletic facilities and minimize green space between the street and sidewalk. • MDOT will relocate the ground mounted kiosk at the corner of the John C. Lodge Service Drive and Warren Avenue. Where possible, MDOT will maximize sidewalk space in this area. City of Detroit Public Parks • MDOT will restore any vegetation disturbed on city of Detroit park properties to its current condition, or better, upon completion of construction. Iron Belle Trail • During construction, MDOT will maintain access on the Iron Belle Trail.
b. Traffic Noise	MDOT completed a noise and vibration technical analysis (see Appendix G). Project noise levels exceed Federal Highway Administration (FHWA) Noise Abatement Criteria. One noise barrier (NB 4) is a feasible and reasonable barrier, which MDOT will evaluate in further detail during final design. The preliminary assessment is based on preliminary design for barrier costs and noise abatement. NB 4 is located on the north side of the I-94 off-ramp to northbound M-10 between Third Avenue and Holden Street. NB 4, designed to mitigate the noise impact for residences along Third Avenue and Fourth Street, is approximately 383 feet in length and 24 feet tall. If it subsequently develops during final design that these conditions have substantially changed, the noise impacts will be reanalyzed, and the abatement measures might not be provided if noise barrier criteria are no longer met.
c. Economic	The 20 business properties displaced by the Project will be acquired in conformance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Federal Law 91-646). Businesses and nonprofit organizations are eligible for actual reasonable moving costs and related expenses. Displaced businesses may choose to relocate within the area to take advantage of development tax incentive programs and services offered in the city of Detroit. In addition, during final design, MDOT will contact local businesses and appropriate mitigation will be developed to assist businesses during and after construction.
II. Natural Environment	
a. Tree removal, clearing and landscaping	Ornamental trees and plants removed for construction of the Project will be replaced in kind with non-invasive species. During final design, MDOT will consider additional landscaping consistent with the I-94 Rehabilitation Project Corridor Design Guidelines adopted in 2010. No tree removal restriction dates apply to this project.

Impact Category	Mitigation Measures
b. Water Quality	The ASAM will increase impervious area by 78.55 acres; a 28% increase over existing conditions. MDOT will review the proposed improvements along the service drives and local street improvements to identify opportunities to incorporate green infrastructure to the extent feasible. The design of the stormwater collection system, underground storage, detailed pump station designs, and a pump switching plan, will be completed during final engineering design. MDOT will develop the Project's conceptual drainage system according to the MDOT drainage manual guidelines, which uses a 50-year design storm for depressed freeways. The Project's stormwater system will meet the city's criteria for allowable discharge rates into the Detroit Water and Sewerage Department (DWSD) combined sewer and will treat water that drains to the I-96 MDOT storm-only system to meeting the requirements of MDOT's stormwater permit. MDOT will coordinate as required with DWSD and Michigan Department of Environment, Great Lakes, and Energy (EGLE) or other applicable regulatory agencies. The Project will conform to the procedures in MDOT's Phase II Storm Water Management Plan (SWMP) and will incorporate installation and maintenance of appropriate best management practices (BMPs) as set forth under Chapter 9 of the MDOT drainage manual. MDOT will select permanent BMPs with input from DWSD and EGLE or other applicable regulatory agencies.
c. Migratory Birds	The Special Provision for "Migratory Bird Protection" will be added to the final plans. The contractor is responsible for determining the presence of migratory birds and following prescribed actions depending on whether the work is to be done during nesting season, which is generally considered to be April 15 to Sept. 1.
III. Hazardous / Contaminated Materials	
a. Contaminated Sites	A 2018 Project Area Contamination Survey (PACS) identified 195 properties with a low- or high-risk potential for contamination. One-hundred and twenty-nine properties are rated high-risk and 66 are rated low-risk. There are no properties rated as medium-risk. A Preliminary Site Investigation (PSI) is recommended for locations on-site that are related to on-site and off-site properties with medium and high environmental risk ratings. Following the ongoing collection and evaluation of chemical characteristics of soil, MDOT will coordinate with EGLE and a Due Care Plan will be prepared. The Due Care Plan may be prepared in the form of specifications to be part of construction contract documents. The Due Care Plan will address needs for worker safety, proper disposal of contaminated soil and sediment if present, and prescribe steps to prevent exacerbation of contamination. The Special Provision for "Non-Hazardous Contaminated Material Handling and Disposal" will be included in the Project Proposal.
IV. Cultural Environment	
a. Historic	The 2005 Memorandum of Agreement (MOA) executed with the 2005 ROD is still valid and addresses the mitigation of impacts to properties identified in the 2004 Final Environmental Impact Statement (FEIS). Stipulations contained in the 2005 MOA have not been carried out since the parts of the Project subject to Section 106 have not yet been constructed. MDOT will amend the 2005 MOA, as necessary, to address the findings of the updated historical and archaeological surveys. Coordination with the State Historic Preservation Officer (SHPO) and consulting parties will continue. Comments on historic properties that are received will be considered and reported in the Combined FSEIS and ROD. See Section V.a. for additional measures to mitigate short-term vibration impacts during construction.
b. Archaeological	An unmarked cemetery is located in or near the I-94/Conner Avenue interchange. Once design plans are sufficiently detailed to determine where Project impacts will take place in the vicinity of the unmarked cemetery, MDOT will take appropriate measures to ensure that any human remains, if present, are treated appropriately and in accordance with Michigan law and legal mandates.

Impact Category	Mitigation Measures
V. Construction	
a. Vibration	The primary means of mitigating short-term vibration impacts resulting from construction activities is to require the contractors to prepare a vibration control plan. MDOT will develop a vibration monitoring program during the design phase that will identify locations sensitive to vibration, conduct preliminary review of vibration sensitive structures, and make reparations if construction-related damage occurs. Basement/foundation videotaping prior to construction will be offered for structures within 150 feet of areas where vibration effects from construction activities could occur; where pavement and/or bridges will be removed; or where piling and/or steel sheeting is planned. These areas will be identified during the project's design phase and monitoring will occur before, during, and after the construction phase. The Special Provision for "Monitoring Vibrations" will be included in the project plan package.
b. Maintenance of Traffic	Disruption of traffic in the construction area will be minimized to the extent possible. A public awareness and information program will inform residents, businesses, trucking companies and other travelers about the I-94 construction schedules, ramp closings, alternative routes, and other matters affecting travel in and through the area. MDOT will implement Active Transportation and Demand Management (ATDM) strategies and will work with transit providers to determine if adding transit service will help alleviate congestion and improve safety. MDOT will coordinate with the city of Detroit, Emergency Responders (police, fire, and ambulance), and School District prior to and during construction.
c. Utilities	Coordination will continue between MDOT and utilities to plan properly to minimize service interruption to the public
d. Soil Erosion	During construction activities, the Phase II National Pollutant Discharge Elimination System (NPDES) permit (No. MI0057364) will be implemented. Construction activities will be conducted under MDOT's approved Soil Erosion and Sedimentation Control Plan and the State of Michigan's Permit-by-Rule. NPDES soil erosion and sedimentation control measures will be reviewed every seven days (including weekends) or within 24 hours of a precipitation event that results in a stormwater discharge from the site.
e. Lighting	Lighting for night work will follow MDOT's special provisions in effect at the time of construction. This will include the submittal of a "work area lighting plan." Lighting levels should not fall below the minimum requirements and should not spill over to adjoining property and should not interfere with traffic, workers and inspection personnel. The MDOT Project Engineer will review and approve a lighting plan and layout prior to the start of construction and the construction contractor will be responsible to implement the lighting plan. Permanent freeway lighting plans will be developed to minimize disturbance to adjacent properties.
f. Permits	Permits under Michigan Public Act 451, Part 31 (Water Quality and Floodplains), 55 (Air Pollution Control), 301 (Inland Lakes and Streams), and 303 (Wetlands) may be required from the EGLE for this project. Coverage under the NPDES, which is administered by the EGLE, is also required.
g. Construction Air Quality	The project will be constructed in accordance with MDOT's Standard Specifications for Construction provisions for dust control to minimize impacts to air quality during construction.
h. Construction Noise	Construction noise will be minimized by measures such as requiring that construction equipment have mufflers, that portable compressors meet federal noise standards for that equipment, and that portable equipment be placed away from or shielded from sensitive noise receptors to the greatest extent possible. Temporary noise impacts from construction activities will be minimized through compliance with applicable local, state, and federal noise control and ordinance requirements.

7. PUBLIC PARTICIPATION AND AGENCY COORDINATION

This chapter updates the public participation and agency coordination that has occurred since the 2004 FEIS For the Approved Selected Alternative with Modifications (ASAM) for the modernization of approximately 6.7 miles of interstate freeway (I-94) in the city of Detroit, Michigan between I-96 and Conner Avenue (Project).

7.1. Public Participation

MDOT's goal is to connect with representation from a broad segment of the community, so that the Project reflects the needs and perspectives of stakeholders who will use the proposed modernized streets and highways. MDOT outlined its public outreach objectives, goals, and strategies to increase public participation – including from low-income and minority residents and businesses – in its *I-94 Communications Work Plan*.

7.1.1. Public Involvement Goals

MDOT's Project goals for public involvement include:

- Engage directly with stakeholders in familiar locations
- Educate and gather input from stakeholders on the development of the Supplemental Environmental Impact Statement (SEIS)
- In the spirit of implementing Executive Order 12898 on environmental justice, identify and address any disproportionately high and adverse human health or environmental effects of the Project on minority and low-income populations
- Establish a Local Advisory Committee (LAC) and Governmental Advisory Committee (GAC) consisting of community members who are encouraged to become project ambassadors, inform the planning and design process, and provide feedback regarding potential effects on community resources
- Work with the LAC and GAC members to identify community outreach opportunities to educate and obtain input from stakeholders
- Create connections between Project-area residents and businesses and the Project team
- Educate and raise awareness of the Project by maintaining a Project website and social media resources



What are 'ASA' and 'ASAM'?

The “Approved Selected Alternative” or **ASA** is the selected alternative described in the Project's 2005 ROD, which affirmed the 2004 FEIS recommended alternative.

The “Approved Selected Alternative with Modifications” or **ASAM** is a proposed modification to the ASA. MDOT has not yet approved or selected the ASAM, but it is the preferred alternative evaluated in this DSEIS.

After a formal public and agency review period and public hearing on the SDEIS, MDOT and FHWA will identify a selected alternative in the Combined FSEIS and ROD.

7.1.2. Tools and Resources

MDOT used various tools and resources to increase public participation. This included Project newsletters and e-updates sent to stakeholders within a ¼ mile of the Project limits. The Project’s stakeholder mailing list included people who attended an I-94 public meeting or expressed interest in the Project. The Project website also offered the opportunity for the public to submit comments online and sign up for the Project mailing list. At public meetings, MDOT shared handouts and presentations including comment cards, signage, Title VI surveys, workforce development fact sheets and videos. These materials contained key messages and talking points about the Project. Information about public meetings is also posted to the Project website. Residential roundtable meetings are customized to focus on reaching those who may be directly or indirectly affected by the Project. See **Section 7.1.5** for additional detail about public meetings.

7.1.3. Local and Government Advisory Committees

Shortly after the Notice of Intent to prepare this SEIS was published, MDOT formed two separate advisory committees including a Local Advisory Committee (LAC) (see **Table 7-1**) and a Government Advisory Committee (GAC) (see

Midtown Representatives
Cathedral Church of St. Paul, Dean
Detroit Institute of Arts, Museum Vice President
Detroit Medical Center Senior Vice President
Henry Ford Hospital Executive Vice President and CMO
Henry Ford Health System Senior Vice President – Strategic Business Development
Midtown Detroit, Inc. President
Midtown Detroit, Inc. Real Estate Manager
TechTown Operations Manager
University Prep Academy (High School) Principal
Wayne State University Vice President, Economic Development
Whole Foods Market Store Manager
Woodbridge Community Youth Center Executive Director
C.H. Wright Museum of African American History President & CEO
Detroit Regional Chamber of Commerce COO
Detroit Visitors and Convention Bureau President & CEO
Downtown Detroit Partnership Chief Public Spaces Officer

Table 7-2) to gather and share information with stakeholders and agencies. The committees included representatives of key stakeholder groups and individuals recommended to MDOT by Detroit city staff and stakeholder representatives. Representatives on the committees relay information to their respective constituencies and encourage citizens and stakeholders to participate in the public meetings and comment on the Project. This early consultation and collaboration with stakeholders helped to identify issues and impacts to reach better environmental and mutually beneficial outcomes.

Table 7-1: Local Advisory Committee Members

East Side Representatives
Alkebu-lan Village CEO
City of Detroit – Dept. of Neighborhoods District 3
City of Detroit – Dept. of Neighborhoods District 4
City of Detroit – Dept. of Neighborhoods District 5
City of Detroit – Dept. of Neighborhoods District 6
Detroit City Council – District 3 Community Liaison
Detroit City Council – District 4 Business & Community Liaison
Detroit City Council – District 5 Community Liaison
Detroit City Council – District 6 Community Liaison
Detroit City Council – at-Large Community Liaison
Matrix Human Services Executive Director
Wayne County Community College Provost Entrepreneurial
Operation Get Down
Detroit Catholic Pastoral Alliance Executive Director
Community Foundation of Southeast Michigan Director of Greenway Initiatives
Arise Detroit Executive Director
Empowerment Zone Coalition Executive Director
Gratiot Avenue Business Association
Ninth Precinct Community Relations Council President
Woodbridge Community
Fifth Precinct Community Relations Council President
Morningside Neighborhood
Detroit Greenways Coalition Executive Director
Eastern Market Corporation Director of Projects
Community Development Advocates of Detroit Executive Director
Midtown Representatives
Cathedral Church of St. Paul, Dean
Detroit Institute of Arts, Museum Vice President
Detroit Medical Center Senior Vice President
Henry Ford Hospital Executive Vice President and CMO
Henry Ford Health System Senior Vice President – Strategic Business Development
Midtown Detroit, Inc. President
Midtown Detroit, Inc. Real Estate Manager
TechTown Operations Manager

East Side Representatives
University Prep Academy (High School) Principal
Wayne State University Vice President, Economic Development
Whole Foods Market Store Manager
Woodbridge Community Youth Center Executive Director
C.H. Wright Museum of African American History President & CEO
Detroit Regional Chamber of Commerce COO
Detroit Visitors and Convention Bureau President & CEO
Downtown Detroit Partnership Chief Public Spaces Officer

Table 7-2: Government Advisory Committee Members

Agencies
Suburban Mobility Authority for Regional Transportation (SMART) Deputy General Manager
Buildings, Safety Engineering, and Environmental Department – Environmental Affairs – Environmental Specialist
Detroit Planning and Development Department Central Region Design Director
Regional Transit Authority CEO
Representative John Conyers, Jr. Chief of Staff/District Director
Senator Gary C. Peters Regional Director
Southeast Michigan Council of Governments (SEMCOG) Multimodal Director
Detroit Economic Growth Corporation Senior Real Estate Manager
Michigan State Housing Development Authority Chief Housing Investment Officer
Department of Public Services, County of Wayne, Director
Michigan Economic Development Corporation – Community Development
Senator Debbie Stabenow Office Regional Manager
Detroit Fire Department, Fire Operations
Detroit Homeland Security & Emergency Management Director
Michigan’s 14th Congressional District (Rep. Brenda Lawrence), District Director

7.1.4. Stakeholders

In addition to the LAC/GAC, MDOT asked other groups, such as the Baptist Pastors Council, to share information with their congregations and contacts. These third-party communicators were a key part of sharing information about the Project and opportunities to provide input into planning and design.

