



I-94 Rehabilitation Project

FHWA-MI-EIS-01-01-F

December 2004

Final Environmental

Impact Statement

and

Section 4(f)

Evaluation

Executive Summary



PREFACE

The National Environmental Policy Act (NEPA) of 1969 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 Environmental Impact Statement (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 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).

This document is a Condensed Final Environmental Impact Statement (FEIS) for the proposed I-94 Rehabilitation Project from east of I-96 to east of Conner Avenue, city of Detroit, Wayne County, Michigan. It presents the Recommended Alternative and relevant analyses and addresses the comments received during the public hearing process. Following the comment period on the FEIS, a Record of Decision (ROD) will allow the project to proceed to design, right-of-way acquisition and construction.

This document also contains a Final Section 4(f) Evaluation for the I-94 Rehabilitation Project. Section 4(f) of the Department of Transportation Act requires that an evaluation be prepared when the proposed action may have an adverse effect on a property eligible for or listed on the National Register of Historic Places. The proposed action has been determined to have an adverse effect on properties that meet the criteria for listing on the National Register of Historic Places. A Memorandum of Agreement under Section 106 of the National Historic Preservation Act is also included in this document.

This document was prepared by the Project Planning Division of the Michigan Department of Transportation (MDOT), in cooperation with the Federal Highway Administration (FHWA), and other members of the study team. The study team includes representatives from the following divisions within MDOT: Design, Project Planning, Real Estate, Construction and Technology, and Traffic and Safety. The MDOT Metro Region and the MDOT Detroit Transportation Service Center staff also participated in the project development process. Information contained in the FEIS was also furnished by other federal and state agencies, local units of government, public interest groups, and individual citizens.

This document has been published by authorization of the Director of the State of Michigan's Department of Transportation in keeping with the intent of the *National Environmental Policy Act of 1969* and subsequent implementing regulations and policies including *Title VI of the Civil Rights Act of 1964*, that direct agencies to provide the public and other agencies an opportunity to review and comment on proposed projects and alternates so that potential impacts on the project can be considered and taken into account during the decision-making process. The cost of publishing 200 copies of this document at \$6 per copy is \$1,200, and the document has been printed in accordance with *Michigan Executive Directive 1991-6*.

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SUMMARY

This executive summary provides an overview of the contents of the I-94 Rehabilitation Project Final Environmental Impact Statement (FEIS) and Final Section 4(f) Evaluation for the section of I-94 from just east of the I-96/I-94 interchange to just east of the Conner Avenue interchange. The FEIS follows a condensed format; each major section of the FEIS briefly summarizes the important information contained in the corresponding section of the Draft Environmental Impact Statement (DEIS), references the section of the draft that provides more detailed information, and identifies any noteworthy changes that have occurred since the publication of the DEIS. Other relevant information is contained in the appendices of the FEIS.

1.0 Introduction

The DEIS documented the potential social, economic, and environmental impacts that would result from the I-94 Rehabilitation Project and identified mitigation measures for the impacts. The DEIS also stated that implementation of the Build Alternative, as described in that document, will require the acquisition of additional right-of-way and reconstruction of the roadway.

The FEIS discusses several modifications to the DEIS Build Alternative that were considered as a result of comments received on the DEIS. The FEIS also describes the Recommended Alternative for the project, its basis for selection, and any changes in the project, its setting, technical analysis, mitigation measures, and impacts that have occurred since circulation of the DEIS. Also included are the coordination efforts that have occurred since circulation of the DEIS, agency and public comments received on the DEIS, and responses to those comments.

The following technical analyses were prepared or updated for the FEIS to document the impacts of the Recommended Alternative and identify mitigation measures:

- Environmental Justice;
- Air Quality;
- Noise;
- Contamination;
- Vibration;
- Water Quality/Drainage
- Traffic; and
- Indirect and Cumulative Effects.

The Recommended Alternative will reduce impacts compared to the DEIS Build Alternative. The reduced impacts are due to a narrower cross-section (a narrower median and predominantly a two lane service drive) that allows the I-94 Recommended Alternative to precisely follow the existing I-94 alignment and allows the use of existing service drives where available.

The FEIS, like the DEIS, complies with requirements of the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality (CEQ) regulations, and guidelines and requirements of the Federal Highway Administration (FHWA).

As stated in the DEIS, the I-94 Rehabilitation Project would provide transportation improvements to 6.7 miles of I-94 (Edsel Ford Freeway) in the city of Detroit from just east of I-96 to east of the Conner Avenue interchange. The improvements would preserve and enhance a vital component of Michigan's transportation infrastructure, a backbone of the state's economy. The rehabilitation of I-94 would address current and future capacity, safety, pavement, and bridge needs along I-94. The rehabilitation also would enhance local traffic circulation by separating local traffic from freeway traffic.

2.0 Description of Project Area

The I-94 Rehabilitation Project limits described in Section 2.3 of the DEIS remain valid. The DEIS Section 2.3 also broke the project limits into three segments referred to as A, B, and C. These segments were used to facilitate the discussion of impacts in Chapter 5 of the DEIS. The FEIS no longer refers to these segments. Figure 1 illustrates the I-94 Rehabilitation Project limits.

I-94, from I-96 to Conner Avenue, is an area of dense urban development with closely spaced interchanges. These interchanges serve numerous major traffic generators and provide access to the city of Detroit's central business district. The project area includes two major freeway-to-freeway interchanges and five interchanges with local streets for a total of seven interchanges in less than seven miles.

This portion of I-94 includes the highest-recorded traffic volume on any section of I-94 in the state of Michigan. The operational characteristics are complex due to the numerous system connections, local access connections, and high-volume destinations. A 1995 speed study (*Traffic Report Volume I, Existing Conditions*) conducted for this project recorded actual measured peak hour speeds of 30 miles per hour (mph) between I-96 and Conner Avenue at several locations and times. The posted speed limit is 55 mph. The difference between the actual speeds and posted speed limit indicates the severity of the traffic congestion. The 1940s-1950s design of this section of I-94 is outdated and still includes such features as left-hand on-ramps and off-ramps as well as deceleration-acceleration lanes that are inadequate for today's traffic volumes and speeds. This section of roadway requires a redesign to improve operational flow, reduce congestion, and increase safety.

2.1 Validation of Project Limits

The project limits for the I-94 Rehabilitation Project, as noted in Section 2.0 above and shown in Figure 1, were evaluated according to the FHWA regulation 23 CFR 771.111 (f). This regulation outlines three principles ensuring the meaningful evaluation of alternatives and avoiding commitments to transportation improvements before they are fully evaluated.

- “Logical termini”: The I-94 Rehabilitation Project connects rational endpoints for transportation improvements and is of sufficient length to address environmental matters on a broad scope.
- “Independent utility”: The I-94 Rehabilitation Project is self-sufficient and has independent significance. That is, the length proposed for improvement is usable, and the project involves a reasonable expenditure of funds even if no additional transportation improvements in the area are made.



Figure 1
Project Limits

I-94 REHABILITATION PROJECT



- “Other improvements”: The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Section 2.3 of the FEIS contains a more extensive discussion of the choice of project limits, including more detail on the issues covered in the DEIS, together with additional factors.

