
EXECUTIVE SUMMARY

Description of the Proposed Project

The proposed US-31 improvements are located in Berrien County in Southwest Michigan. The study area is located in Benton Charter Township, east of Benton Harbor, and is roughly bounded by I-94 to the north and west, Napier Avenue to the south, and Blue Creek Road to the east; potential freeway ramp connections extend north and west of I-94. The study area and **Practical Alternatives Foldout Map** at the back of the document (**Appendix F**) can be folded out for reference during review of this document.

The US-31 freeway project in Berrien County has been under development for over 30 years. The objective has been to provide a freeway connection from the I-80/90 toll road in Indiana to the US-31/I-196 connection at I-94 (**Figure I**). Construction of the 18.4 mile US-31 freeway was approved in a 1981 Final Environmental Impact Statement (FEIS); details of the 1981 FEIS can be found in **Section 1.0 Summary of the 1981 FEIS**. Construction has been ongoing from south to north and was completed to Napier Avenue in 2003.

In 2002 a Draft Supplemental Environmental Impact Statement (DSEIS) was prepared as an update to the 1981 FEIS for approximately four miles of the approved US-31 freeway alignment between Napier Avenue and I-94. Since approval of the 1981 FEIS, the Blue Creek Fen, crossed by this alignment north of Napier Avenue, has been identified as a unique resource. The fen provides habitat to many unique species including the Mitchell's satyr butterfly that was listed as a federally endangered species subsequent to the 1981 FEIS. A 1994 Biological Opinion paper issued by the US Fish and Wildlife Service (USFWS) provides a detailed analysis of the Mitchell's satyr butterfly. The USFWS summary correspondence is included in **Appendix A.5**. Design measures including lengthening of the proposed structures over the Blue Creek Fen were identified as a means of avoiding impacts to the Mitchell's satyr habitat.

The Michigan Department of Transportation (MDOT) concluded that there was a potential for significant reductions in construction costs and environmental impacts if the final segment of the freeway is realigned to avoid the Blue Creek Fen. As a result, the 2002 DSEIS compared the costs and impacts of alternatives that avoided the Blue Creek Fen to those of a No-Build Alternative and the alignment approved in the 1981 FEIS. Analysis of the DSEIS alternatives led to the identification of a Preferred Alternative that provided a western connection of the US-31 freeway to I-94 south of the existing I-94/BL-94 interchange.

This Condensed Final Supplemental Environmental Impact Statement (FSEIS) takes into account recommendations made in the previously published DSEIS, the October 2002 public hearing comments, and federal, state, and local agency comments. Comments were taken into account in the development and refinement of the Recommended Alternative which was previously identified as Preferred Alternative PA-2 in the DSEIS. This FSEIS evaluates the impacts of Recommended Alternative PA-2 which avoids the Blue Creek Fen and connects US-31 to I-94 west of the fen. Impacts and costs of the Recommended Alternative are compared with those alternatives previously identified in the DSEIS.