To address specific Project design issues, MDOT met with individual stakeholder groups. MDOT held more than 110 meetings with stakeholders including groups with interests in economic development, community/neighborhoods, property owners, environmental protection, utilities, transit, business and employment, manufacturing, schools, city departments, emergency services, hospitals, legislators and council persons, and community organizations including

places of worship. MDOT also held roundtables, open houses and gave presentations to the public and persons living near I-94, M-10 and I-75. A list of stakeholder meetings is included in **Appendix A**.

MDOT also continues to maintain close coordination with City Council representatives to share Project information, which can be further shared with constituencies. MDOT maintains coordination with the following Council members:

- City Council District 3: Councilman Scott Benson and staff
- City Council District 4: Andre Spivey and staff
- City Council District 5: Mary Sheffield and staff
- City Council District 6: Raquel Castaneda-Lopez staff
- City Council President Brenda Jones

7.1.5. Public Meetings

MDOT held public meetings at various locations in the Project limits to encourage attendance. MDOT also organized resident roundtables in all City Council Districts in the Project limits. These community-based sessions were tailored to residents living in and around the Project limits. The roundtable sessions offered residents an opportunity to learn about the Project and provide input directly to the Project team members.

See **Section 7.3** for more information on the public hearing that will be held on the Draft Supplemental Environmental Impact Statement (DSEIS).

7.2. Agency Coordination

Early in the environmental review process, MDOT and FHWA, as the lead agencies, developed and adopted an agency coordination plan as required by Section 139(g) of Title 23, U.S. Code. The plan guided the agency coordination process during preparation of the SEIS. MDOT and FHWA updated the plan as needed to record correspondence and decisions.

FHWA published an NOI to prepare this SEIS on July 7, 2017, in the *Federal Register*. One response was received from the EPA, which helped guide the content of the SEIS. MDOT also requested formal input from federal, state, and local agencies soliciting interest to be considered cooperating or participating agencies under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59. The EPA provided input into the Project purpose and need statement and administrative review of the DSEIS.

Previous agency coordination efforts are reported in the 2004 FEIS. Current agency coordination is summarized in **Table 7-3**, and correspondence is presented in **Appendix D**. Agency meetings are listed in **Appendix A**.

Representatives from the city of Detroit Parks and Recreation Department and staff responsible for the Iron Belle Trail at the Michigan Department of Natural Resources participated in the planning and design of the crossing of the Iron Belle Trail through the Conner Avenue interchange and Parkway.

The city of Detroit Planning Department participated in numerous public meetings. They provided input and assistance during the design and planning of various aspects of the Project, primarily as it related to the transition between local streets and the MDOT right-of-way. Other city departments that MDOT met with include the Detroit Fire Department, Detroit Department of Transportation, Detroit Planning Department, and the Detroit Building Authority. MDOT also met with the SEMCOG representatives.

Table 7-3: Agency Coordination

Agency Name	Purpose of Coordination
Federal Agencies	
U.S. Environmental Protection Agency	- Cooperating agency - Participation in interagency air quality meeting - Will review and comment on DSEIS and will comment on the adequacy of the SEIS and acceptability of the environmental impacts (see Appendix D).
U.S. Fish & Wildlife Service	- Consultation on threatened and endangered species - Will receive DSEIS during review/comment period (see Appendix D).
Advisory Council on Historic Preservation	May comment on Section 106 consultation outcomes (see Appendix D).
State Agencies	
Michigan State Historic Preservation Office	Consultation on historic and archaeological resources including review and analysis of impacts and preparation and execution of a Memorandum of Agreement on mitigation for adverse effects on historic properties.
Local Agencies	
Southeast Michigan Council of Governments Region 1	Coordination on regional planning elements; air quality conformity; consistency with the Water Quality Management Plan and 2040 RTP for Southeast Michigan; traffic growth rate; traffic forecasting; diesel truck percentages; and traffic modeling.
City of Detroit Parks and Recreation Department	Consulted on city parks and the Iron Belle Trail
City of Detroit Planning Department	Coordination on Project roadway design elements, multimodal transportation, I-94 Rehabilitation Project Corridor Design Guidelines, the city participated in numerous stakeholder meetings and other public outreach events.

Table 7-4: Agency Coordination Meetings

Meeting Date	Agency	Meeting Purpose
1/29/2017	Detroit Parks and Recreation	Update the City of Detroit Parks & Recreation Department on the Project, review Park resources in the Project limits, and obtain feedback on potential impacts
1/4/2018	DNR and city of Detroit	Present alternatives for Iron Belle Trail crossing and solicit comments.
8/28/2018	DNR Iron Belle Trail	Update on Iron Belle Trail Concepts
2/23/2018	Detroit Fire Department	Obtain feedback on the Project and proposed modifications
4/23/2015	Detroit Department of Transportation	Project coordination meeting
10/23/2015	City of Detroit	Advance Bridge Coordination Meeting to discuss plans for Chene Ave. and Second Ave., and determine process for leasing/purchasing land from the city of Detroit
3/6/2015	SEMCOG	MDOT and SEMCOG traffic growth rate coordination meeting
5/1/2015	SEMCOG	MDOT and SEMCOG traffic growth rate coordination
5/10/2018	SEMCOG	Discuss proposed design modifications for incorporation into the RTP, confirm local system forecasting methodology based on the proposed design modifications, and confirm diesel truck projections



Meeting Date	Agency	Meeting Purpose
12/19/2018	SEMOG	I-94/I-375 traffic modeling for construction Maintenance of Traffic

7.3. Response to Comments

MDOT and FHWA will distribute the DSEIS for a 45-day public review period during which the public can submit formal comments. MDOT and FHWA will also host a public hearing during the review period to accept written and verbal comments. MDOT will accept written comments in letters and emails, and on comment cards submitted at the public hearing or any time during the review period. MDOT will also accept verbal comments at the public hearing. The Combined FSEIS and ROD will include an overview of public and agency comments on the DSEIS as well as responses.

8. DISTRIBUTION OF THE DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

The following is a list of agencies, organizations, and persons to whom this document has been sent:

8.1. Federal Agencies

- Advisory Council on Historic Preservation (ACHP)
- Federal Emergency Management Agency, Region 5 and Washington, D.C.
- U.S. Army Corps of Engineers, Detroit District Office
- U.S. Coast Guard, Cleveland Office
- U.S. Department of Agriculture, Natural Resource Conservation Service, Animal and Plant Health Inspection Service
- U.S. Department of Commerce
- U.S. Department of Energy
- U.S. Department of Health and Human Services, Center for Disease Control and Prevention, National Center for Environmental Health
- U.S. Department of Homeland Security, Detroit District
- U.S. Department of Housing and Urban Development, Detroit Area Director
- U.S. Department of the Interior, U.S. Fish & Wildlife Service, National Park Service
- U.S. Department of Transportation, Federal Transit Administration
- U.S. Environmental Protection Agency Region 5
- U.S. Federal Aviation Administration, Detroit Airports District Office
- U.S. Federal Motor Carrier Safety Administration, Michigan Division
- U.S. Federal Railroad Administration
- U.S. General Services Administration, Region 5
- U.S. Department of Defense

8.2. State/Regional Agencies

- Michigan Department of Agriculture and Rural Development
- Michigan Department of Health and Human Services
- Michigan Department of Natural Resources
- Michigan Department of Natural Resources Trail Systems and Services
- Michigan Department of Transportation Metro Region, Tribal Affairs, Aeronautics
- Michigan Housing Development Authority
- Michigan State Historic Preservation Office
- Southeast Michigan Council of Governments (SEMCOG), Region 1
- Water Resources Division Michigan Department of Environment, Great Lakes, and Energy (EGLE) (formerly MDEQ)
- Michigan Department of Civil Rights Division on Deaf, Deaf/Blind and Hard of Hearing

8.3. Local Agencies

- City of Detroit Department of Planning and Development
- City of Detroit Parks and Recreation Department
- City of Detroit Building, Safety Engineering and Environmental Department
- City of Detroit Civil Rights, Inclusion & Opportunity Department
- City of Detroit Department of Transportation
- City of Detroit Health Department
- City of Detroit Environmental Health and Safety
- City of Detroit Employment Solutions Corporation
- City of Detroit Historic District Commission
- City of Detroit Homeland Security and Emergency Management
- City of Detroit Neighborhoods Department
- City of Detroit Office of Sustainability
- City of Detroit Police Department
- City of Detroit Public Safety Headquarters Firefighting Division
- City of Detroit Public Safety Headquarters EMS Division
- City of Detroit Department of Public Works
- City of Hamtramck City Manager
- City of Hamtramck Community and Economic Development Department

- City of Hamtramck Fire Department
- City of Hamtramck Police Department
- City of Hamtramck Mayor
- Coleman A. Young International Airport
- Detroit Power and Light
- Detroit Public Schools
- Detroit Water and Sewerage Department
- Greater Detroit Resource Recovery Authority
- Great Lakes Water Authority
- Southeast Michigan Council of Governments
- Regional Transit Authority of Southeast Michigan
- Suburban Mobility Authority for Regional Transportation (SMART)
- Wayne County Public Services

8.4. Federal, State and Local Legislators

- City Council President Brenda Jones
- Detroit City Councilman Scott Benson, District 3
- Detroit City Councilman Andre L. Spivey, District 4
- Detroit City Councilwoman Mary Sheffield, District 5
- Detroit City Councilwoman Raquel Castañeda-Lopez, District 6
- State Representative Joe Tate, District 2
- State Representative Isaac Robinson, District 4
- State Representative Cynthia A. Johnson, District 5
- State Representative Tyrone Carter, District 6
- State Senator Stephanie Chang, District 1
- State Senator Adam Hollier, District 2
- State Senator Marshall Bullock, District 4
- State Senator Debbie Stabenow, District 13
- Congresswoman Rashida Tlaib, District 13
- Congresswoman Brenda Lawrence, District 14

9. LIST OF PREPARERS

This section includes the Project team members with major involvement in the preparation of the SEIS and related studies conducted for the Project.

Organization/Name	Primary Responsibility	Qualifications
MDOT		
Terry Stepanski	I-94 Modernization Senior Project Manager involved in all phases of the Project	B.S. in Civil Engineering; 33 years of transportation engineering experience that includes project management, project development, preliminary engineering, final design, environmental clearance and public engagement
Margaret Barondess	NEPA Lead	B. A. and M.A. in Anthropology; Experience since 1991 in Cultural Resources Management, Major Transportation Project Development, Preparation of NEPA Documents, and Manager of the Environmental Services Section
Lori Noblet	NEPA Review Manager	B.S. in Political Science, M.U.P in Urban Planning; experience since 1987 in preparing environmental assessments and impact statements
Ann Lawrie	Participation in the Section 4(f) recreational properties coordination and outreach	B.A. in Political Science and Environmental Studies; experience since 1999 in the MDOT Environmental Services Section
Lloyd Baldwin	History, Section 106 compliance, Section 4(f) compliance and review of analysis documentation.	B.A. in History and English Language & Literature, M.S. in Historic Preservation; experience since 1994 in research/writing and “hands-on” restoration; with MDOT since 2001 in Categorical Exclusions and Major Actions
Richard C. Bayus	Review of land use and environmental justice.	B.S. in Resource Planning; 13 years’ experience in transportation planning for MDOT; 20 years’ experience in land use planning
James A. Robertson	Coordination and analysis of archaeological and Traditional Cultural Properties investigations, and consultation with Michigan Indian Tribes.	B.A. in History, M.A. and Ph.D. in Anthropology; Experience since 1987 in archaeology, cultural resource management, and historic preservation
Thomas Hanf	Review of air quality, traffic noise, and construction noise analyses and documentation.	M.A. in Geography; 16 years’ experience as the MDOT Project-Level Air Quality and Highway Noise Abatement Specialist; member of the American Association of State Highway and Transportation Officials (AASHTO) Air Quality work group and Noise and Vibration work group
Tom Zurburg	SEIS document review of traffic noise analysis	B.A.S. in Construction Technology; experience with MDOT since 2003 in highway traffic noise