The project limits for the I-94 project are logical and appropriate due to the:

- identification of this section of I-94 in statewide and regional plans as the Michigan roadway section most needing action;
- poor condition of the pavement and bridges in this section of I-94;
- presence of unique problems and circumstances; for example: highest I-94 traffic volumes and congestion and closely spaced interchanges and ramps;
- above-average crash rate;
- outdated design of left-hand on-ramps and off-ramps;
- inadequate acceleration and deceleration lengths for ramps;
- connection to the I-96, I-75, M-10 (Lodge Freeway), M-53 (Van Dyke), and M-3 (Gratiot Avenue) and three international border crossings (Blue Water Bridge, Ambassador Bridge, and the Detroit-Windsor Tunnel);
- importance to Michigan’s economy; and
- the extensive reconstruction completed east of Conner Avenue.

3.0 Purpose and Need for the Proposed Project

The purpose and need for this project—as described in the DEIS Chapter 2—has not changed. However, as a result of continued coordination, various elements of the purpose and need have been clarified. The purpose of the I-94 Rehabilitation Project (from east of I-96 to east of Conner Avenue) continues to be the improvement of the condition and capacity of the existing I-94 roadway and interchanges. The condition of the existing facility is the primary need for action. The condition and capacity problems have resulted in this section of I-94 being recognized in statewide and regional plans as the Michigan roadway section most needing action.

This improvement will enable I-94 to continue to fulfill its intended functions of providing for the national and civil defense, and meeting the needs of local and interstate commerce. The DEIS described a number of problems associated with this portion of I-94 in addition to its aging roadways and bridges. The problems include:

- A lack of capacity indicated by frequent congestion with stop-and-go conditions (this section of I-94 has the highest traffic volumes of any section of I-94 in Michigan);
- Safety issues (above average crash rates) related to the lack of ramps, inadequate length of ramps, and the lack of adequate acceleration-deceleration lanes for merging and weaving traffic;
- Poor local traffic circulation due to the lack of continuous service drives;

- Aging bridge and pavement conditions;
- Limited accommodation of pedestrians and bicyclists; and
- Outdated design including the M-10/I-94 interchange having left- and right-hand on-ramps and off-ramps.

These shortcomings are magnified by the location of I-94 within the city of Detroit. This section of I-94 inter-connects to the three U.S.–Canadian border crossings (Blue Water Bridge, Ambassador Bridge and the Detroit-Windsor Tunnel) with high traffic volumes, three major freeways (I-96, I-75, and M-10), two state-marked routes (M-53 and M-3), and three city streets (Conner Avenue, Chene Avenue and John R Street). There are seven full interchanges within a distance of 6.7 miles. This length of I-94 is, therefore, a major roadway within the city of Detroit.

I-94 also provides access to the Detroit Cultural Center, major industries (including General Motors' Cadillac plant and Ford Rouge plant), Wayne State University, Detroit Metro Airport, Detroit City Airport, medical complexes, major league sports stadiums, and downtown Detroit. It is a key artery to Detroit and Southeast Michigan. The central location of the project area in Detroit makes its condition and design important, not only to the image of the adjacent neighborhoods but also to the overall image of Detroit.

The planning process used to develop project alternatives and the environmental documentation, as well as the alternative evaluation process, is reviewed in Chapter 3 of the DEIS and the FEIS.

4.0 Alternatives

Chapter 4 of the DEIS described the alternatives that were evaluated to determine the best option to address current and projected travel demands, reduce the number of traffic crashes, and rehabilitate the pavement and bridges along I-94. The Practical Alternatives were retained for further study in the FEIS; however, only the DEIS Build Alternative was determined to satisfy the purpose and need. The Practical Alternatives include:

- The No-Build Alternative;
- The Enhanced No-Build Alternative; and
- The DEIS Build Alternative.

Three modifications to the DEIS Build Alternative were considered in preparation of the FEIS. Each modification is directly responsive to public and agency input and (along with the Practical Alternatives) is described below. Each modification is a variation on the DEIS Build Alternative (see Section 4.4 of the FEIS). The changes respond to public and agency comments. All changes resulted in reductions of the footprint of the DEIS Build Alternative. The main elements of the DEIS Build Alternative and the three modifications remain the same (four lanes in each direction of the I-94 freeway mainline and continuous service drives).

4.1 No-Build Alternative

As described in Section 4.3.1 of the DEIS, the No-Build Alternative would maintain I-94 between I-96 and Conner Avenue in its existing configuration, alignment, and location. No immediate changes would be made. Bridges and pavement would be replaced on an as-needed basis. The No-Build Alternative is retained as a basis of comparison for the DEIS Build

Alternative and modifications. It would not meet the purpose of the proposed project and the need to increase safety and capacity, as further described in Chapter **Error! Reference source not found.**, as well as in Section 4.1 of the FEIS.

4.2 Enhanced No-Build Alternative

As described in Section 4.3.2 of the DEIS, the Enhanced No-Build Alternative includes:

- Reconstruction of existing lanes;
- Adding auxiliary lanes, acceleration-deceleration lanes, and shoulders where possible, without purchasing additional right-of-way; and
- Replacement of all bridge structures, ramps, and pavement without major changes to the design of I-94 and the M-10 and I-75 interchanges.

This alternative reconstructs the entire I-94 facility within the project area with minimal changes to the existing configuration. It addresses only the physical condition of the facility and does not address the other problems or deficiencies noted in the FEIS Chapter 2. Some minimal improvements would be made, where possible, within the existing right-of-way. These would include improvements to acceleration-deceleration lanes, auxiliary lanes, and shoulders. While these improvements would improve this stretch of I-94, they would not address the larger problems of outdated design, inadequate capacity, discontinuous service drives, and system continuity.

4.3 DEIS Build Alternative

As described in Section 4.3.3 of the DEIS, this Build Alternative for the I-94 Rehabilitation Project includes:

- A general-purpose driving lane in each direction;
- A reserved space in the median to accommodate future transportation needs;
- Auxiliary and acceleration-deceleration lanes;
- Three-lane continuous service drives on each side of I-94; and
- New pavement, bridges, retaining walls, and ramps.

The continuous three-lane service drives consist of two 12-foot lanes and a 16-foot lane. The 16-foot lane could be used for transit, buses, bicycles, or for other transportation purposes.

The DEIS Build Alternative also reconstructs the M-10 and I-75 interchanges; this includes new continuous service drives through the interchanges that will contribute to better access and circulation in the interchange areas. The reconstructed interchanges would (1) eliminate left-hand on-ramps and off-ramps and (2) improve access to and from the adjacent street network.

Pedestrian mobility would be enhanced with continuous sidewalks adjacent to the continuous service drives throughout the project and new pedestrian crossings over I-94, either on pedestrian-only bridges or in combination with vehicular bridges.

4.4 Modifications to DEIS Build Alternative

Three modifications to the DEIS Build Alternative were developed in response to comments received on the DEIS. The comments indicated that a narrower cross-section was desired to reduce impacts on neighboring properties and minimize displacements to the extent practical. Comments also were received about the three-lane service drives being too wide and encouraging high speeds.

The DEIS Build Alternative with the three modifications represent all possible combinations of wide and narrow medians as well as two- and three-lane service drives.

- Modification 1 includes a narrower median (no reserved space for future transportation needs) and reduces the service drives, except adjacent to Wayne State University, to a continuous two-lane configuration.
- Modification 2 retains the reserved space in the median; however, it reduces the service drives, except adjacent to Wayne State University, to a continuous two-lane configuration.
- Modification 3 eliminates the reserved space in the median, while it retains the three-lane service drive configuration.
- See FEIS Section 4.4 for additional information on these modifications.

4.5 Comparison of Practical Alternatives and Selection of the Recommended Alternative

The practical alternatives and modifications were compared by evaluating each of the three alternatives (No-Build, Enhanced No-Build, and the DEIS Build) and the three DEIS Build Alternative modifications relative to a series of factors grouped into the following categories: engineering; community access and circulation; environment; and social and economic. See FEIS Section 4.4 for further detail.