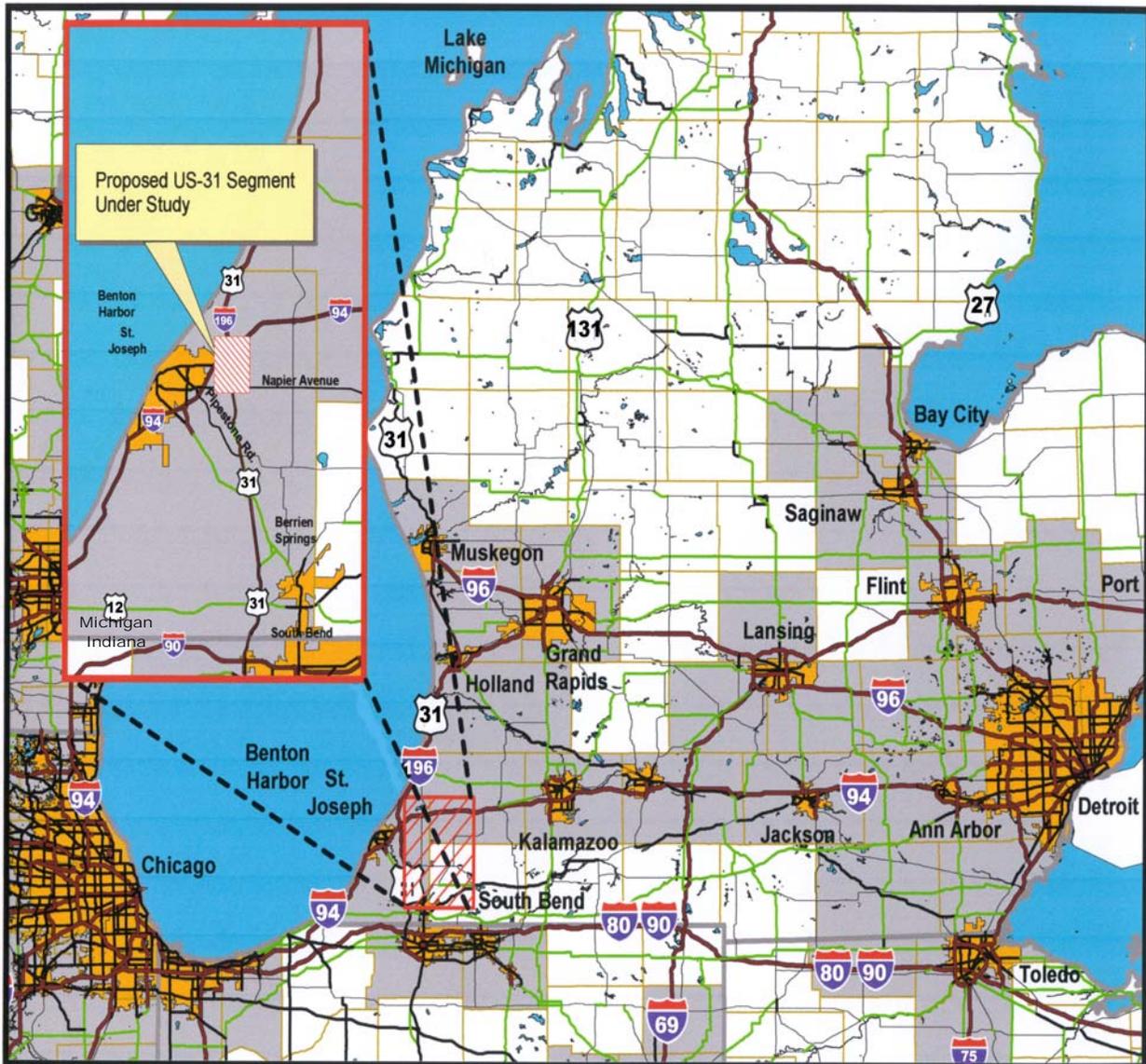


Figure I Southern Michigan Freeway System

Purpose of and Need for the Proposed Action

The primary purpose of the proposed project is to achieve a US-31 freeway system linkage to I-94 and a US-31 freeway system connection to the existing US-31 freeway at the north and south termini of the study area. This project seeks to provide a free flow freeway traffic movement through the completion of the limited access US-31 freeway from Napier Avenue to I-94 in Berrien County. This complies with the purpose of the 1981 FEIS Recommended Alternative of constructing a freeway to address system deficiencies of existing US-31. The 1981 FEIS provided a freeway connection to the east/west I-94 freeway and the north/south I-196/US-31 freeway north of I-94, as does Recommended Alternative PA-2 for this project. This FSEIS evaluates alternatives that achieve the primary purpose of this study while meeting the following criteria:

- Minimize impacts to the surrounding environment;
- Reduce construction costs from those estimated for the 1981 FEIS alignment;

- Improve the efficiency of north-south vehicular travel and the movement of goods and services throughout the entire US-31 corridor;
- Improve local access within Berrien County by providing greater accessibility between the rural southern and more urbanized northern portions of the county;
- Provide transportation improvements that are supportive of other economic development efforts within the Benton Harbor area.

The need for completing the US-31 freeway to I-94 is supported by several factors including:

- System connectivity and linkage;
- Relief of traffic congestion on Napier Avenue that would exist under No-Build conditions;
- The need for improved access to I-94 and Business Loop I-94 (BL-94) to assist economic development initiatives in the economically depressed Benton Harbor area;
- The inadequacy of local roads to provide adequate capacity and a free flow movement for traffic desiring to access I-94, I-196/US-31 north, and BL-94 from the existing US-31 freeway;
- The inability of alternative modes of transportation to meet through traffic and commercial travel demands.