Organization/Name	Primary Responsibility	Qualifications
David Schuen	Coordination of the endangered species environmental clearance with the state and federal regulatory agencies.	M.S. in Plant Systematics and Plant Ecology; experience since 1994 in endangered species and coastal zone protection at MDOT
Barbara Barton	Review for compliance with post-construction NPDES permit requirements	M.S. in Organismal Ecology, B.S. in Fisheries and Wildlife Management; experience since 1987 in wetland permitting, wetland mitigation, endangered species research, water quality, and wild rice restoration.
James Woodruff	Review for compliance with contamination requirements	B.S. Natural Resources; experience since 1985 in soil and groundwater contamination investigation and remediation and State of Michigan Natural Resources and Environmental Protection statute compliance monitoring
Bradley Peterson, L.L.A.	Context Sensitive Solutions, Complete Streets, landscape and aesthetics design reviews and coordination	B.L.A. in Landscape Architecture, M.U.R.P. in Urban and Regional Planning; experience since 2003 with MDOT Statewide Planning and Roadside Development Units and 11 years private sector experience in landscape architecture and planning services
Doug Proper	Mitigation measures, Project Mitigation Summary Green Sheet	B.S. in Civil Engineering; experience since 1980 working with MDOT project environmental clearance and impact mitigation in design and construction
Anita Richardson	Certifies that hearings and public involvement meets NEPA standards.	M.A. in Applied Communications and B.A. in Mass Media Communications; 20 years in strategic engagement and media communications, 10 at MDOT
Tom Jay	Real estate impacts	B.A. in Business Administration; experience since 1991 in Real Estate at MDOT
Darlette Tolbert	Real estate impacts	M.S. Information Management & Communication; experience since 2000 in real estate acquisition and relocation at MDOT
Anu Sikka	Review of Interstate Access Change Request and traffic analyses documentation	MA in Spatial Planning, M. Tech in Urban Planning; four years of experience in Project Level Traffic Analysis at MDOT
Katie Beck	Review of traffic analyses documentation	B.A. in Economics; four years of experience in travel demand modeling at MDOT
Linda Travis	Review and coordination of Conceptual Stage Relocation Plan and real estate information	BA, Management and Organizational Development, Licensed Real Estate Salesperson and Limited Licensed Appraiser; 18 months experience with MDOT Real Estate Services Section
Consultant Staff		
John Baldauf, P.E. HNTB Corporation/ORC	Project management, engineering design, public involvement, agency coordination, Section 4(f) avoidance alternatives analyses, document QA/QC	B.S. Civil Engineering; experience since 2009 in preliminary engineering, planning, design, and environmental studies

Organization/Name	Primary Responsibility	Qualifications
Connie White, AICP HNTB Corporation/ORC	Environmental impact analysis; environmental impact statement preparation; agency coordination; consultant environmental review coordination	B.S. Natural Resource Management; experience since 1989 in NEPA/CEQA documentation and compliance
John Jaeckel, P.E. HNTB Corporation/ORC	Noise and air quality modeling and analysis	B.S. Applied Science and Engineering; experience since 1972 in air quality and noise studies for transportation environmental studies
Robert Fieldbinder, P.E.	Project management and document quality review	B.S. Civil Engineering; experience since 1984 in transportation infrastructure project delivery, scoping, preliminary engineering, right-of-way planning and design
Michael Zabel HNTB Corporation/ORC	Noise and air quality impacts, GIS, population data	B.A. Political Science; M.A. Urban Planning and Policy; experience since 2006 in transportation planning; experience since 2011 in air and noise environmental analysis
Jennifer Rybarczyk, GISP HNTB Corporation/ORC	GIS team leader, data collection for environmental analyses, exhibit preparation	B.S. Architectural Studies; M.S. Urban Planning; experience since 2000 in GIS to support community, infrastructure and environmental planning and design
Carolyn Seboe, AICP HNTB Corporation/ORC	Land use and socio-economic analyses	B.S. Geography, M.S. Urban Planning; experience since 2002 working on transportation and land use studies and preparation of indirect and cumulative effects analyses for environmental impact statements
Ruth Mazur, INCE HNTB Corporation/ORC	Noise and air quality impacts	B.A. Audio Arts & Acoustics; experience since 2010 in noise and vibration data measurement and analysis for transportation projects
Caron Kloser, AICP HNTB Corporation/ORC	Document quality review	B.S. Agronomy; M.S. Horticulture; experience since 1987 in transportation environmental studies and environmental impact statement preparation
Tom Weston, P.E. HNTB Corporation/ORC	Project management	B.S. Civil Engineering; experience since 1997 in transportation infrastructure project delivery, scoping, preliminary engineering, right-of-way planning and design
Matt Simon, P.E. HNTB Corporation/ORC	Project management	B.S. Civil Engineering; M.S. Transportation Engineering; experience since 1990 in delivery of complex transportation infrastructure projects
Nathan Ford HNTB Corporation/ORC	Public engagement, agency coordination	B.A. Business Administration; experience since 1992 in community relations, marketing and event management
Victor Judnic, P.E. HNTB Corporation/ORC	Bridge design and public involvement	B.S. Civil Engineering; M.S. Project Management; experience since 1988 in design and construction engineering
Joseph Blasi, P.E., PTOE HNTB Corporation/ORC	Traffic analysis, interstate access changes	B.S. Civil Engineering, M.S. Transportation Engineering; experience since 2005 in traffic analysis

9. List of Preparers

Organization/Name	Primary Responsibility	Qualifications
Jeff Feeney, P.E. PTOE HNTB Corporation/ORC	ITS operations, planning, and design	B.S. Civil Engineering; MBA; experience since 2006 in transportation planning, traffic operations, and ITS design
Mark Smith P.E. PTOE HNTB Corporation/ORC	Traffic operations, planning and design	B.S. Civil Engineering; M.S. Engineering Management; experience since 2007 in transportation design and planning and traffic operations
Eric Polvi, P.E. HNTB Corporation/ORC	Right-of-way	B.S. Civil Engineering; experience since 1995 preliminary highway engineering and final design
Trebecca McDonald HNTB Corporation/ORC	Right-of-way	B.S. Civil Engineering; experience since 2015 in property acquisition and related engineering design and real estate services
Rob Beuthling, P.E. HNTB Corporation/ORC	Traffic analysis	B.S. Civil Engineering; experience since 1999 in traffic operations analysis, microsimulation, and forecasting
Jacob Uhazie HNTB Corporation/ORC	Economic data collection	Master of Urban Planning; experience since 2018 in transportation environmental studies
Rowena Adamowski Somat Engineering, Inc.	Contamination survey, PACS report	B.S. Civil Engineering; experience since 1986 in environmental due diligence and remediation
Brandon M. Gabler Commonwealth Heritage Group	Archaeology surveys, analysis and reporting	B.A. Anthropology/Archaeology and Mathematics, M.A. and Ph.D. Anthropology; experience since 2000 in archaeology and cultural resource management
Elaine H. Robinson Commonwealth Heritage Group	Above ground historic survey, analysis and reporting.	B.F.A. Interior Architecture, M.S. Historic Preservation; experience since 1994 as an architectural historian and preservation planner
Ethan Epstein, Ph.D. Commonwealth Heritage Group	Archaeological and historic analysis.	Ph.D. & M.S. Anthropology (archaeology), B.B.A. Finance; experience in pre-contact and post-contact archaeology since 2004
Renee Prewitt, APR	Digital Media and Stakeholder Engagement	M.A. Communications & Leadership; experience since 2008 in public relations, digital media, stakeholder relations, graphic and web design
Delora Hall Tyler, APR	Public and stakeholder engagement	B.A. Communications; 19 years in transportation; DBE, ACDBE, WBE, WOSB and SBE Certified
Elnora Austell, APR	Public engagement, strategic communication planning	B.A. English; More than 30 years in communications and public engagement

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11. ACRONYMS, ABBREVIATIONS AND GLOSSARY OF TERMS

Table 11-1: Acronyms and Abbreviations

Acronym or Abbreviation	Expansion
I-94	Interstate Highway 94 (Edsel Ford Freeway)
I-75	Interstate Highway 75 (Chrysler Freeway)
I-96	Interstate Highway 96 (Jeffries Freeway)
M-3	Michigan State Highway 3 (Gratiot Avenue)
M-10	Michigan State Highway 10 (Aretha L. Franklin Memorial Freeway/Lodge Freeway)
M-53	Michigan State Highway 53 (Van Dyke Avenue)
AADT	annual average daily traffic
AASHTO	American Association of State Highway and Transportation Officials
ACS	American Community Survey
ADA	Americans with Disabilities Act
APA	Authorized Public Agency
APE	area of potential effect
ASA	Approved Selected Alternative
ASAM	Approved Selected Alternative with Modifications
ATDM	Active Transportation Demand Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Conrail	Consolidated Rail Corporation
CSRP	Conceptual Stage Relocation Plan
CSS	context sensitive solutions
DECC	Detroit Eastside Community Collaborative
DEIS	draft environmental impact statement
DDOT	Detroit Department of Transportation
DIFT	Detroit Intermodal Freight Terminal
DNR	Michigan Department of Natural Resources
DSEIS	draft supplemental environmental impact statement
DWSD	Detroit Water and Sewerage Department
EA	environmental assessment
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency

11. Acronyms, Abbreviations and Glossary of Terms

Acronym or Abbreviation	Expansion
FAST (Act)	Fixing America's Surface Transportation Act
FEIS	final environmental impact statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact under NEPA
FSEIS	Final Supplemental Environmental Impact Statement
GAC	I-94 Government Advisory Committee
GLWA	Great Lakes Water Authority
GM	General Motors
HHF	Hardest Hit Funds program
IACR	Interstate Access Change Request
ICE	Indirect and Cumulative Effects
ITS	intelligent transportation systems
LAC	I-94 Local Advisory Committee
LOS	Level of Service
LWCF Act	Land and Water Conservation Fund Act
MAP-21	Moving Ahead for Progress in the 21st Century Act (P.L. 112-141)
MBDP	Minority Bank Deposit Program
MEDC	Michigan Economic Development Corporation
MCRP	Michigan Community Revitalization Program
MDEQ	Michigan Department of Environmental Quality
MDOT	Michigan Department of Transportation
MOA	Memorandum of Agreement
MOVES	Motor Vehicle Emission Simulator
MSATs	mobile source air toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PASER	Pavement Surface Evaluation and Rating System
PSI	Preliminary Site Investigation
ROD	Record of Decision
RTA	Regional Transit Authority

11. Acronyms, Abbreviations and Glossary of Terms

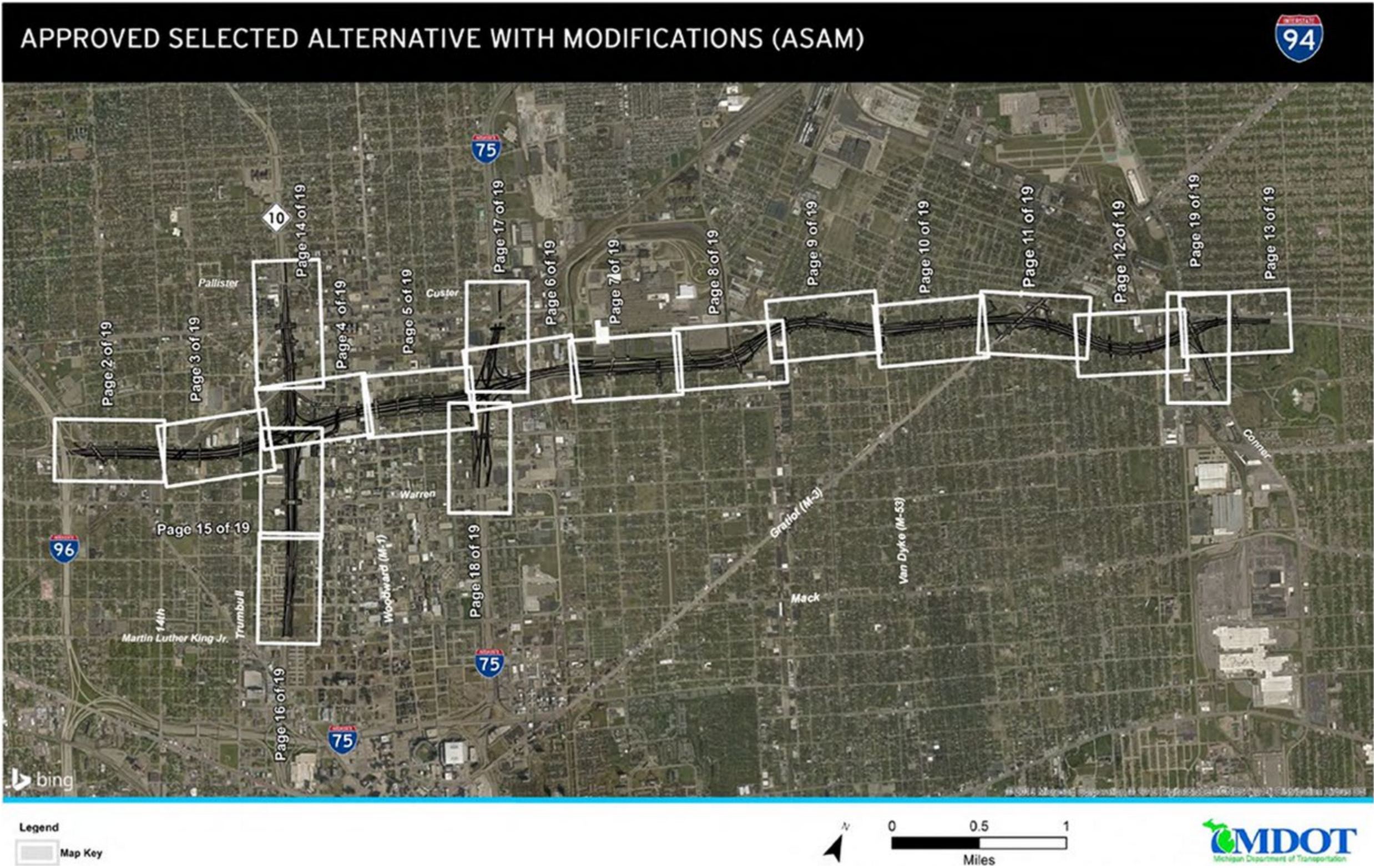
Acronym or Abbreviation	Expansion
RTP	Regional Transportation Plan
SBE	Small Business Enterprise
SEIS	Supplemental Environmental Impact Statement
SEMCOG	Southeast Michigan Council of Governments
SHPO	State Historic Preservation Officer
SLRP	State Long-Range Transportation Plan
SMART	Suburban Mobility Authority for Regional Transportation
STIP	State Transportation Improvement Program
SWMP	Storm Water Management Plan
TAMP	Transportation Asset Management Plan
TDM	Travel or traffic demand management, Travel or traffic demand measures
THPO	Tribal Historic Preservation Officer
TIP	Transportation Improvement Program
TMDL	total maximum daily load
TMP	transportation management plan
TSM	transportation system management
TSS	total suspended solids
USC	U.S. Code
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish & Wildlife Service
USSRS	United Sound Systems Recording Studios
VMT	vehicle miles traveled
VPD	vehicles per day