4.6 Description of the Recommended Alternative

The DEIS Build Alternative Modification 1 with three refinements (see FEIS Section 4.4.1) was chosen as the Recommended Alternative. It contains four through-traffic lanes in each direction and improved geometrics including:

- Redesigned interchanges with M-10 and I-75;
- Adequate acceleration-deceleration lanes; and
- Auxiliary lanes for weaving.

The median will include a 14-foot inside shoulder, a 12-foot outside shoulder width, and a 6- to 10-foot variable median strip in which to place a concrete barrier. The service drives will include two 11-foot travel lanes and an 8-foot shoulder except in the location between M-10 and I-75 on the south side of the I-94 freeway where three lanes will be provided (see FEIS Section 4.5). It will not include a reserved space on the I-94 mainline freeway.

The Recommended Alternative:

- Satisfies the purpose and need for the project;
- Most effectively addresses public, stakeholder, and agency concerns among all alternatives considered;
- Is the least costly and has the least social, economic, and environmental impact to construct compared to the DEIS Build Alternative and Modifications 2 and 3; and
- Allows independent projects with the service drives and interchanges to be constructed separate from, and prior to, the mainline to maintain local traffic during mainline construction.

5.0 Social, Economic, and Environmental Impacts

Chapter 5 of the DEIS described the impacts related to the Practical Alternatives. The subsections below focus on the impacts of the Recommended Alternative and are further described in detail in the FEIS Chapter 5.

5.1 Social Environment

5.1.1 Acquisition Impacts

The No-Build and Enhanced No-Build alternatives would require no right-of-way acquisition.

Implementation of the Recommended Alternative will result in the acquisition of existing structures as shown in Table 1. The numbers shown herein are based on conceptual design, performed in the year 2004, which establishes the early layout of the freeway to identify impacts associated with the right-of-way needed for design and construction. Final determination of impacts to residences and businesses will occur during final design, and will be coordinated with residents through the MDOT land acquisition process to determine the actual impacts. There are an estimated 198 partial parcel takes (part of a property excluding structures) and 104 full parcel takes (all of property including structures) of individual tax identification parcels, estimated at \$32.6 million.

Mitigation of Acquisition Impacts

All property acquisition will be in accordance with state and federal law. Owners will be compensated for the fair market value of the property. *Fair market value* is the highest estimated price which the property would bring if exposed to sale on the open market.

5.1.2 Displacement Impacts

The Recommended Alternative was refined from the DEIS Build Alternative in response to citizen and city of Detroit concerns regarding the large number of residents who would have been displaced. The total number of displacements from the DEIS Build Alternative to the Recommended Alternative was reduced from 69 to 42 structures.

Displacement Assistance

Qualified MDOT personnel will provide relocation assistance services to displaced residents and businesses. Currently, comparable housing and commercial properties to rent or buy are available in the project area. The MDOT has developed a Conceptual Stage Relocation Plan (see

FEIS Appendix C) for the project area to analyze the potential displacements within the area if the Recommended Alternative is implemented. The plan is in compliance with Michigan and federal regulations and guidelines.

Table 1: Estimated Number of Structure Acquisitions for the Recommended Alternative

Type of Property	Estimated Parcels to be Acquired Containing Structures	Estimated Structures to be Acquired on those Parcels
Apartments	2 (14 Units)	2
Single-Family	14 (14 Units)	14
Duplexes	2 (4 Units)	2
Commercial	12	12
Industrial	4	5
Public Facilities/Maintenance Yards	3	5
Garage/Structure	1	1
Utility Substation	1	1
Total	39	42

5.1.3 Community Facilities and Services

The No-Build and Enhanced No-Build alternatives would have no direct impacts on community facilities and services. The No-Build Alternative is the current design and the Enhanced No-Build Alternative would be consistent with the current design. As a result, these two alternatives would not change travel patterns or result in any displacements, or affect social integrity. However, in the long-term, the No-Build and Enhanced No-Build alternatives would have an effect on community facilities and services as congestion increases. Neighborhood access, transit routes, and emergency vehicle access would remain as they currently exist. Increasing congestion would make access for all in the area more difficult.

Neither the No-Build Alternative nor Enhanced No-Build Alternative would include construction of sidewalks. Pedestrian access to community facilities would not be improved. Pedestrian and bicycle mobility would remain unchanged.

As a result of acquisition of property and structures, the Recommended Alternative will affect neighborhoods adjacent to I-94. However, the Recommended Alternative will result in fewer displacements than was anticipated with the DEIS Build Alternative. The continuous service drives will provide community connectivity.

The beneficial impacts of enhanced access and improved aesthetics of the Recommended Alternative will facilitate revitalization and contribute to the redevelopment and integrity of the communities. Reconstructed vehicular bridges, continuous service drives, and decreased congestion will reduce response time for emergency vehicles.

5.1.4 Non-Motorized (Pedestrian and Bicycle) Mobility

Neither the No-Build nor the Enhanced No-Build alternatives would provide continuous service drives. Thus, transit and mobility options would remain as they currently exist for residents without automobiles.

The Recommended Alternative will add sidewalks adjacent to the continuous service drives along the length of I-94 and improve pedestrian access to community facilities and services. The continuous service drives also will provide opportunities for improved transit service, as well as further improve pedestrian and bicycle mobility within the project area.

5.2 Environmental Justice

The analysis described in Section 5.1.4 of the DEIS was updated for the Recommended Alternative. The FEIS documents the environmental justice (EJ) impacts of the Recommended Alternative according to:

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, issued in February 11, 1994; and
- The U.S. Department of Transportation (USDOT) and the FHWA orders outlining how environmental justice analyses should be performed and how transportation project decisions should be made to avoid disproportionately high and adverse effects on minority and low-income populations.

The USDOT requires agencies to (1) explicitly consider human health and environmental effects related to transportation projects; and (2) implement procedures to provide meaningful opportunities for public involvement to members of low-income and minority populations during project planning and development.

Approximately 35 percent of the population in the project area has an income below the federal poverty level, compared to 11 percent of the population of the city of Detroit and approximately 8 percent of the population of the state of Michigan. Approximately 90 percent of the project area population is classified as minorities (non-whites). An Environmental Justice (EJ) analysis is required.

Adverse and beneficial effects are discussed in FEIS Section 5.1.4 in relation to:

- Displacement of persons, businesses, and non-profit organizations;
- Pedestrian accessibility and mobility;
- Air, vibration, noise, and water pollution; soil contamination;
- Destruction or disruption of natural resources;
- Destruction or diminution of aesthetic values;
- Destruction or disruption of community cohesion;
- Destruction or disruption of the community's economic vitality and employment effects;
- Destruction or disruption of the availability of public and private facilities and services;
- Traffic congestion;

- Exclusion, separation, or isolation of minority/low-income individuals within a given community from a broader community; and
- Denial of, Reduction in, or Significant Delay in the Receipt of Benefits.

Actions to address adverse EJ effects are described in FEIS Section 5.1.4.3.

Environmental Justice Conclusions

The Study Area of Affect is home to an Environmental Justice population that is largely low income, and more than 90-percent Non-White. As such, impacts to this population were carefully examined to determine the best means to avoid, minimize and/or mitigate adverse conditions. Although the Recommended Alternative is preferred over the other options in the DEIS it will adversely impact the EJ population as described previously in this chapter. Table 5-9 provides a summary of the impacts, benefits, and mitigation factors. The overall EJ population will be impacted to the same degree except in areas where specific infrastructure changes are proposed, such as removing a pedestrian bridge.