Section 2.0 Purpose of and Need for the Proposed Action, discusses the Purpose of and Need for the completion of the US-31 freeway in detail.

Alternatives

Within this FSEIS, four Practical Alternatives are discussed along with the No-Build scenario, including:

- PA-1, Transportation System Management (TSM) improvements including improvement of select I-94 and existing US-31 freeway ramps.
- Recommended Alternative PA-2, and PA-3, two alternate connections of the US-31 freeway to I-94 in the vicinity of the existing Benton Harbor Business Loop I-94 (BL-94).
- PA-4, the original 1981 FEIS alignment.

These alternatives are described in detail in **Section 3.0 Alternatives Considered**. Through a comparison of the costs, engineering issues, social, economic, and environmental impacts, traffic operations, and public and agency comments, PA-2 has been identified as the Recommended Alternative. Recommended Alternative PA-2 has a lower cost and fewer environmental impacts than the original 1981 FEIS alignment (PA-4). Recommended Alternative PA-2 requires fewer relocations, has less community impacts, less difficulty maintaining traffic during construction, and has a lower cost than the other western connection, PA-3. Recommended Alternative PA-2 also best meets the Purpose of and Need for the project.

No-Build

The No-Build Alternative would end the US-31 freeway at Napier Avenue. Traffic would use Napier Avenue to connect to I-94 and use I-94 to reach I-196/US-31 north. This alternative would result in no additional US-31 construction or right-of-way costs. Traffic projections indicate that the No-Build Alternative would result in a diminished level-of-service and heavy congestion at some locations. As the No-Build Alternative does not provide a free flow traffic

movement for vehicles using US-31 and does not provide a US-31 freeway-to-freeway connection, it does not meet the primary purpose of and need for the project. The No-Build Alternative does include construction of the missing eastbound I-94 to westbound BL-94 movement as a loop ramp within the existing right-of-way. No-Build total project costs are estimated to be \$1.9 million (2005 dollars).

Practical Alternative One (PA-1)

PA-1 involves low cost Transportation System Management (TSM) improvements. Like the No-Build Alternative, the US-31 freeway would end at Napier Avenue and traffic would use the existing five-lane Napier Avenue to access I-94. PA-1 would involve minor upgrades to and around the Napier Avenue interchanges, including improvements to the existing eastbound I-94 and the southbound US-31 on ramps, and dedicated right-turn lanes on Napier Avenue at both interchanges. PA-1 would also include lengthening the I-94 westbound deceleration lanes to northbound I-196 and westbound BL-94. The missing eastbound I-94 to westbound BL-94 movement would also be constructed as a loop ramp within existing right-of-way at the existing I-94/BL-94 interchange. PA-1 is projected to result in significant traffic congestion on Napier Avenue by 2025, including traffic backups and delay at the I-94/Napier Avenue interchange. As PA-1 does not achieve free flow freeway system connectivity and a freeway linkage to I-94 for US-31 traffic, it does not meet the primary purpose of and need for the project. PA-1 improvements are forecasted to cost less than \$5 million (2005 dollars).

Recommended Alternative PA-2

Recommended Alternative PA-2 proposes a US-31 freeway connection to I-94 just south of the existing I-94/BL-94 interchange. The BL-94 interchange would be reconstructed as a full access interchange to include all movements between US-31 and I-94. Recommended Alternative PA-2 would reduce the congestion problems forecasted with a No-Build Alternative and achieve free flow system connectivity between US-31, I-94, BL-94, and I-196/US-31 to the north. Auxiliary lanes are proposed on I-94 between the proposed US-31 interchange with I-94/BL-94 and the existing I-94/I-196/US-31 interchange. These lanes will allow through traffic on US-31 to remain in the auxiliary lane provided with no required merge onto I-94. As a result, safety and level-of-service along I-94 will not be compromised. Recommended Alternative PA-2 is forecasted to have a total project cost of \$80.1 million (2005 dollars).