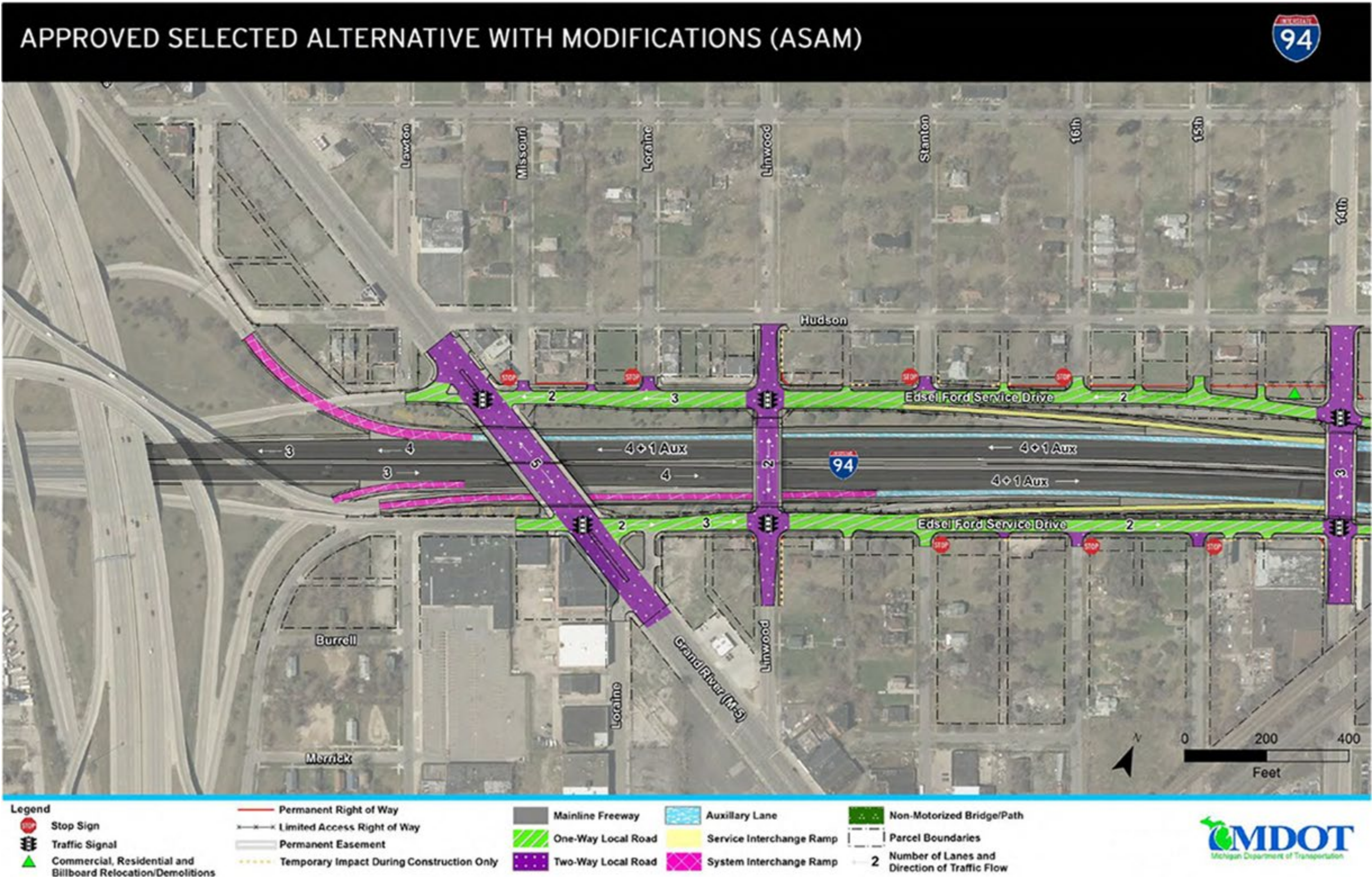
11. Acronyms, Abbreviations and Glossary of Terms**Table 11-2: Glossary**

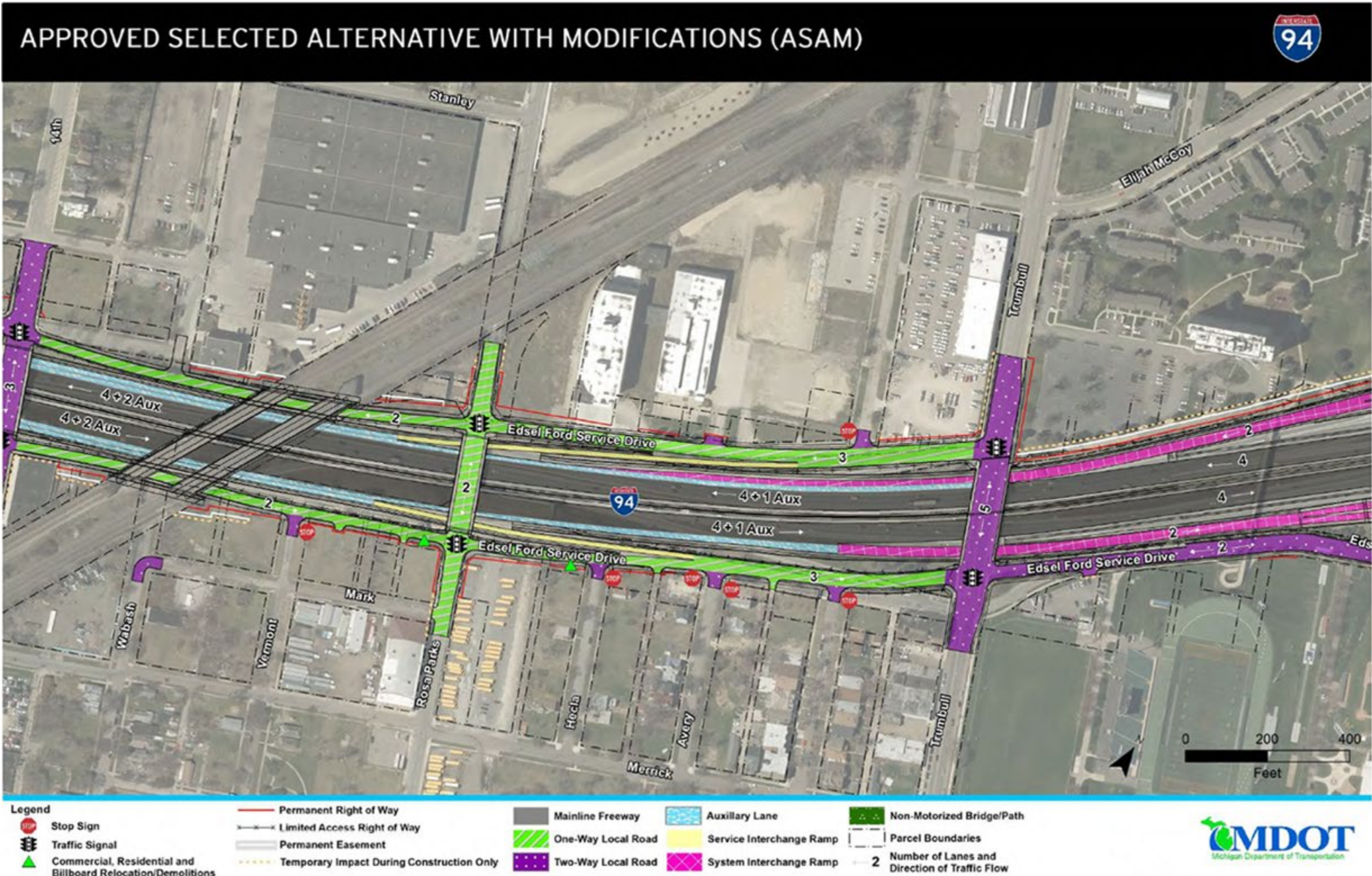
Term	Definition
Complete Streets	According to Michigan Public Act (PA) 135 of 2010, a Complete Street provides “appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods whether by car, truck, transit, assistive device, foot or bicycle.”
Context Sensitive/ Context Sensitive Design/ Context Sensitive Solutions	Context Sensitive Solutions (CSS) is a collaborative interdisciplinary approach to developing transportation projects. Under CSS, MDOT solicits dialogue with local governments, road commissions, local stakeholders, industry groups, land use advocates, and state agencies early in a project's planning phase. A cooperative spirit and an awareness of community interests help achieve the ultimate goal – projects that fit their surroundings while effectively serving transportation needs.
Decibel (dB)	The decibel (dB) is the unit of measurement for sound.
Level of Service (LOS) (see also Figure 1-3)	A method for identifying levels of traffic congestion.
National Register of Historic Places (NRHP)	The NRHP is the official list of the United States’ historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.
Section 4(f)	Regulations that FHWA and other DOT agencies cannot approve the use of land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, or public and private historical sites unless there is no feasible and prudent avoidance alternative to the use of land; and the action includes all possible planning to minimize harm to the property resulting from such use; or the Administration determines that the use of the property will have a <i>de minimis</i> impact.
Traditional Cultural Property	A Traditional Cultural Property is a property that is eligible for inclusion in the NRHP based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts or social institutions of a living community. TCP’s are rooted in a traditional community’s history and are important in maintaining the continuing cultural identity of the community.
Travel Demand Management (TDM)	Strategies and policies designed to reduce or redistribute traffic in time or place with the goal of reducing traffic congestion during rush hours (peak periods).

12. PROPOSED ALTERNATIVE – CONCEPTUAL DESIGN PLAN

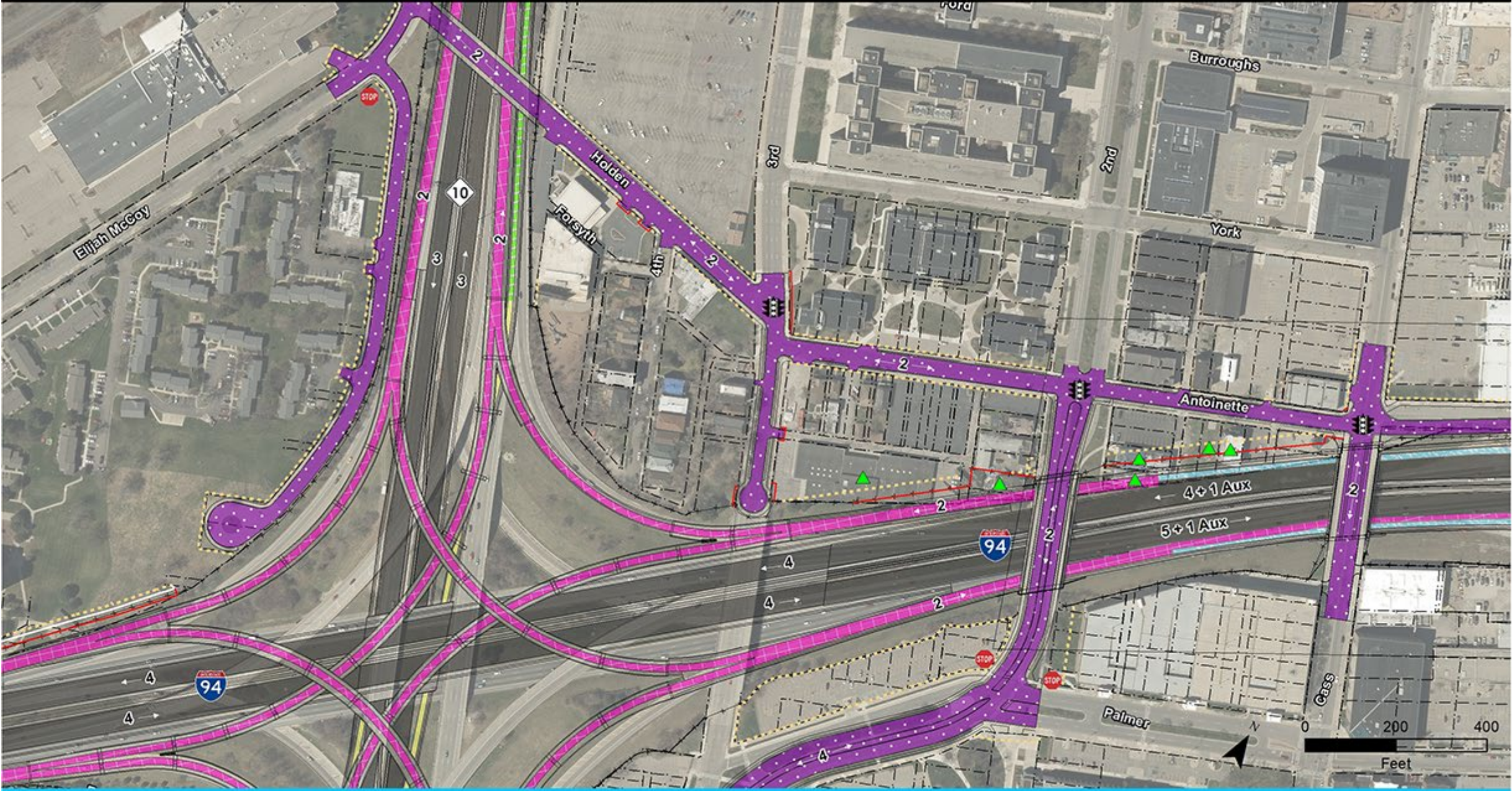
This chapter includes 19 exhibits showing the locations and drawings of the conceptual design plan for the ASAM's improvements to the I-94 mainline, service drives, and interchanges.