The Recommended Alternative could potentially impact 24 business structures and 18 residential structures. Most of these structures have aged, and the structural integrity has been compromised. The potential displacements are only a few of the impacts to the Study Area of Affect. Additional impacts are defined in Table 5-9.

Infrastructure improvements including continuous service drives, adding capacity and improving design of bridges and interchanges will help to better connect the community, prompt land use development, and facilitate better bus service and transit amenities. The pedestrian only crossings will be safer than those that exist today, as they will go over the new continuous service drives and the I-94 freeway mainline.

Implementing the Recommended Alternative creates opportunities to develop partnerships necessary to maximize benefits to the affected community as the project progresses through the developmental stages. Efforts to minimize impacts will include 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.

Pedestrian accessibility will be affected by the elimination of two pedestrian-only crossings and eight bridge crossings in the corridor. This accessibility is addressed by having another crossing within three blocks of an existing crossing. Accessibility also is enhanced by eight additional crossings being provided in each direction through the M-10/I-94 and I-75/I-94 interchanges. Even with some closures, the traveling public will not be isolated from other people, communities, and services in the study area. Mobility and accessibility in fact will be improved through the installation of continuous service drives.

The Recommended Alternative has the least impacts on the environmental justice (EJ) population.

5.3 Economic Development

A variety of businesses are scattered along the I-94 corridor ranging from strip malls to large industries. Strip commercial developments front major thoroughfares such as West Grand Boulevard, Warren Avenue, Van Dyke Avenue, Harper Avenue, and Gratiot Avenue. Industries are concentrated around the northeast portion of the M-10 interchange, I-75/Conrail interchange,

along Piquette Avenue, and along Trombly Street. A more detailed discussion of existing businesses is found in Section 5.2.1 of the DEIS.

Employment data was updated based on the 2000 Census. The 2000 Census indicates that there are approximately 11,527 people employed within the Census tracts in the project area, a decline of approximately 3,570 from the 1990 Census. The highest numbers of employees are in manufacturing, health care, and social assistance.

The I-94 corridor traverses several of Detroit's Empowerment Zones and Renaissance Zones. Empowerment Zones were designated by the Secretary of the U.S. Department of Housing and Urban Development as areas targeted for federal and local development assistance. The state of Michigan implemented Renaissance Zones to stimulate investment in largely industrial areas by virtually eliminating all state and local taxes for businesses and residences located in these zones.

Impacts to the Economy

The Recommended Alternative will result in enhanced access to businesses in the project area, primarily due to the continuous service drives. In addition, construction will add jobs and money to the local economy. Refer to Section 5.2.2 of the DEIS for a detailed discussion of impacts to the economy.

The Recommended Alternative will result in the acquisition of property and displacement of residents and businesses. The estimated numbers of residential and non-residential properties that will be displaced are discussed in FEIS Section 5.1.2. Sixteen businesses will be displaced: 12 commercial and four industrial. The commercial businesses include two bars, a 24-unit motel, two fast-food restaurants, a recording studio, an automotive service center, a storage unit, truck sales, a development center, a strip retail development, and a vacant building. Employment losses associated with the displaced commercial and industrial businesses will be largely dependent on the interest of these enterprises to relocate to other properties within the project vicinity. Currently, up to one-third of the commercial structures may be vacant, while the remaining businesses are generally small, service-oriented enterprises. Several of the industrial displacements include ancillary buildings servicing larger corporate businesses in the metropolitan area. The utility substation will be relocated within the area and will not have an impact on the economy. A more detailed assessment of the commercial and industrial displacements – 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 (0.6 percent) as a result of right-of-way acquisitions for the Recommended Alternative. It is expected that as the area redevelops, the property tax revenues will be regenerated.

Mitigation of Impacts to Economic Conditions

Mitigation was discussed in detail in Section 5.2.3 of the DEIS. The four industrial and 12 commercial properties that will be displaced as a result of the Recommended Alternative will be acquired in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Federal Law 91-646). Businesses and non-profit 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 Renaissance Zones located throughout the project area (see FEIS Figures 5-9A and B). In addition, during final design, local businesses will be

contacted by the MDOT and appropriate mitigation will be developed to assist with viability of businesses during and after construction. An updated Conceptual Stage Relocation Plan for the Recommended Alternative is found in FEIS Appendix C.

5.4 Land Use

Land use throughout the project area remains largely unchanged since issuance of the DEIS. The area is dominated by residential and industrial land with scattered commercial and institutional land uses, and intermixed throughout with vacant lands. A detailed discussion of land use is presented in Section 5.3.1 of the DEIS. The existing land use conforms to the city of Detroit zoning ordinances and land-use policies.

Land-Use Policy

Land use in Detroit and adjacent to I-94 follows the policies put forth in the *Detroit Master Plan of Policies* (1990). The city of Detroit is currently (2004) updating its *Master Plan of Policies*. The Mayor's Land Use Task Force published *A Framework for Action* (1995), a report that discusses land-use strategies and makes recommendations for more livable communities in the city of Detroit.

A Framework for Action makes several recommendations including coordinating the rebuilding of I-94 with policies for future land use. Therefore, the reconstruction of I-94 is consistent with the framework. It is stated in the framework that the rebuilding of I-94 would provide opportunities for retaining and attracting business and improving access to jobs and services. Figure 5-6 in the DEIS provides a summary of land use recommendations.

Impacts to Land Use

Construction of the Recommended Alternative will support existing land use and the implementation of future land-use recommendations. The Recommended Alternative will provide improved mobility and access to land use within the project area and encourage redevelopment of areas along I-94 by improving access and aesthetics. Refer to Section 5.3.2.2 of the DEIS for a more detailed discussion of impacts.

Since issuance of the DEIS, meetings were conducted with representatives from each of ten neighborhood Clusters (planning sectors within the city of Detroit) potentially impacted by the Recommended Alternative. Feedback from the Cluster meetings ranged from positive aspects of the Recommended Alternative, such as the continuous service drives, to areas of concern, such as potential negative impacts on local businesses and local traffic. Refer to Section 5.3.2 of the FEIS for further discussion.

5.5 Aesthetics and Visual Resources

There is no change to the regional visual character, viewers, viewsheds, or landscape units as described in Section 5.4.1 of the DEIS. The regional visual character reflects Detroit's industrial past, as the city of Detroit's urban character dominates the landscape in the absence of any distinctive landforms or natural features. Six visually distinct landscape units were described in the DEIS and provided a framework for comparing the visual effects of alternatives considered. The landscape units include: Transportation, Historic, Institutional, Industrial, Residential, and Mixed-Use.

Impacts to Aesthetics and Visual Resources

The effects of the proposed I-94 improvements on the visual resources and aesthetic setting of the I-94 corridor were described in Section 5.4.2 of the DEIS. Little change to the overall visual character is anticipated for the Historic, Institutional, Mixed-Use, and Industrial Landscape Units. The Residential Landscape Unit is expected to sustain some change as several single-family and apartment dwellings are removed for construction of the Recommended Alternative. The Transportation Landscape Unit will experience an improved overall aesthetic appearance as the existing mainline, interchanges, and local access roads are reconstructed.

If implemented, the Recommended Alternative will require a considerable increase in the use of retaining walls compared to the No-Build Alternative. The primary visual change to motorists on I-94 will be the loss of the grass embankments and a commensurate increase in concrete retaining walls along the mainline. Furthermore, visual differences will be evident in the height of the proposed retaining walls that will vary in height, reaching up to 25 feet in height to protect properties along the mainline depending on construction needs.