Practical Alternative Three (PA-3)

PA-3 would result in a US-31 freeway connection to I-94 at the existing I-94/BL-94 interchange. PA-3 is similar to the Recommended Alternative, but is located slightly further north. PA-3 would involve the reconstruction of the I-94/BL-94 interchange to include the missing eastbound I-94 to westbound BL-94 movement. Like the Recommended Alternative, PA-3 also achieves free flow system connectivity between US-31, I-94, BL-94, and I-196/US-31 north of I-94. PA-3 would also feature auxiliary lanes on I-94 between the proposed US-31 interchange with I-94/BL-94 and the existing I-94/I-196/US-31 interchange. As with Recommended Alternative PA-2, these lanes allow through traffic on US-31 to remain in the auxiliary lanes and not merge onto I-94 so that safety and level-of-service along I-94 would not be compromised. PA-3 is more costly than the Recommended Alternative and the closer proximity of the PA-3 interchange with I-94 to the existing I-94/I-196/US-31 interchange makes the traffic operations less desirable than those for Recommended Alternative PA-2. PA-3 reduces the merge distance for northbound US-31 traffic entering I-94 by 1,800 feet and requires the northbound US-31 exit ramp to eastbound I-94 to be located on a horizontal curve. Construction staging for

PA-3 would be much less efficient than for Recommended Alternative PA-2 due to the location of the PA-3 US-31/I-94 connection that is in approximately the same location as the existing I-94/BL-94 interchange. To maintain the existing BL-94/I-94 access, complex detours or temporary ramps would be required to maintain traffic during the construction of ramps A, D, E and H (**Figure 3.7**) of the proposed US-31 interchange with I-94/BL-94; resulting in increased costs and/or user delays. PA-3 also impacts the Butler-East Euclid Subdivision, which is identified as a low-income residential area. PA-3 is forecasted to have a total project cost of \$85.7 million (2005 dollars).

Practical Alternative Four (PA-4)

PA-4 is the alignment selected in the 1981 FEIS with minor modifications. PA-4 would connect the US-31 freeway to I-94 at the I-196/US-31 interchange. The missing eastbound I-94 to westbound BL-94 movement would also be constructed at the I-94/BL-94 interchange. PA-4 achieves free flow system connectivity between the existing US-31 freeway segments north and south of the study area and a freeway linkage to I-94 and I-196/US-31. PA-4 would cross Blue Creek, Yellow Creek, and the environmentally sensitive Blue Creek Fen on two structures (northbound and southbound). Each structure would be comprised of two approximately 175-foot approach structures and a 350-foot clear center span to avoid disturbance of the sensitive Blue Creek Fen. PA-4 would also involve the addition of auxiliary lanes between the existing I-94/BL-94 interchange and the reconstructed I-94/I-196/US-31 interchange in place of the previously proposed collector/distributor roads on I-94. PA-4 is forecasted to have a total project cost of \$104 million (2005 dollars).

Selection of the Recommended Alternative

After an analysis of all Practical Alternatives, the No-Build Alternative and PA-1 were dropped from consideration as the Recommended Alternative because they failed to achieve the primary purpose of the project, to provide a US-31 freeway connection between the existing US-31 termini north and south of the study area and a freeway system linkage to I-94. PA-3 was not selected as the Recommended Alternative because it had greater overall community impacts, higher construction costs, and less favorable engineering geometrics than PA-2. PA-4 was not selected as the Recommended Alternative because it would result in severe impacts to the environmentally sensitive Blue Creek Fen and did not significantly reduce environmental impacts or costs compared to the 1981 FEIS alignment, part of the purpose of the project.

Impacts

The following is a summary of the impacts evaluated for each of the Build Alternatives in relation to the No-Build Alternative. Proposed mitigation is briefly discussed where appropriate. A more detailed discussion of the impacts of Recommended Alternative PA-2 is contained in **Section 5.0 Environmental Consequences**. A summary of impacts for the Practical Build Alternatives is contained in **Table I** of this section.

Land Use, Farmland, and Socioeconomics

The No-Build and PA-1 alternatives would not require relocations. Recommended Alternative PA-2 would require 14 residential relocations while PA-3 would require 26. PA-4 would require one relocation in addition to those already acquired as a result of the 1981 FEIS. No commercial relocations are required for any alternative. PA-3 would require the relocation of

one church. No community facilities are relocated for any other alternative. Land use impacts will be similar for all of the Build Alternatives as the vast majority of impacted land is rural. The No-Build Alternative would require no new right-of-way while PA-1 would require only minor right-of-way purchases for grading and drainage associated with ramp widening or turn lanes.