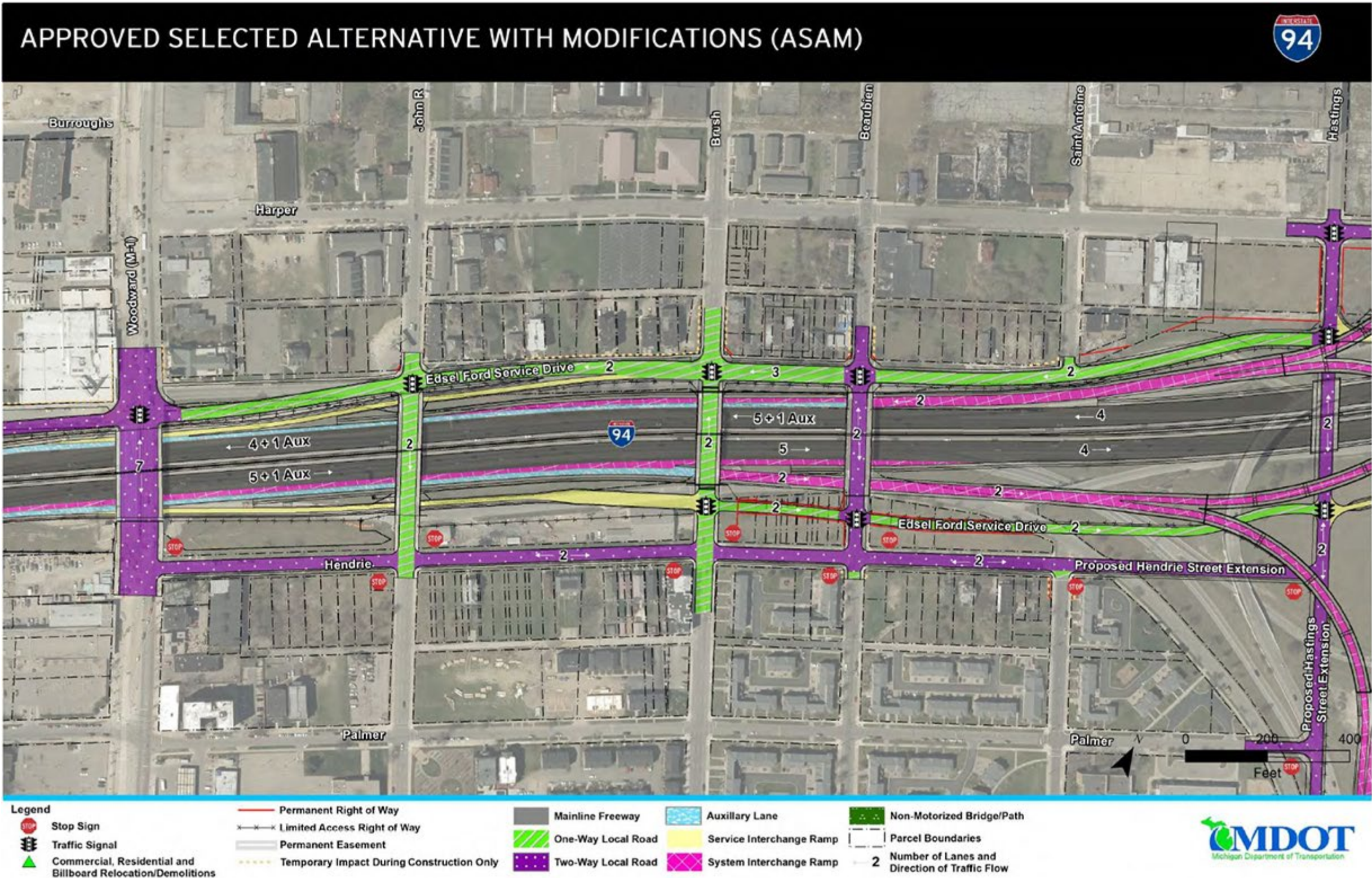


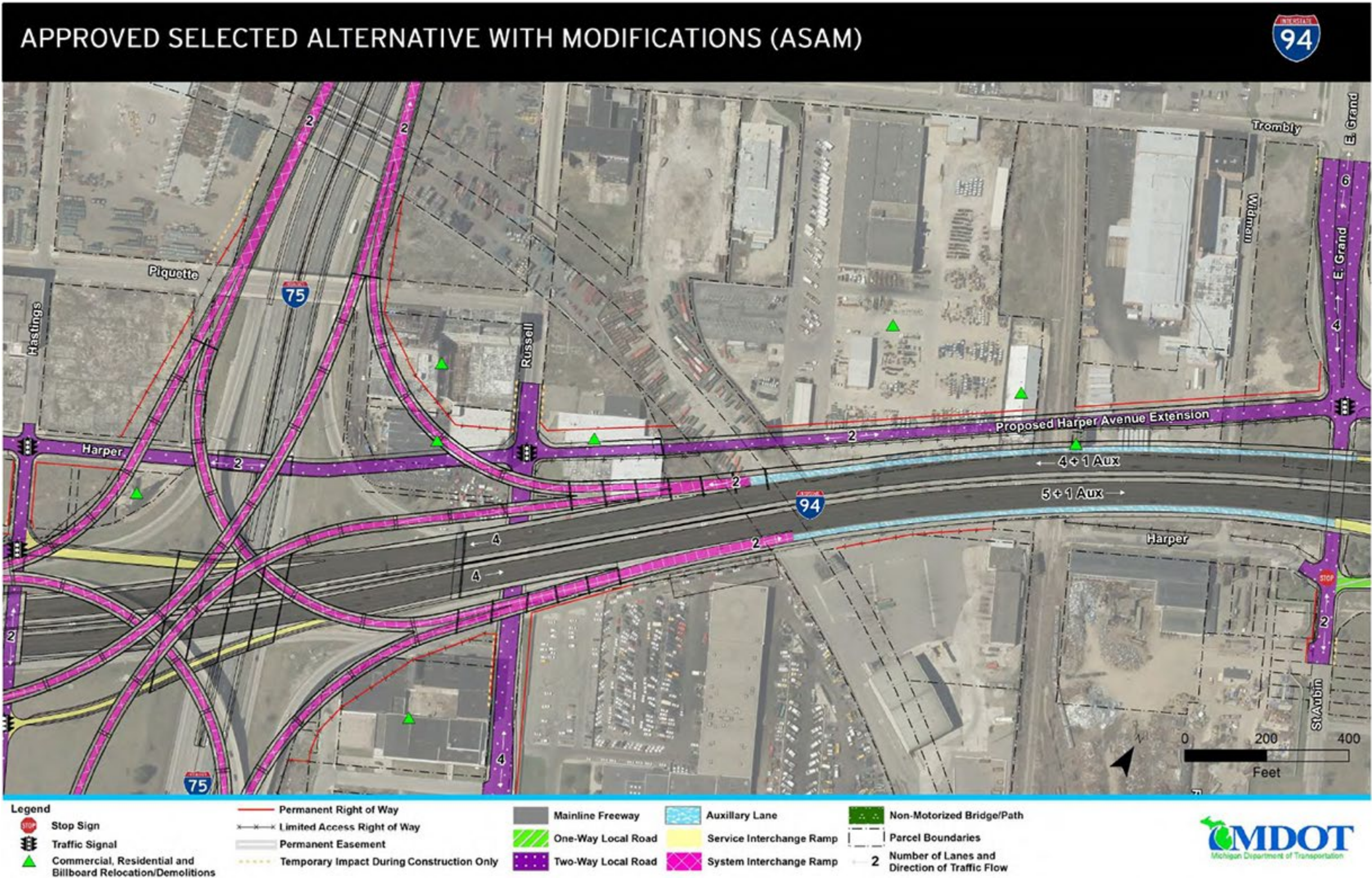


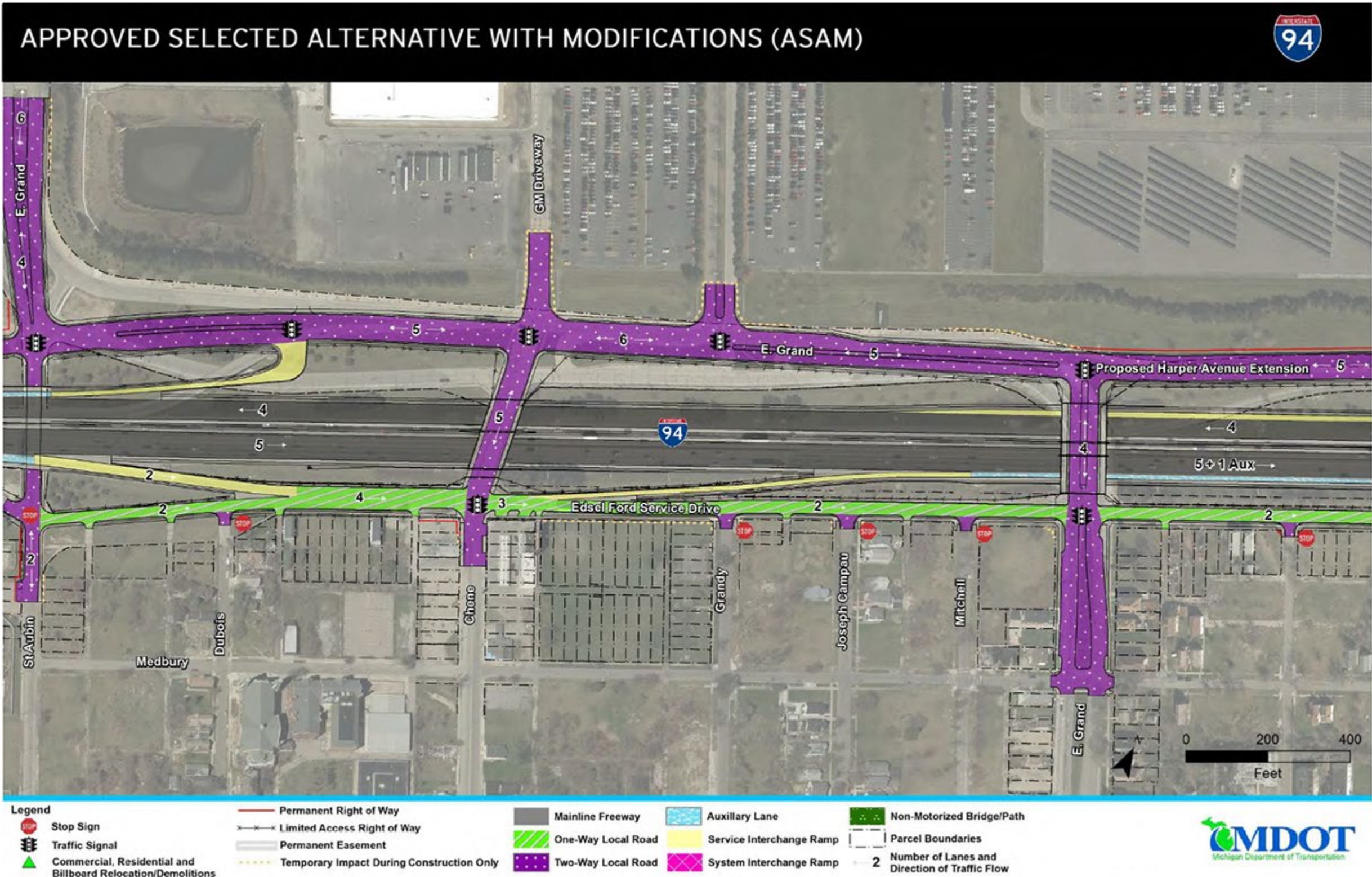


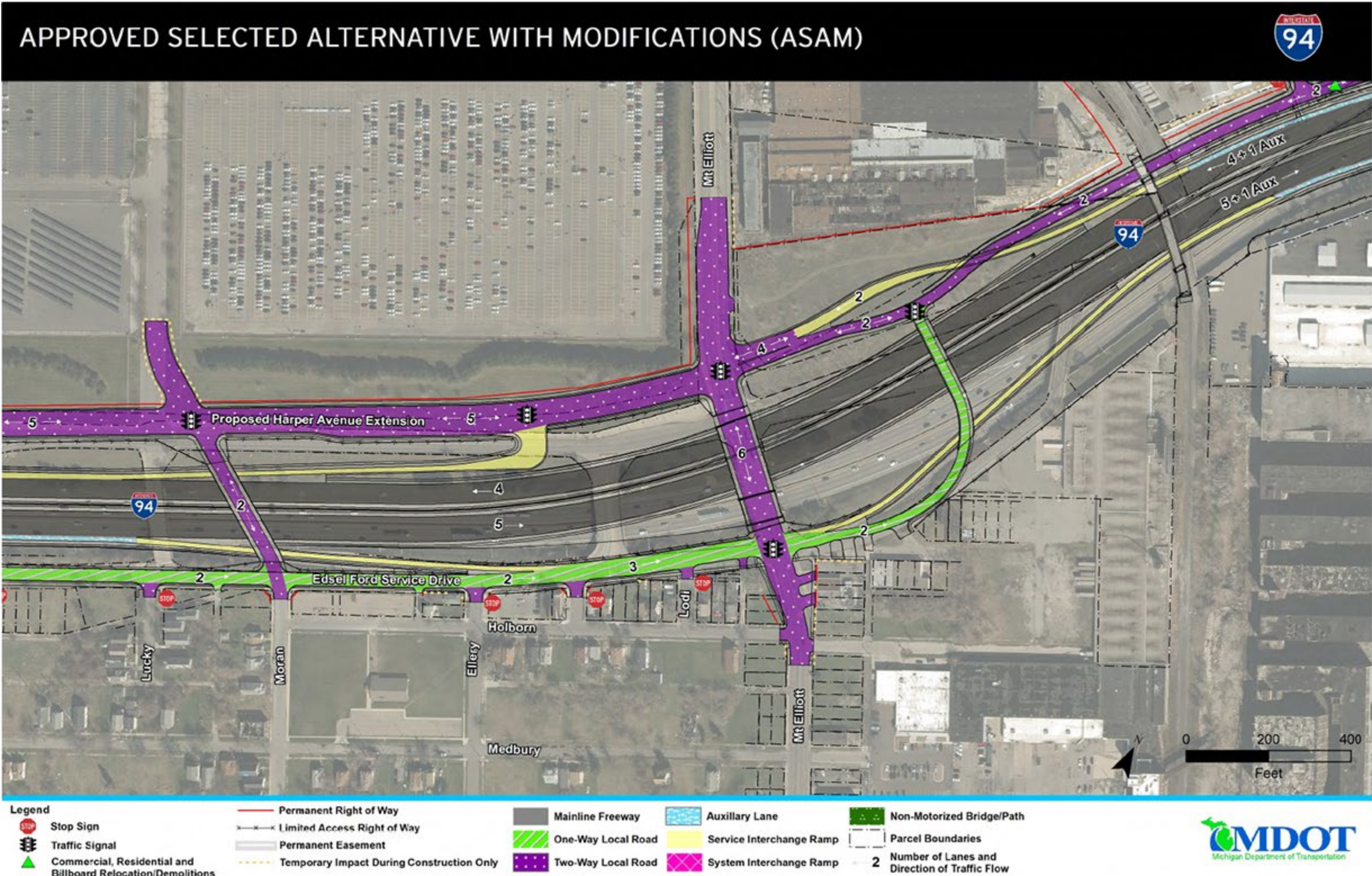
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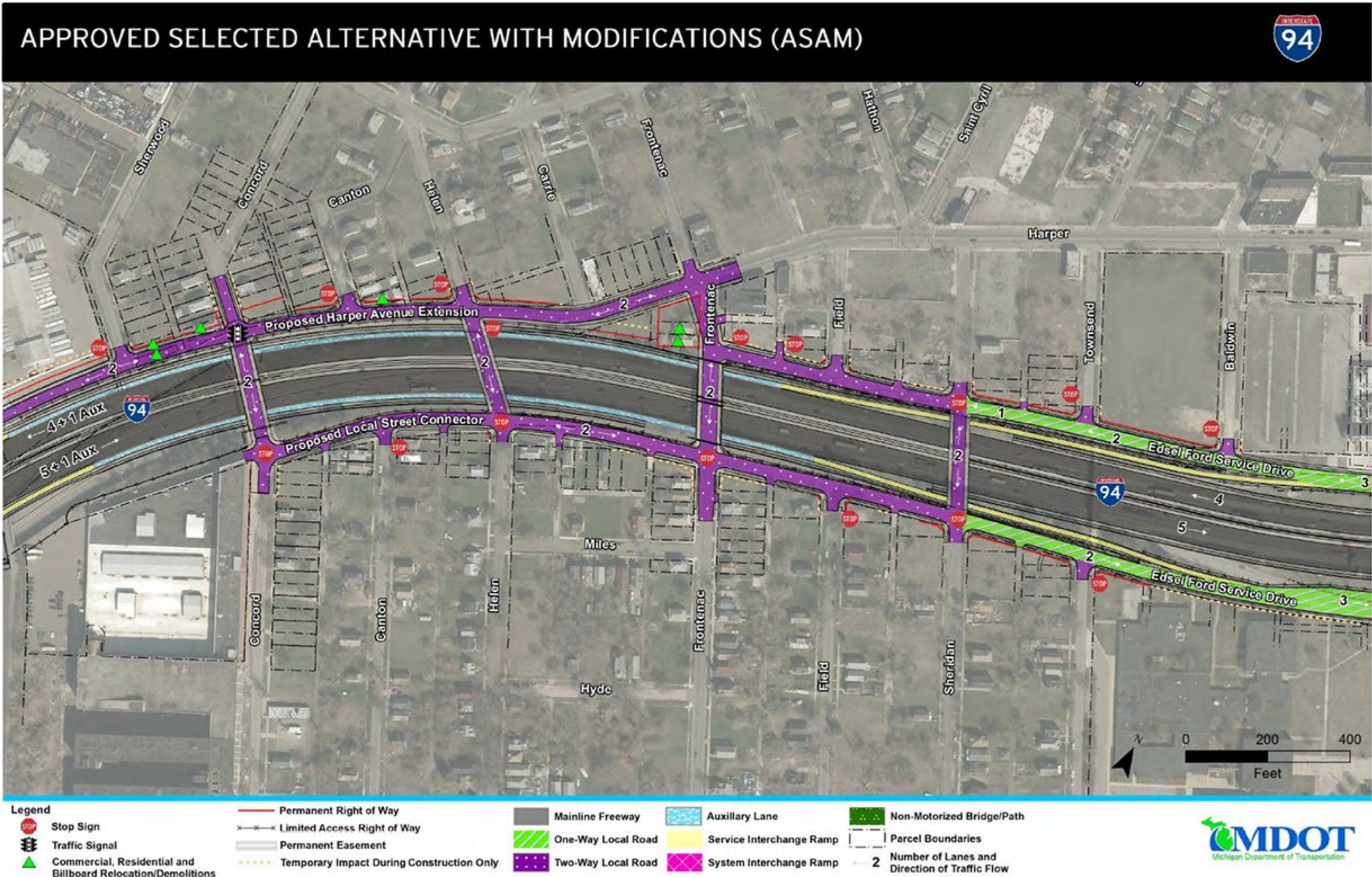