Visual changes in the landscape also will be evident to local motorists and to through traffic in the vicinity of the interchanges at M-10 and I-75. It is expected that the functional requirement of adding one additional set of ramps above the existing operating level will necessitate an increase in the height of each interchange. The profile of the M-10 interchange will be approximately 30 to 35 feet higher than the highest existing ramp, while the I-75 interchange will be approximately 40 feet higher on the west side of the interchange and 30 feet higher on the east side. Combined with the larger mass of the structures themselves, less use of grassed embankment and a greater dependence on retaining walls throughout, the interchanges will increase in overall prominence in the local landscape.

Mitigation of Impacts to Aesthetics and Visual Resources

In the next phases of design and construction, the MDOT is committed to ongoing coordination to develop appropriate Context Sensitive Solutions (visual aesthetics) with community representatives and the public. This effort will include the design of retaining walls, structural bridge elements, and other project facilities to help create a pleasing setting for those using the freeway and those viewing the freeway.

5.6 Air Quality

An air quality impact assessment focusing on the Recommended Alternative was conducted for the FEIS. As described in the DEIS, the existing air quality in Detroit complies with state and federal air quality standards for air pollutants.

Mesoscale Analysis

The regional or mesoscale analysis of a project determines a project's overall impact on regional air quality levels. A transportation project is analyzed as part of a regional transportation network developed by a county or a state. Projects in this network are found in the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP). The RTP includes a regional analysis utilizing vehicle miles traveled (VMT) and vehicle hours traveled (VHT) within the region to determine daily "pollutant burden" levels. The results of this

analysis determine if an area conforms with regulations set forth in the Final Conformity Rule. The Southeast Michigan Council of Governments (SEMCOG) conducts this analysis for the Detroit area.

The I-94 Rehabilitation Project is included in the SEMCOG 2025 *Regional Transportation Plan and Transportation Improvement Plan (TIP)* as a study. The SEMCOG 2030 RTP for the Detroit metropolitan received final approval on November 4, 2004. In making this approval, the General Assembly verifies that sufficient revenues are anticipated to be available and the projects in the plan conform with the air quality requirements. The MDOT will submit the approved SEMCOG 2030 RTP and conformity determination to the FHWA. The FHWA will review the document and in consultation with the Federal Transit Administration (FTA) and the Environmental Protection Agency (EPA) will make a Federal air quality conformity finding. The FHWA is expected to notify the MDOT regarding its finding in January 2005. This finding will satisfy the air quality and 23 USC 134 planning prerequisites for Federal approval of the FEIS and the Record of Decision (ROD).

Microscale Analysis

Microscale air quality modeling was performed using the most recent version of the EPA mobile source emission factor model (MOBILE6.2) and the CAL3QHC version 2 air quality dispersion model to estimate existing, future No-Build Alternative, and future Build Alternative carbon monoxide (CO) levels at selected locations in the project area. A detailed description of the analysis parameters, meteorological conditions, and the site selection process can be found in the *Air Quality Technical Report* and in Section 5.5.4 of the DEIS. The information contained in the *Air Quality Technical Report* and the DEIS remains valid with the following exceptions:

- The emission factor program used in the DEIS (MOBILE5) has been replaced with EPA's most current emission factor program, MOBILE6.2; and
- Background CO concentrations used in the DEIS were based on 1998 concentrations from the Livonia monitoring station. Background concentrations for the FEIS are from the Detroit Linwood monitoring station for the year 2002.

Analysis Sites Selection and Receptor Locations

Intersection analysis sites were selected through a screening analysis based on overall intersection volume, changes in intersection volume, and changes in level of service (LOS) estimates. There were 49 intersections screened. These sites represent the intersections within the study area that are expected to be impacted by the project.

Based on the screening analysis, eight intersection sites were selected for detailed analysis. Two interchange sites also were chosen for detailed analysis. The interchange sites were selected because of high traffic volumes on the ramps and the mainline as well as the proximity of sensitive receptors (that is, locations where the public has access). Thus, a total of ten analysis sites were selected.

Impacts

Maximum 1-hour and 8-hour CO levels were predicted at the ten analysis sites within the study area.

For the year 2025, the Recommended Alternative CO levels are higher than the No-Build Alternative CO levels at all of the sites analyzed. These sites were chosen to demonstrate the

worst-case impact the project is expected to have on local air quality levels. Though the Recommended Alternative levels are higher than the No-Build Alternative, all predicted concentrations are below applicable federal and state standards. The project is not predicted to cause or exacerbate a violation of the CO standards.

Mitigation

In addition to the measures described in the DEIS (Section 5.14.3.2), air pollution from construction equipment exhaust will be required to be limited by the use of filters and/or special fuels or the best practices and technology available at the time of construction.

5.7 Noise

A noise assessment focusing on the Recommended Alternative was conducted for the FEIS. As stated in Section 5.6 of the DEIS and the FEIS, several locations along I-94 currently experience noise levels that exceed the MDOT and FHWA noise criteria.

According to the MDOT noise criteria, a residence is impacted by noise if the sound level approaches or exceeds 67 decibels or when predicted traffic noise levels exceed existing noise levels by 10 decibels or more.

Methodology

The FHWA Traffic Noise Model (TNM) Version 2.0 was used to determine future year 2025 traffic-noise levels under both the No-Build Alternative and the Recommended Alternative. Peak-hour AM and PM traffic volumes and speeds were used in the computer model. Future noise levels for the No-Build and Recommended Alternative were predicted at the 30 monitoring sites for the AM and PM travel time periods. All TNM2 predicted future noise levels were adjusted by calibration factors.

Modeled Noise Impact

The results of the noise modeling show that noise levels of 66 dBA or greater are projected to occur at 21 of the 30 representative locations with the Recommended Alternative. There are no significant increases of 10 decibels or more at any location in the I-94 study area corridor. Overall, noise levels under the Recommended Alternative are predicted to increase 1 to 9 decibels over their 2001 DEIS reported levels.

Conversely, Recommended Alternative noise levels decrease 1 to 3 decibels from existing levels at six locations due to roadway modifications causing a shifting of traffic volumes away from these communities. Overall, Recommended Alternative AM noise levels were higher than corresponding Recommended Alternative PM noise-level predictions. However, there was no distinct trend.

Abatement Assessment Findings

Noise-barrier feasibility and reasonableness were evaluated at 19 of the 21 impacted locations identified. One of the locations was not investigated, due to the minimum length requirements (600 feet long) stated in the MDOT guidelines. A second location was not evaluated due to its location near commercial properties, since it is generally known that commercial and industrial sites prefer that their visibility not be reduced (see Section 5.6 of the FEIS). All investigated noise barriers satisfy the MDOT acoustic requirements and achieve the required minimum 6-decibel-or-more noise reduction. Three locations within the corridor, (one in the northwest

quadrant of the M-10/I-94 interchange and two in the southwest quadrant of the I-75/I-94 interchange) shown in Figures 5-11A and B, meet both the cost and acoustic requirements for constructing noise barriers.

Mitigation

Noise-barrier locations will be re-evaluated by the MDOT prior to final design. In addition to the measures described in the DEIS, noise abatement measures (including those listed below) will be used to minimize the construction noise levels in all areas outside the construction site boundaries.