The No-Build and PA-1 alternatives have no farmland impacts. The number of farmland parcels impacted by the Build Alternatives ranges from 16 for PA-4 to 54 for PA-3. Recommended Alternative PA-2 impacts 46 farm parcels.

The study area is located within the economically depressed Benton Harbor area. A completed US-31 freeway (PA-2, PA-3, and PA-4) would provide economic benefits to freight haulers and travelers due to reduced travel times. Alternatives that connect to I-94 at BL-94 (PA-2 and PA-3) are expected to assist economic development efforts in the Benton Harbor area through enhanced access to facilities like the Southwest Michigan Regional Airport, the Benton Harbor Fruit Market wholesale distribution center, and tax advantaged Renaissance Zones that have been designated by the State of Michigan to encourage development and redevelopment efforts within the Benton Harbor area. None of the alternatives are expected to encourage widespread new development within the study area as no new local interchange access is being created.

Environmental Justice

The only alternative that may cause disproportionately high and adverse impacts on minorities or low-income populations are associated with the proposed westbound I-94 exit ramp to BL-94 for PA-3. Alternative PA-3 would require the relocation of nine residences and the Calvary Lighthouse Church in the Butler-East Euclid Subdivision. This subdivision contains households with incomes below the state and county averages. No disproportionately high or adverse impacts on minority populations were identified in the project area. Recommended Alternative PA-2 also connects to BL-94 but does not impact the subdivision and shifts the exit ramp further from the residents.

Air Quality

Negligible air quality impacts would result from the implementation of either a No-Build or Build Alternative. The study area corridor is located within the Benton Harbor Metropolitan Statistical Area for air quality, and the project is included in the fiscal year 2003 Transportation Improvement Program (TIP) as part of the Twin Cities Area Transportation Study (TwinCATS). The US Environmental Protection Agency (EPA) published a final rule, "Correction of Designation of Nonclassified Ozone Nonattainment Area", in the Federal Register for February 14, 1996 (Volume 61 Number 31) stating that effective March 15, 1996 this area's air quality designation was corrected to "Unclassifiable Attainment" and is now considered a Maintenance Area. Based upon the results of a worst-case carbon monoxide (CO) analysis, all CO concentrations are forecasted to be below the National Ambient Air Quality Standards (NAAQS) through the 2025 design year. Continued compliance with all current NAAQS standards is expected.

Noise

Local residences and other noise sensitive receptors (churches, schools, etc.) were monitored and the potential noise impacts of the alternatives modeled. Forecasted No-Build and PA-1 noise levels within the study area range from 48 to 75 decibels. Nineteen noise sensitive receptors for the No-Build and PA-1 alternatives would be exposed to noise levels ranging from

66 to 75 decibels. These peak hour noise levels approach or exceed the FHWA Noise Abatement Criterion of 67 decibels. Recommended Alternative PA-2 is forecasted to have noise impacts to 24 noise sensitive receptors and PA-3 is forecasted to impact 17. PA-4 is forecasted to have noise impacts to 33 receptors. FHWA and MDOT define traffic noise impacts to occur if the loudest hour noise level within the project approaches or exceeds the FHWA Noise Abatement Criteria of 67 dBA or there is an increase in noise level of ten or more decibels over existing noise. Therefore, an $L_{eq(1h)}$ of 66 dBA is considered a noise impact requiring the evaluation of noise abatement measures. Noise barriers were viewed as the primary mitigation measure available to offset noise impacts. Noise abatement measures are implemented according to MDOT guidelines and must be feasible and reasonable. Construction of noise barriers was analyzed for each Build Alternative and found not to meet the MDOT criteria of reasonability.