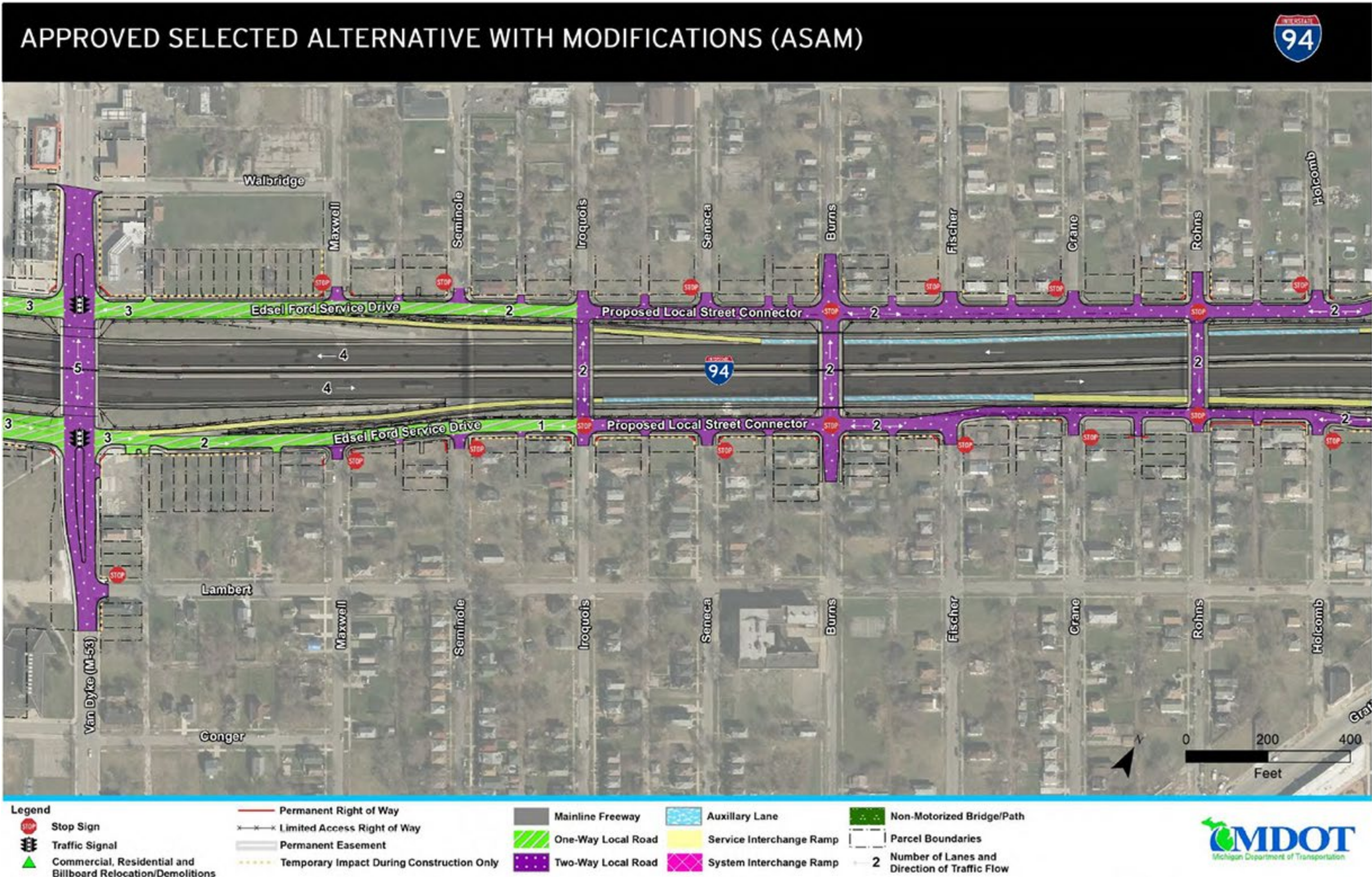


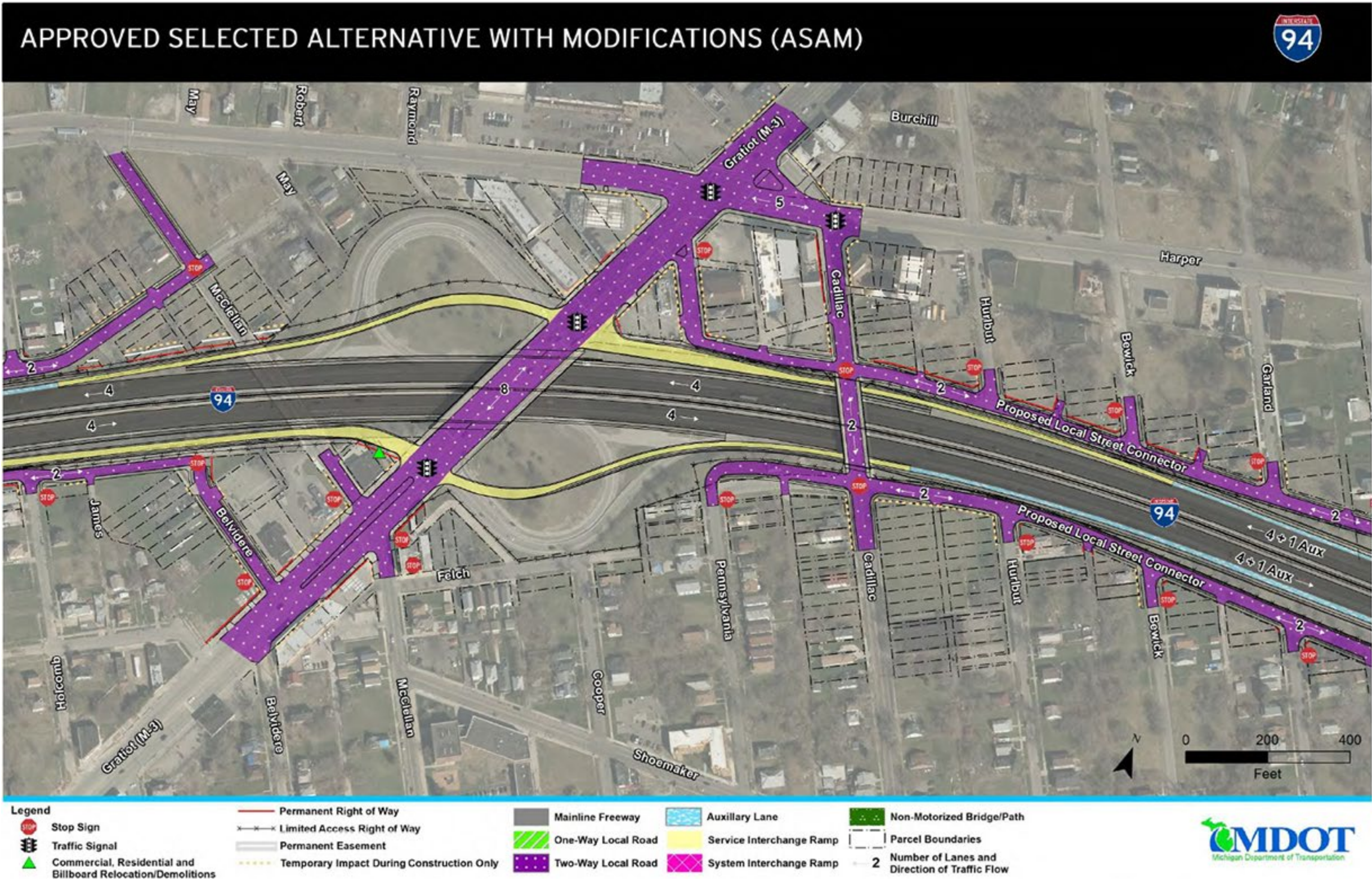


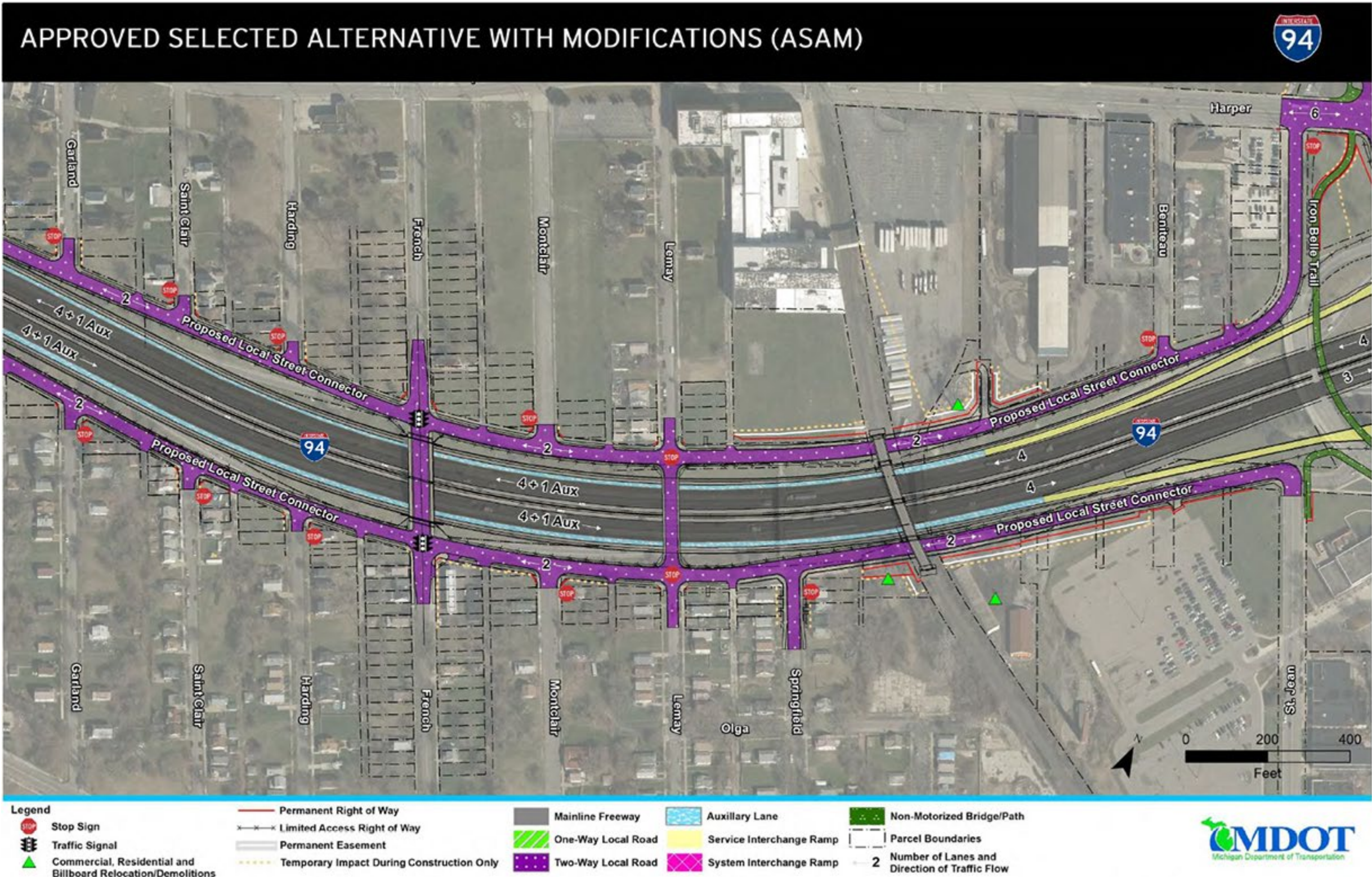


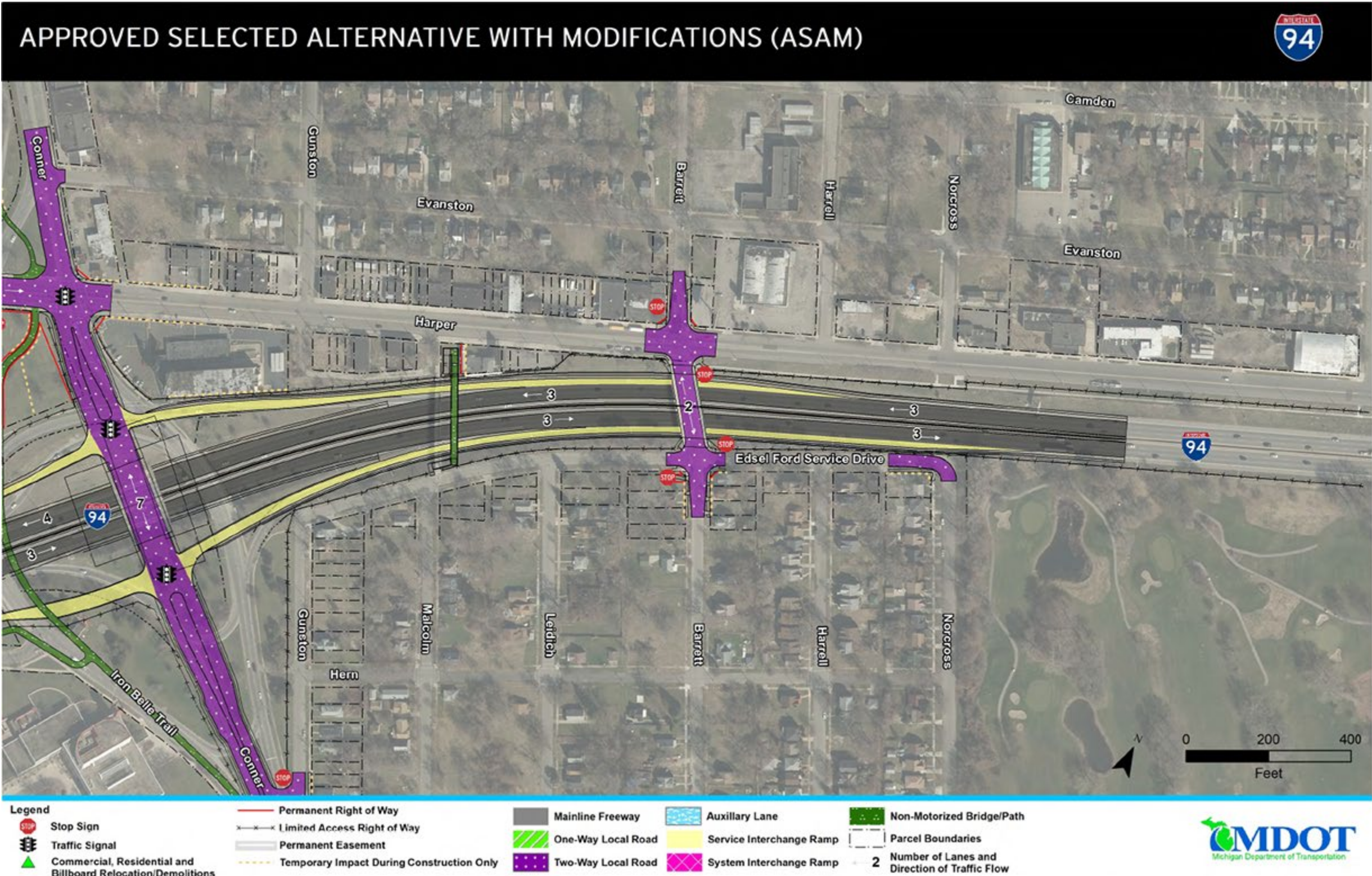