- Construct noise barriers as part of the proposed improvements as early as feasible in the construction phase. These barriers will shield nearby residential areas from construction noise and traffic noise.
- Ensure that the construction contractor adheres to all applicable local, state, and federal noise control ordinance requirements.
- Maintain construction equipment in good repair, and fit it with manufacturer-recommended mufflers and other noise-reduction devices.
- Enclose or shield stationary construction equipment, such as generators, to block the direct path between the noise source and residences.
- Conduct equipment maintenance activities that exceed noise thresholds off-site or as far from homes as possible.
- Limit the number and duration of idling equipment on-site.
- Schedule truck loading and unloading and other handling operations so as to minimize noise impact to nearby residences.

5.8 Vibration

As stated in Section 5.7 of the DEIS and in the FEIS, vibration impacts could occur. Prior to construction, a plan to evaluate structures, especially historic structures, will be developed to identify potentially affected structures, prevent vibration impacts to them, document impacts that occur, and mitigate them. All buildings within the distance specified in the MDOT guidance at the time of construction will be videotaped by the contractor prior to construction to establish a baseline for later evaluation of impacts to basements and foundations.

5.9 Contaminated Sites

For the DEIS, a contamination assessment was conducted using data acquired in 1998. That assessment was based on an environmental database search by Environmental Data Resources, Inc. (EDR), together with a review of Sanborn Fire Insurance Maps, soils maps, environmental maps, aerial photography, and local city directories.

For the FEIS, a Project Area Contamination Survey (PACS) of the project corridor was conducted to determine the potential for contamination of the I-94 right-of-way from adjacent properties and business operations. The methodology generally followed the procedures of the American Society for Testing and Materials (ASTM) Phase 1 Environmental Site Assessment E-1527-00. Forty-nine sites were researched for evidence of documented contamination and

evaluated for potential contamination with respect to the anticipated construction impacts. Of the 49 sites researched, 15 were rated LOW, 15 were rated MEDIUM, and 19 were rated HIGH. (See Section 5.8.1 of the FEIS for a definition of Low, Medium, and High.).

In addition to sites evaluated that are in proximity to the proposed improvements, a supplemental evaluation of federally mandated cleanup activities (Superfund sites) within 1 mile of the proposed improvements was completed. Eleven sites located within 1 mile of the project area were identified from the Superfund Query Form using the federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database. Refer to *Project Area Contamination Survey*, June 2004, for more information, or Section 5.8 of the FEIS.

Mitigation

Any sites rated MEDIUM and HIGH will be further analyzed prior to the design phase of this project to verify or refute potential contamination concerns. Further assessment will include field screening with an organic vapor analyzer and the collection of soil and groundwater samples for laboratory analysis, where applicable. If the results of the testing indicate no evidence of soil or groundwater contamination, the rating of the site could be revised downward to indicate a lower expected risk. A health and safety plan will be developed during Phase II, according to MDOT Preconstruction Process Documentation Manual, Task 2820. Where contamination is expected, the Michigan Department of Environmental Quality (MDEQ) will be contacted, and requirements for handling impacted soils and worker safety issues will follow the health and safety plan and be incorporated into final construction plans.

Construction activities and/or demolition for all sites with the potential for the presence of asbestos will be in compliance with the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements and other applicable state or local regulations.

5.10 Drainage and Water Quality

There are no surface drains or water courses in the project area. All surface water runoff is directed to underground combined sanitary/storm sewers. Water quality impacts will be limited to ground water and/or storm water runoff directed to the combined sewers. Under normal circumstances, all storm water directed to combined sewers is treated before being released to the Detroit River. Under periods of heavy rainfall, some combined sewer flow can bypass treatment and be released directly to the Detroit River.

Soil erosion and sedimentation of underground drainage systems, along with an increase in the pollutants contained in the stormwater runoff, can be expected as part of the I-94 Rehabilitation Project. Pollution loading is possible during the construction phase because of 1) the increased surface and channel erosion that results from surface water drainage over exposed soils and 2) materials spilled or leaked from construction equipment and/or equipment storage areas. When the freeway is open for public use, pollutants commonly associated with highway runoff - including grease and oil, heavy metals, and contaminants from inadvertent spills and accidents - pose both short- and long-term threats to ground water quality and the Detroit River, if flows exceed treatment capacity. During periods of freeway maintenance, the application of de-icing agents and herbicides might result in further degradation of runoff water quality.

Negative effects on water quality will be mitigated to the maximum extent practical. The Recommended Alternative will include a new underground drainage system. The system will

include oil/water separators, discharge controls, inline detention basins, and other features that will reduce pollutants and sediments in the stormwater runoff. Maintenance operations such as catch basin cleaning and pavement sweeping will also reduce stormwater pollution. These features will minimize the potential negative effects on overall water quality. It is anticipated that the Recommended Alternative will not have a negative effect on the overall water quality of the project area.

5.11 Wetlands and Floodplains

As stated in Section 5.10.1 and 5.10.2 of the DEIS, no wetlands or floodplains are located in the project area.

5.12 Vegetation and Wildlife

As stated in Section 5.10.3 of the DEIS, no long-term impacts from any of the alternatives are expected on terrestrial flora or fauna within the project area, primarily because the I-94 project area lies within a developed urban area where few, if any, resources exist.

5.13 Archaeological Resources

As stated in Section 5.11.1 of the DEIS, no archaeological resources are known to exist in the project area.

5.14 Cultural Resources

Although the DEIS described a number of historic resources that could potentially be affected by the project, only four historic resources were identified that would be affected by the DEIS Build Alternative. The Recommended Alternative requires less right-of-way than the DEIS Build Alternative; but the Recommended Alternative will still affect the four identified historic resources.

The Recommended Alternative will affect the Woodbridge Neighborhood Historic District which is listed on the National Register of Historic Places (NRHP). The Recommended Alternative also will affect the I-94/M-10 interchange, the United Sound Systems Recording Studio, and the Square D/Detroit Fuse and Manufacturing Company Building which have been determined eligible for the NRHP. Refer to Section 6.0 of the FEIS for more information.

Impacts

The Recommended Alternative's specific impacts on each of the historic resources are described below:

Woodbridge Neighborhood Historic District

The Recommended Alternative will move a portion of the proposed I-94 service drive (Kirby Avenue) south. The Recommended Alternative will encroach up to approximately 40 feet into parts of the Woodbridge District. The majority of District lots adjacent to the service drive are currently vacant. Two lots adjacent to the service drive do contain buildings: a house located at 5287 Hecla Street, and a commercial building at 5287 Trumbull Avenue. The house at 5287 Hecla Street is identified as a contributing structure in the Woodbridge Neighborhood Historic District. The house at 5287 Hecla Street will either be moved or demolished as a result of the service drive shift, which is considered an adverse effect for the District. The commercial

building at 5287 Trumbull Avenue will not be affected and can remain in place. Parts of eight vacant lots will also be acquired to accommodate the service drive shift. The vast majority of the District and its buildings will remain intact after the rehabilitation of I-94 is complete.

I-94/M-10 Interchange

The I-94/M-10 interchange is historically important because this interchange was the first freeway-to-freeway interchange in the Midwest to provide direct turning movements in all directions. The Recommended Alternative will replace the entire existing interchange with a new interchange consisting of a completely different ramp configuration. This will result in the removal of all existing pavement and structures and construction of a new interchange in the same location. This complete removal and replacement will result in an adverse effect.

United Sound Systems Recording Studio

The United Sound Systems Recording Studio was founded in 1933 and moved to the building at the corner of Second Street and the I-94 service drive. This studio was Detroit's first major recording studio and produced recordings by Miles Davis, Charlie Parker, John Lee Hooker, Jackie Wilson, and Smokey Robinson and the Miracles. The redesign of the I-94/M-10 interchange, using current standards, results in a shift of the mainline of the freeway to the north causing the off-ramp from westbound I-94 to M-10 to traverse the area currently occupied by the United Sound Systems Recording Studio building. In order to construct the ramp at this location, the United Sound Systems Recording Studio building will have to be acquired and removed. The removal of the building will be an adverse effect.