Ecological Resources

Water Quality and Aquatic Communities

The No-Build Alternative would not cause any construction-related impacts. However, predicted traffic increases may concentrate contaminated runoff along Napier Avenue. Water quality issues resulting from improvements to the I-94 crossing of Blue Creek will have to be addressed for PA-2, PA-3, and PA-4. As a part of final design, site specific drainage plans along with a variety of sedimentation control measures will be implemented to reduce the potential for the transfer of pollutants and sediments into streams and drains. Blue Creek has an acceptable community fish rating as defined by the Great Lakes Environmental Assessment Section, Procedure 51, and is a designated trout stream. Mitigation measures to regulate the level of discharge into Blue Creek and avoid an increase in sedimentation will help to minimize impacts on aquatic resources. PA-4 has the greatest potential for water quality impacts due to new crossings of the Blue and Yellow Creeks and the Blue Creek Fen, and the need for extension of the existing Blue Creek box culvert for the addition of auxiliary lanes on I-94. For PA-4, I-94 must be widened to the outside to avoid the costly reconstruction of the I-94/BL-94 interchange. Interchange configurations for Recommended Alternative PA-2 and for PA-3 permit widening of I-94 into the existing median and avoid the need for extension of this culvert.

Wetlands

The No-Build and PA-1 alternatives would have 0.3 acres of direct impacts to one wetland complex. Recommended Alternative PA-2 would impact 17 wetland complexes with 12.2 acres of impact; PA-3 would impact 21 wetland complexes with a total impact of 10.8 acres, while PA-4 would impact 33 complexes and 29.9 acres. Proposed mitigation for Recommended Alternative PA-2 includes 222.5 acres of wetland preservation (22.25 acres of preservation credit at a 10:1 ratio) located in three established fen complexes. A revised mitigation plan for Recommended Alternative PA-2 is found in **Section 5.12 Wetland Impacts** of **Section 5.0 Environmental Consequences**.

Wild and Scenic Rivers, Natural Rivers, Coastal Barriers / Critical Dunes, and Coastal Zones

No Wild and Scenic or state designated Natural Rivers would be impacted by the US-31 alternatives. The project area does not include any Coastal Barriers, Critical Dunes, or Coastal Zone management areas.

Threatened and Endangered Species

The No-Build and PA-1 alternatives would pose no threat to any state or federally listed threatened, endangered, special concern, or candidate species. The Eastern box turtle, a state species of special concern, was observed in wetland complexes in the northern part of the study area but is not directly impacted by Recommended Alternative PA-2 or PA-3. Each of these alternatives impacts one site with moderate potential habitat for the federally endangered Indiana bat. PA-4 has the most potential to impact threatened and endangered species. In this and past studies, the federally listed endangered Mitchell's satyr butterfly, the Eastern box turtle, and other listed species have all been observed within the sensitive habitat of the Blue Creek Fen which is crossed by PA-4. PA-4 also impacts one site with moderate potential habitat for the federally endangered Indiana bat.

Natural Areas

PA-4 impacts the Blue Creek Fen area, which contains unique environmentally sensitive habitat.

Cultural Resources

Reconnaissance surveys and coordination with the Michigan State Historic Preservation Office (SHPO) have concluded that there are no above-ground or archaeological sites eligible for the National Register of Historic Places (NRHP) within the Area of Potential Effect (APE) for Recommended Alternative PA-2. The No-Build, PA-1, and PA-3 alternatives would also have no impacts on cultural resource sites. PA-4 would potentially impact a single property that has been determined to be eligible for inclusion on the NRHP.

Aesthetic and Visual Character

The No-Build Alternative and PA-1 would have little visual impact on the rural areas within the project corridor. During construction, any of the Build Alternatives will have short-term visual impacts due to the presence of large construction equipment. Each of the freeway Build Alternatives (PA-2, PA-3, and PA-4) would impact the view for some rural residents through the introduction of the new freeway.

Potential Contaminated Sites

Several Recognized Environmental Conditions (RECs) were identified in connection with the Build Alternatives including private disposal areas and mounded soil indicating potential dumping. Removal of debris and environmental sampling are among the mitigation measures that will be undertaken to ensure that RECs connected with Recommended Alternative PA-2 are addressed in conjunction with right-of-way acquisition.

Section 4(f) and 6(f) Evaluations

Recommended Alternative PA-2 would not impact any potential 4(f) or 6(f) properties. Only PA-4 has the potential of impacting a property determined eligible for the National Register of Historic Places.

None of the proposed alternatives affect any existing or proposed public parks, recreation sites, or wildlife refuges. There are no recreation or public lands within the study area that have been

acquired or developed with Land and Water Conservation Funds. Therefore, there are no impacts to properties requiring a Section 6(f) evaluation.