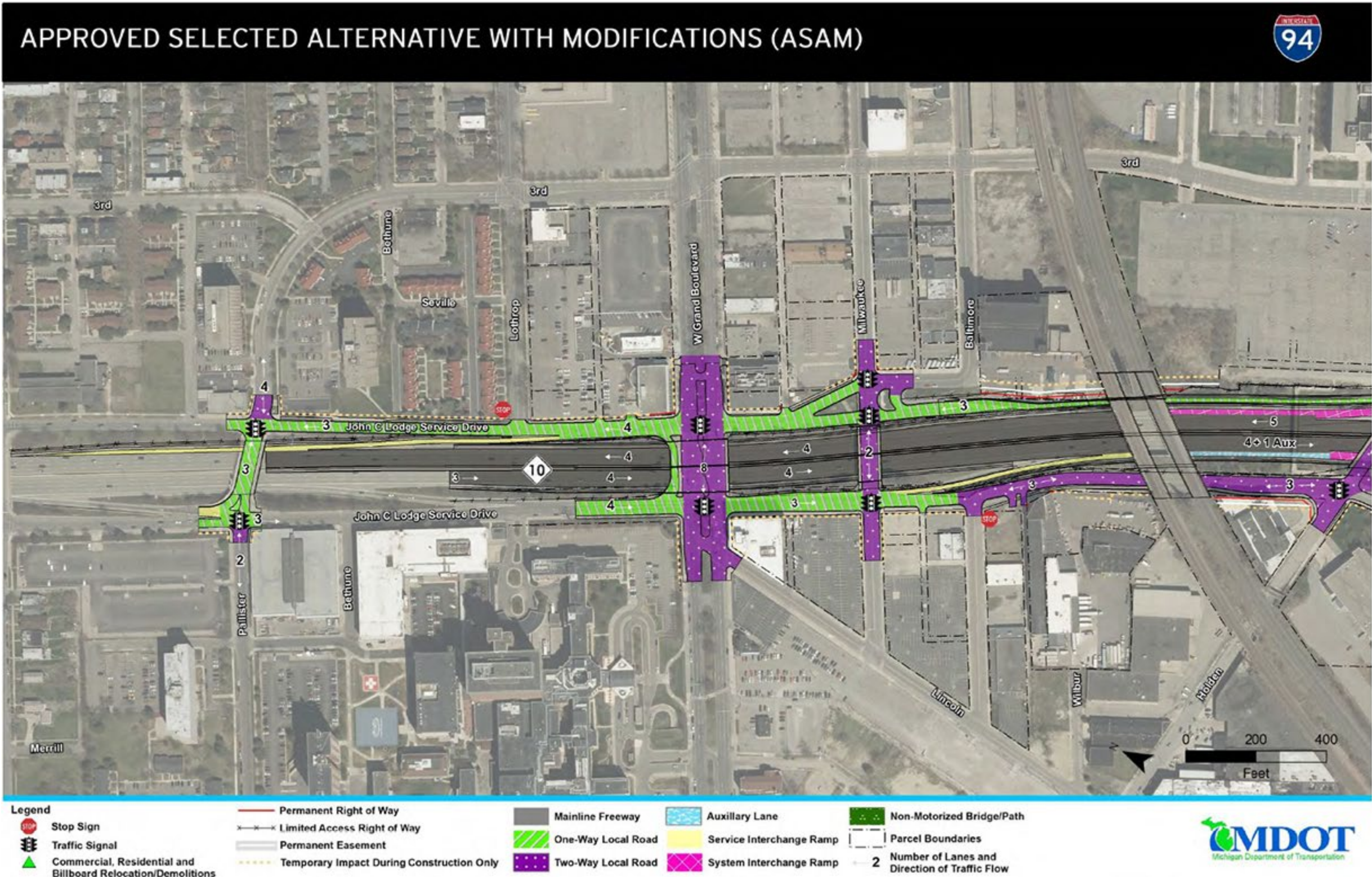


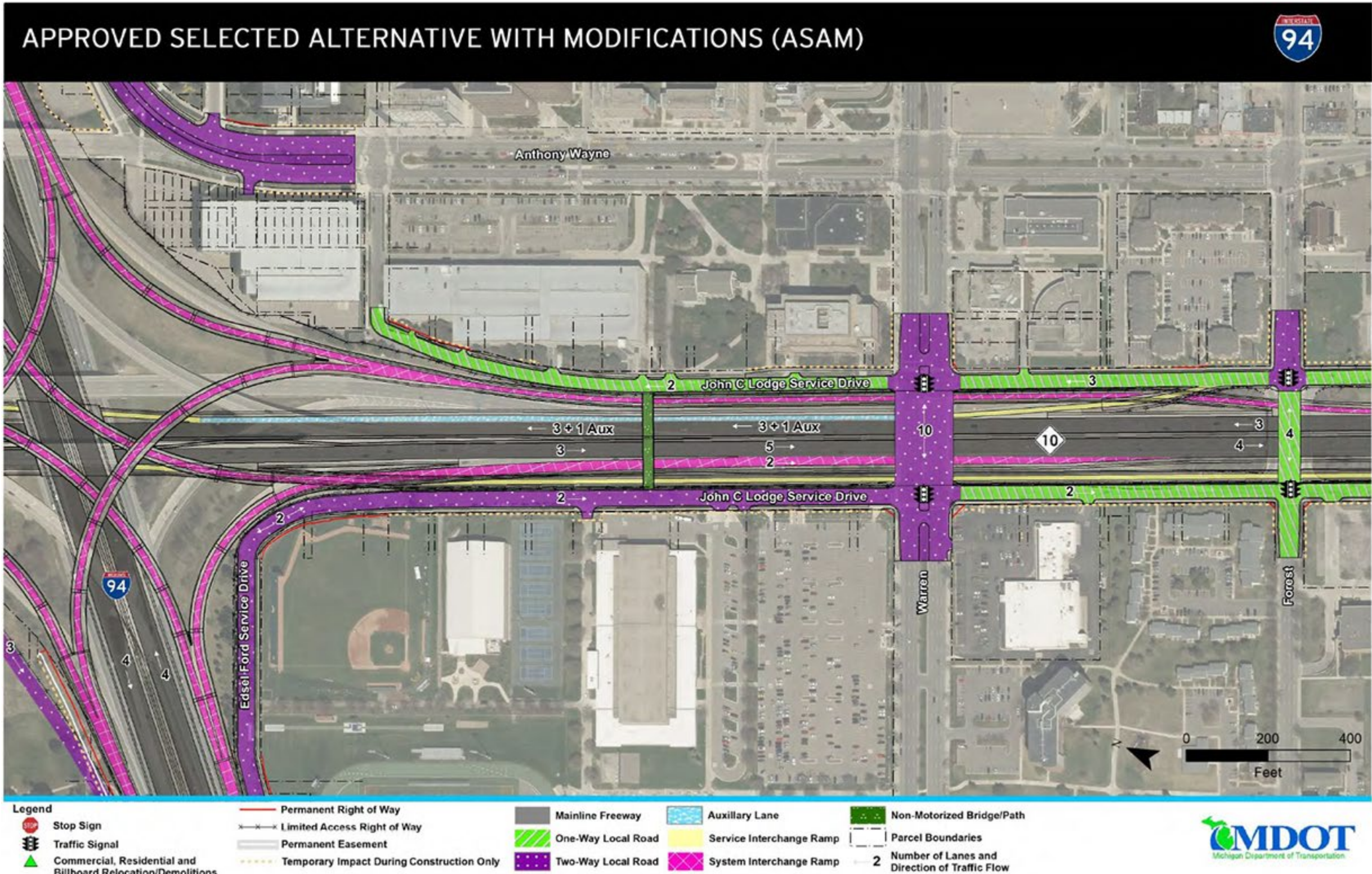


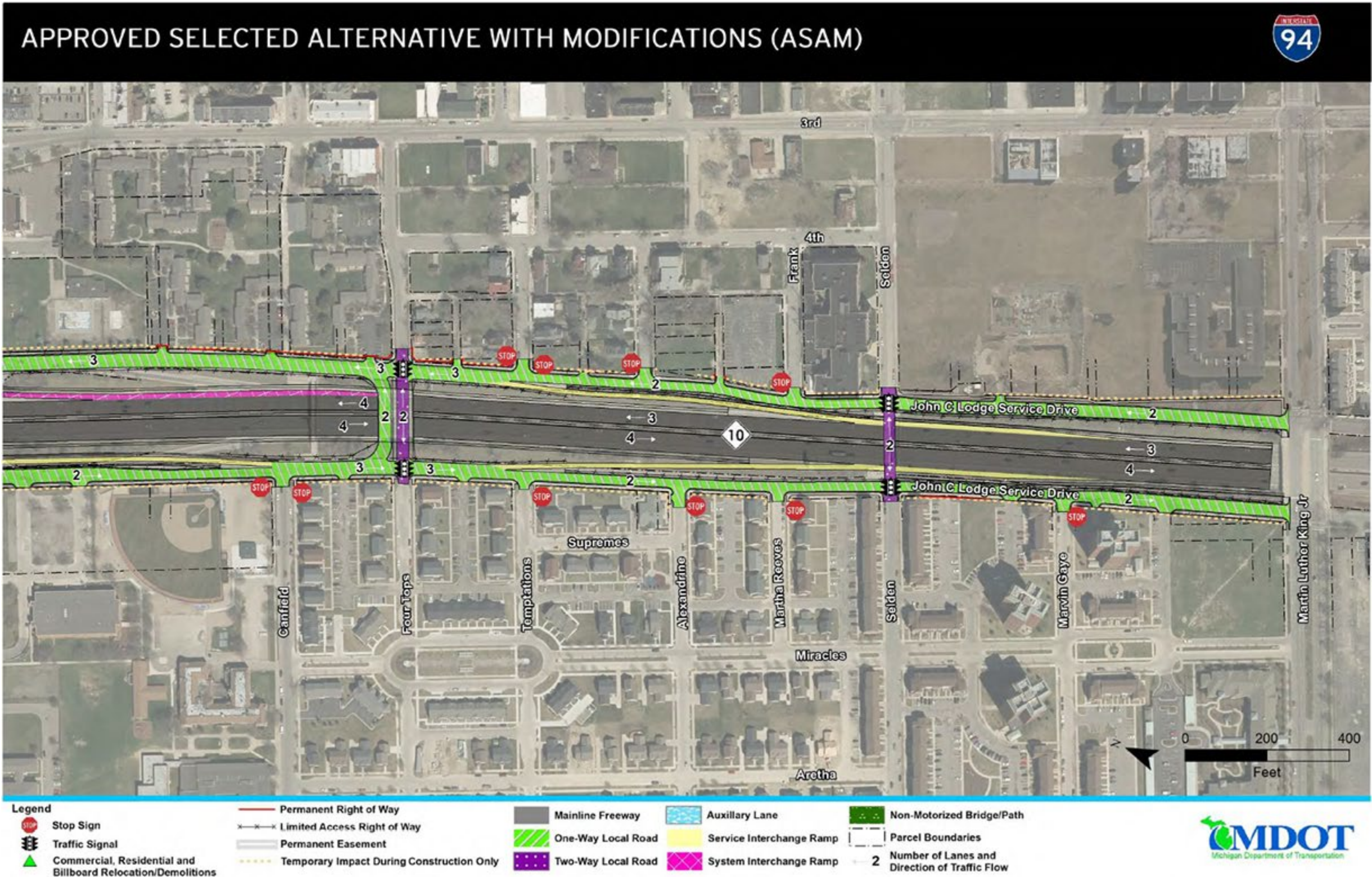


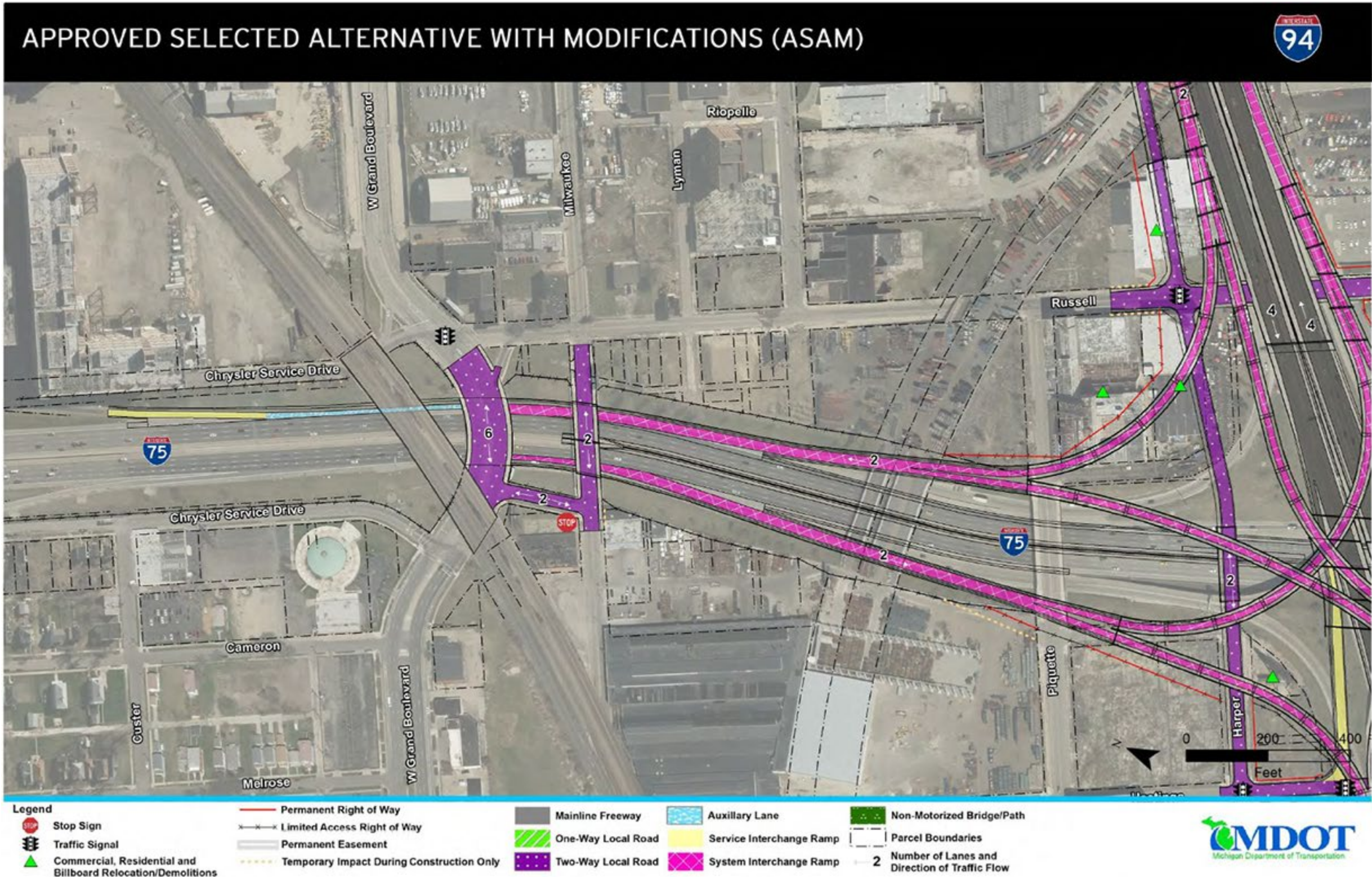