Square D/Detroit Fuse and Manufacturing Company Building

The Square D/Detroit Fuse and Manufacturing Company Building is located on the northeast quadrant of the I-94 and I-75 interchange. The building is bordered by Piquette, Harper, Rivard, and Russell. The original, three-story Detroit Fuse and Manufacturing Company Building, designed by the architect Albert Kahn, was built in 1909 of reinforced concrete. The Detroit Fuse and Manufacturing Company was a pioneer in the development and manufacture of enclosed electrical safety switches. In 1917, the company changed its name to Square D and grew to become one of the largest suppliers of electrical supplies in the United States. The success of the company did not preclude a 107-day strike by roughly 1,200 United Electrical Workers-member employees of Square D in 1954, which erupted in violence and filled Detroit newspapers for several weeks. The Square D/Detroit Fuse and Manufacturing Company Building is significant for its historical associations with both Square D and the 1954 strike. Demolition of the Square D/Detroit Fuse and Manufacturing Company Building will be an adverse effect.

Avoidance Alternatives

Alternate locations for the proposed action that would avoid the taking of the historic structures were considered and were found not practical because the project involves the reconstruction of an existing roadway with minimal need for additional rights-of-way. Other locations outside the immediate area would not provide necessary system connections and would require significant new rights-of-way and have additional impacts. The only alternatives under consideration are variations in cross-section and interchange design on the existing alignment. Due to the proximity of the I-96, M-10, and I-75 interchanges, ramp locations are tightly controlled. Ramp configurations that would avoid the three buildings are not possible without incurring other

historic impacts. The ramp affecting the house at 5287 Hecla is the most direct access to Wayne State University from eastbound I-94. The location of the ramp is controlled by ramps to and from I-94 and I-96. The location of the ramp affecting the United Sound Systems Recording Studio is controlled by ramps to and from I-94 and I-75. Moving the roadway south to avoid the studio affects the Cass Motor Sales building, another National Register of Historic Places site. The Square D/Detroit Fuse and Manufacturing Company Building is in the northeast quadrant of the I-75/I-94 interchange. Any shifting of the freeway to miss the Square D/Detroit Fuse and Manufacturing Company Building will impact the Piquette Avenue Industrial Historic District and other potential historic factories in the Milwaukee Junction area.

Measures to Minimize Harm

The Federal Highway Administration and the State Historic Preservation Officer have entered into a Memorandum of Agreement (MOA) regarding the adverse effects on, and mitigation of impacts to, the historic properties described above. A copy of the MOA is included in FEIS Appendix E.

5.15 Energy

Section 5.12 of the DEIS remains valid. The additional capacity provided by the Recommended Alternative will accommodate the projected 35 percent increase in the number of miles traveled by vehicles using I-94 in the project area. If other factors remain the same, the additional miles traveled will result in an increase in transportation energy usage. The increase in the number of vehicle miles traveled on I-94 in the project area and the associated energy use is small when compared to the total number of vehicle miles traveled in the Detroit metropolitan area. According to the SEMCOG *2025 Regional Transportation Plan for Southeast Michigan* (June 2000), the total vehicle miles traveled in the Detroit area is expected to rise by 11.4 percent by 2025. The I-94 project will contribute about 2 percent of the expected area-wide increase.

The Recommended Alternative also might reduce congestion by allowing 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 traveled out of their intended route to avoid a congested I-94, will now be allowed to stay on route on an improved I-94. This could result in some reduction in the number of vehicle miles traveled.

The overall effect of the Recommended Alternative on transportation energy usage is expected to be limited.

5.16 Utilities

The discussion of utilities in Section 5.13 of the DEIS remains valid.

The Recommended Alternative (RA) requires less additional right-of-way than the DEIS Build Alternative, and as a result, will disturb fewer existing utilities. The Recommended Alternative will allow several existing service drive segments east of I-75 to remain in place. Since these service drives will not be relocated, any utilities located along them also will be allowed to remain in place and undisturbed. The result is a reduced impact on existing utility services compared to the impacts created by the DEIS Build Alternative. The Recommended Alternative would require the relocation of one utility substation.

5.17 Construction Impacts

The discussion of construction impacts in the DEIS remains valid. Some additional information is included in the FEIS to more specifically describe impacts resulting from the Recommended Alternative. Areas addressed include:

- Aesthetics;
- Cultural Resources;
- Contaminated Properties;
- Groundwater and Surface Water Quality;
- Maintenance of Traffic Flow and Emergency Services;
- Air Quality;
- Noise;
- Indirect and Cumulative Effects; and
- Environmental Justice.

Three construction phasing options for the project are also presented and include:

- Maintain both directions of travel on one side of the freeway with two lanes in each direction;
- Keep one direction of travel on I-94 open and detour traffic to other state facilities in the other direction; or
- Close sections of I-94 in both directions and detour traffic to other state facilities.

5.18 Indirect Impacts

Indirect effects are those caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable. A number of indirect effects would result from the Recommended Alternative. Many of these effects are expected to occur as a result of the infrastructure improvements associated with the proposed project including: improved efficiency of I-94, increased capacity on the mainline and service drives, and enhanced access to and from the local street system.

Land-Use. An analysis of the proposed improvements and their potential effect on land-use change was completed along the project corridor and established the highest potential for change to occur from the westerly extent of the study area (established for the Indirect and Cumulative Effects analysis) to I-75. New service drives in the area combined with relatively large amounts of vacant land and supporting zoning and future land-use recommendations should provide increased opportunity for development. Remaining areas of both moderate and low potential for land-use change were also identified along the I-94 corridor. Many of the other indirect effects discussed follow from these infrastructure improvements and subsequent land use changes.

Social and Economic Effects. Land-use changes are an impetus to other effects, such as social and economic changes. A slight increase in population and demographic shifts along the corridor might occur if the Recommended Alternative results in rehabilitation of existing

residential areas, building new housing on vacant land, and expanding local commercial activities. New housing would encourage an increase in owner-occupancy and bring residents with a more diverse range of racial and economic backgrounds into some nearby neighborhoods. Improved housing conditions would result in higher property values in the affected neighborhood and perhaps in adjacent neighborhoods.

Total project costs for right-of-way, design, and construction of the Recommended Alternative are approximately \$1.2 billion (2004). There would be a positive benefit to the local economy resulting from the indirect effects of expenditures associated with the purchase of goods and services, and in local workforce demands throughout the extended period of project construction.

With improved access in the project area, an increase in local business activity would be expected for the concentration of businesses along major arterials such as Grand River, Livernois, Woodward, Gratiot and Van Dyke avenues, and Mt. Elliott Street. Increased patronage from area residents would result from better vehicle and pedestrian access due to continuous service drives with sidewalks and improved pedestrian connections across I-94 along sidewalks on bridges.

Other Indirect Effects. Positive indirect effects are expected with regard to community facilities and services, mobility and pedestrian and bicyclists' mobility, and neighborhood character and cohesion. Environmental justice benefits might occur indirectly where housing, business and job opportunities increase. Potential job growth may be expected during project-related construction. No indirect effects to air quality are expected, while water quality would indirectly benefit from the new underground drainage system with catch basins, in-line detention, and oil/water separators. Highway maintenance operations could also improve water quality with pavement sweeping, trash collection, and catch basin cleaning.

Adverse indirect effects are also expected as a result of the Recommended Alternative. Environmental justice concerns would likely occur with respect to pedestrian safety and business activity during construction, while disruptions to local and mainline traffic may result depending on the extent and duration of the selected construction option. Cultural resources might be affected indirectly as new, more contemporary, development occurs near existing historic districts or properties. Some increases in surface water runoff (from increased development) and pollutant loads (from increased development and traffic volumes) would result. Water quality would indirectly benefit from the new underground drainage system and engineering controls, including catch basins, in-line detention, oil/water separators and filter strips. Indirect effects from noise are possible, if the added noise and traffic cause homeowners to move away from the area. Any homeowners that move could be replaced by rental property and/or commercial development along the improved service drives.

5.19 Cumulative Impacts

Cumulative effects are accumulations of actions that have occurred over time; cumulative effects include all direct and indirect effects, actions that have occurred in the past, and any reasonably foreseeable actions. Cumulative effects are expected to occur as a result of the Recommended Alternative and other major actions that have occurred, or are expected to occur in the future. A number of important past and present projects have shaped and influenced the project area, including the original construction of I-94 in the early 1950s. In addition, a number of studies

for future projects also have been considered. The analysis of cumulative effects of all these actions concluded that land use in the study area will experience the greatest change.

Land use represents considerable potential for cumulative change with primarily a positive effect. The decline in Detroit's population and housing over the past several decades has impacted the urban core with population losses of nearly 77,000 (7.5 percent), 34,900 fewer housing units, and an approximate 4,600-acre increase in vacant land—this occurring most recently from 1990 to 2000. The investment in infrastructure associated with the Recommended Alternative when combined with other transportation, residential, recreation and civic projects should help revitalize this urban area. A number of past, present, and reasonably foreseeable future actions (projects of industrial, residential, commercial, civic/cultural, recreational, and transportation) were identified in the assessment of cumulative effects (refer to the FEIS Section 5.15.3 and Figure 5-13).

The density of industrial, residential, and commercial land uses should increase over time as vacant land redevelops in response to construction of the Recommended Alternative and other actions that are proposed or which might occur in the future. Shifts in, and improvements to, current land-use patterns as vacant or underutilized lands are redeveloped would, in turn, positively affect the socioeconomic environment. The economy, in particular, should benefit from a greater density of business and residential development. Improved employment opportunities and an expanded tax base should result, thus improving the quality of life for residents. Cumulative impacts to water quality in the project area are anticipated to be minimal because of the relatively developed urban nature of the area immediately surrounding the Recommended Alternative. The water quality would benefit from the new underground drainage system and engineering controls, including catch basins, in-line detention, oil/water separators and filter strips. Therefore, the overall cumulative effect on water quality is expected to be positive.

Projected population decline would begin to reverse as local economic conditions improve and the area becomes more attractive to live and work. Employment and incomes would rise, improving residents' potential buying power. This is particularly important because median household income and per capita income in the immediate project vicinity is notably lower when compared to the city of Detroit, Wayne County, and the state of Michigan. Continued growth and diversification of the local economy would reduce the area's vulnerability to economic downturns. Quality of life for residents in the immediate project area would be expected to improve over time.

6.0 Public Participation and Agency Coordination

The comprehensive public participation and agency coordination process initiated by the Michigan Department of Transportation (MDOT) at the beginning of the project in December 1994, and as described in the DEIS (Sections 3.2 and Chapter 8), continued through the development of the FEIS. A summary of the process follows:

- Informational meetings, surveys, meeting notices, and flyers.
- A project office was available from 1994 through 2001 to provide public access to information on the study.
- As noted in Section 8.1.1 of the DEIS, the Citizens Advisory Committee (CAC) was established early in the project development and was composed of representatives from

special interest groups, block clubs, community organizations, school district administration, business and institutional groups. This group helped shape the alternatives being evaluated and expressed concerns.

- In addition to the eight public information meetings noted in Section 8.1.2 of the DEIS, four additional meetings were held after publication of the DEIS. The feedback from the public meetings helped develop the Recommended Alternative.
- Section 8.1.3 of the DEIS noted that approximately 100 meetings were held with requesting groups, including: local institutions, business associations, neighborhood councils, churches, and other local organizations. This outreach effort to local groups was continued after publication of the DEIS. This interaction raised issues and concerns and helped determine the Recommended Alternative.
- A Citizens Impact Survey and focus group studies were conducted during the DEIS phase. This provided feedback on the alternatives considered.
- The FEIS, the DEIS, other project information, and opportunity for citizens to e-mail comments will continue to be available on the project Web site through completion of the Record of Decision (ROD).
- As described in Section 8.2.1 of the DEIS, the Interagency Coordination Committee (ICC) was established as a steering committee for the I-94 project. Four additional ICC meetings were held following the publication of the DEIS. These meetings were instrumental in providing issues, coordination and feedback on the development of the Recommended Alternative.
- As noted in Section 8.2.2 of the DEIS, numerous meetings were conducted since December 1994 with public officials, agency representatives, churches, community groups, neighborhood clusters, private companies, and block groups to discuss project issues relevant to specific areas of interest and jurisdiction. Collaboration with public officials and agency representatives was an integral part of the selection of the Recommended Alternative and preparation of the FEIS.
- Following publication of the DEIS, the MDOT held four community workshops as part of the public involvement program for the project. This helped continue to develop the Recommended Alternative.

Overview of Response to DEIS

Public hearings were held on March 5-6, 2001, at the African American Museum and Wayne County Community College. Public information meetings were held on October 21-22, 2003, at the same venues. Seven-hundred and thirty-four (734) comments were received on the DEIS. Comments were received from three federal agencies, one U.S. Congressman, three city of Detroit municipal agencies, the city of Ferndale, the Wayne County Department of Public Services and 13 additional organizations, including five comments from private businesses. More than 700 comments were received from the general public. The comments provided by the following governmental agencies and the individual responses to these comments are presented in the FEIS Chapter 8:

- Letter 1: United States Department of Agriculture;

- Letter 2: United States Department of Interior;
- Letter 3: United States Environmental Protection Agency (U.S. EPA);
- Letter 4: Southeast Michigan Council of Governments (SEMCOG);
- Letter 5: City of Detroit, Department of Planning and Development;
- Letter 6: City of Detroit, Department of Public Works;
- Letter 7: City of Detroit, City Planning Commission;
- Letter 8: City of Ferndale;
- Letter 9: United States Congressman John Conyers Jr., Detroit; and
- Letter 10: Wayne County, Department of Public Services.

A general summary of all comments received on the DEIS is also presented in FEIS Chapter 8, with responses to major areas of concern. Original copies of all agency, general public (including oral testimony from the public hearings), and special-interest correspondence can be reviewed at the locations listed in FEIS Section 8.4. In these locations, the package available for review contains a complete set of the comments received on the DEIS, a summary of all comments, and all written responses documented in the current chapter.

7.0 Re-Evaluation

Since the DEIS was circulated over three years ago, it is necessary to re-evaluate the DEIS and determine if a supplement to the DEIS or a new DEIS is needed. A re-evaluation letter was submitted in October, 2004, and documented in a letter from the MDOT to the FHWA. The letter outlined the changes that have taken place since the DEIS was circulated and concluded that no substantive changes have taken place that would require a supplement to the DEIS or a new DEIS. No substantive changes have occurred in the affected environment, no additional significant impacts have been identified, and no additional alternatives have been added. FHWA concurred in November 2004 on the determination that the preparation and circulation of this Final EIS is appropriate. Refer to FEIS Appendix K for the re-evaluation letter.