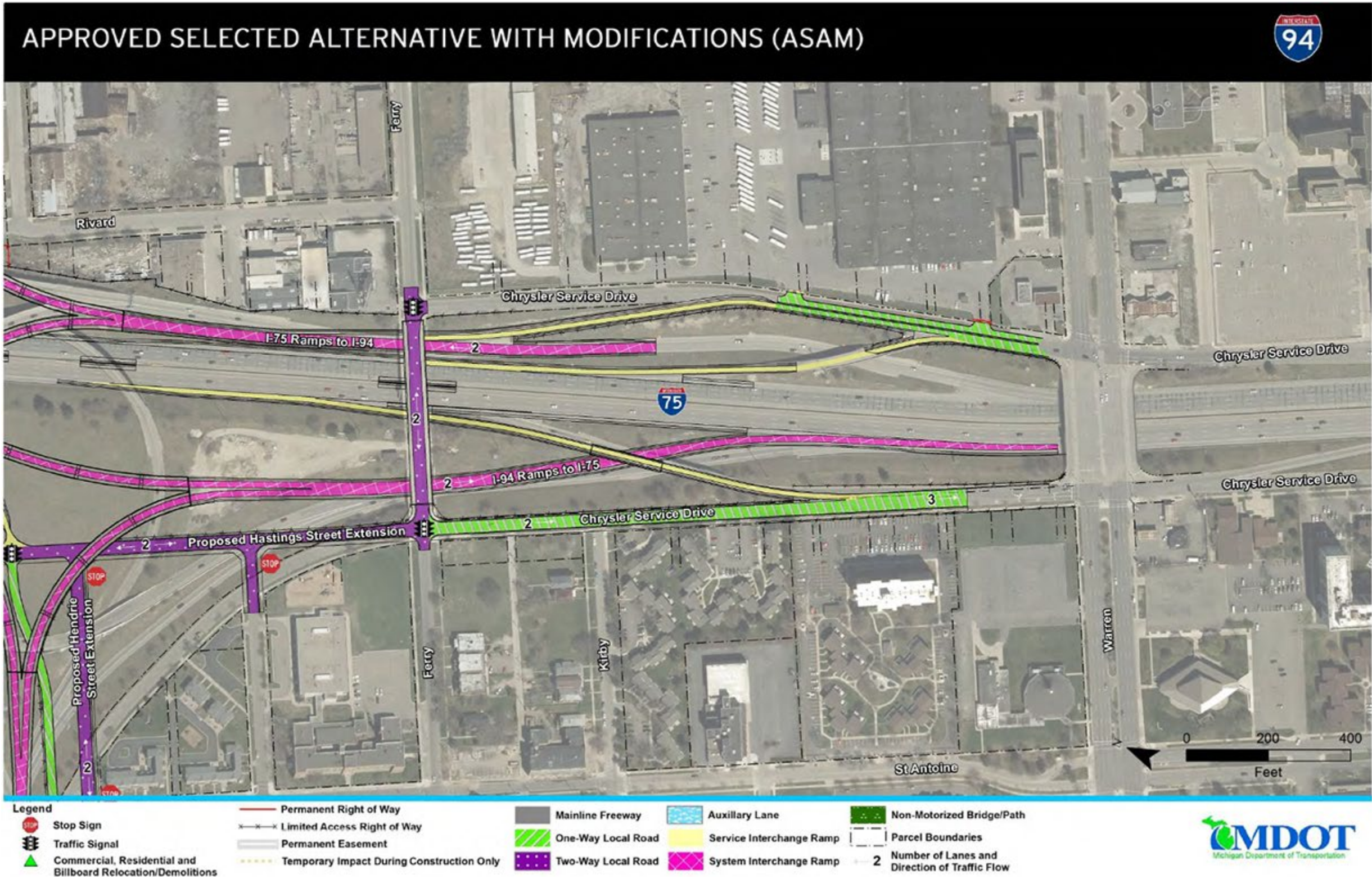


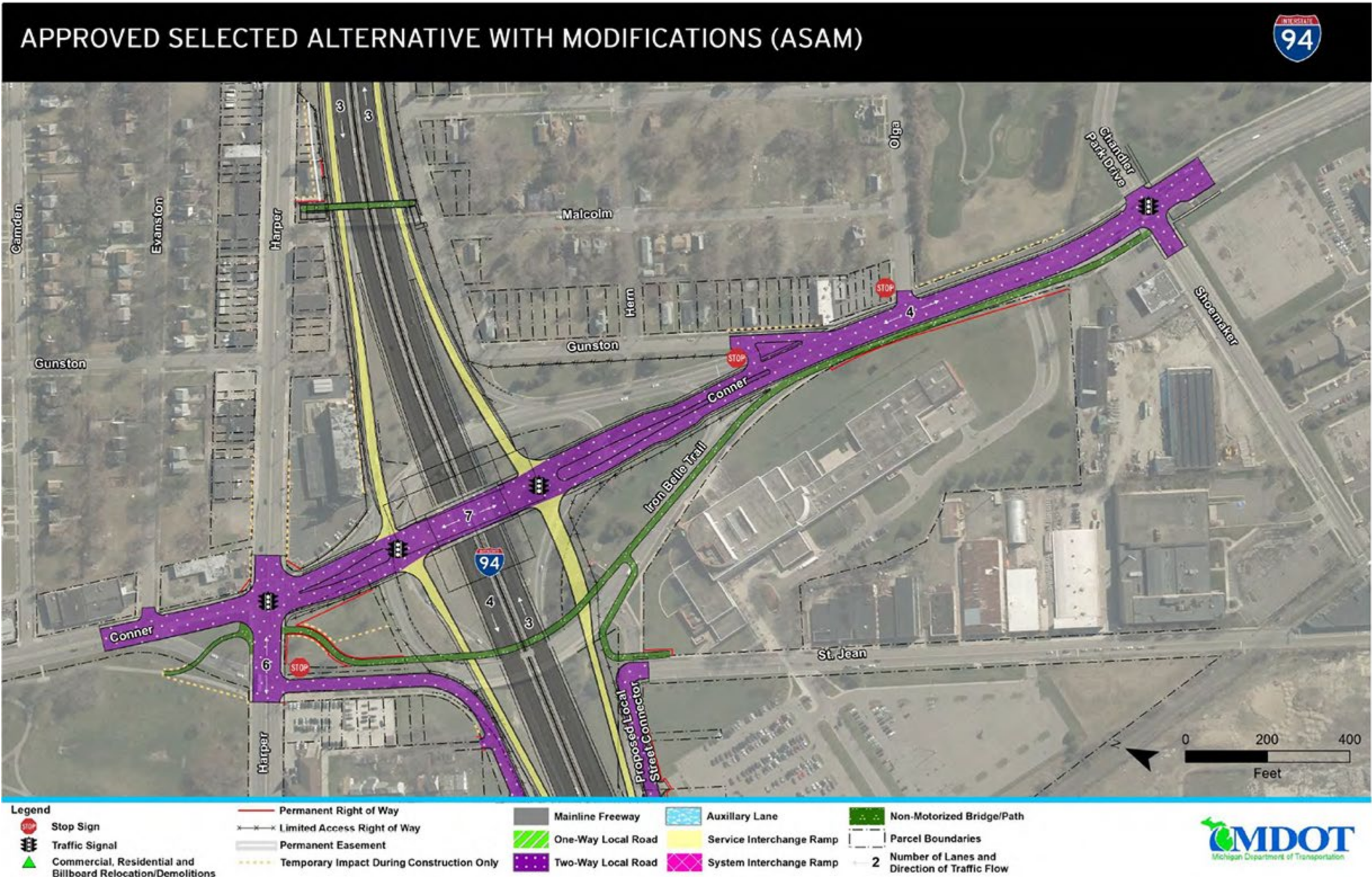












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