Summary of Impacts

Table I provides a summary of impacts and costs associated with the construction of each of the alternatives (PA-1 through PA-4).

Public Involvement

An extensive public involvement process was undertaken to obtain public input, determine local concerns, and to better identify potential social, economic, and environmental impacts. Public involvement was taken into account in developing and refining alternatives to best minimize impacts. Two public meetings and a formal public hearing were held and several other meetings with smaller groups were also organized. Newspapers, a project Web site, a toll-free phone number, and newsletters were also used to provide information about the project. Public and agency involvement and comments were key components in the development of this FSEIS. A full discussion of public involvement and agency coordination including agency comments on the Draft Supplemental Environmental Impact Statement (DSEIS) and MDOT responses to comments appear in **Section 6.0 Public Involvement and Agency Coordination**.

Mitigation

Comprehensive mitigation plans are found throughout **Section 5.0 Environmental Consequences** of this FSEIS and on the mitigation “Green Sheet” found at the beginning of **Section 5.24 Mitigation Summary**.

Key Updates to this Final Supplemental Environmental Impact Statement (FSEIS)

Due to the advantages of PA-2 compared to the other Practical Alternatives, PA-2 was identified as the Preferred Alternative in the DSEIS and as the Recommended Alternative in this FSEIS.

Agency comments from review of the DSEIS (**Appendix E.4**) concurred with the selection of PA-2 as the Preferred Alternative, but requested that wetland impacts be minimized where possible. As a result, loop ramps F and G of the I-94/BL-94/US-31 interchange were reconfigured to provide tighter radii and the adjoining ramps B and C on the south side of the interchange were pulled in to reduce the overall footprint (**Figure 3.5**). This new design resulted in a 7.6% (one acre) total reduction in wetland impacts and 16.4% total reduction in high quality wetlands. Wetland complexes 23 and 24 experienced the greatest benefit from the new design, with a 50% reduction of impacts to complex 23 and complete avoidance of previously impacted complex 24.

Wetland impacts associated with the PA-2 alternative as proposed in the DSEIS required the creation of wetlands to satisfy mitigation requirements. MDOT proposes in this FSEIS to mitigate wetland impacts by preserving 222.5 acres of high quality wetlands (22.25 acres of preservation credit at a 10:1 ratio) located within three fen complexes: the Blue Creek Fen located in the Paw Paw River sub-watershed (18.5 acres), the Tamarack Fen located off site in

the St. Joseph River watershed (118 acres), and the Liberty Fen located off site in the Grand River watershed (86 acres). These fens were originally purchased to satisfy the wetland and endangered species mitigation requirements of the 1981 FEIS preferred alignment. Both The Nature Conservancy (TNC) and the US Fish and Wildlife Service (USFWS) identified each of the properties as potential habitat for the federally endangered Mitchell's satyr butterfly.

Loop ramps of the original I-94/BL-94/US-31 interchange had design speeds of 40 mph. Due to interchange design modifications the loop ramp speeds have been reduced to a 35 mph design speed. As a result, the smaller footprint of the loop ramps and associated outer ramps decreased the total right-of-way costs and wetland impacts. Also dropped from the original design in order to reduce impacts was an interchange configuration that would allow for a future westbound I-94 flyover ramp to southbound US-31.

Added to **Section 5.0 Environmental Consequences** section is an additional project specific mitigation summary sheet. This newly created summary, called the "Green Sheet", lists proposed project specific mitigation by category. Only special actions required to mitigate proposed impacts of this project are listed. This summary will be a living document and updated throughout the life of the project. Standard or general mitigation measures applicable to most or all MDOT projects of this type are found in **Section 5.24 Mitigation Summary**.

The detention basins proposed along I-94 in the DSEIS to control potential sedimentation to Blue Creek were replaced with a drainage system that would discharge into the Blue Creek through a 300 foot vegetation buffer. This change was in response to comments from regulatory agencies that the proposed open water detention facilities could compromise the cold water qualities of Blue Creek. The proposed enclosed median storm system would discharge to an open ditch system a minimum of 300 feet east and west of Blue Creek. This will allow for adequate filtration of sedimentation, along with discharging of runoff into Blue Creek downstream from the Blue Creek Fen to avoid potential adverse impacts to the fen habitat.

Section 6.0 Public Involvement and Agency Coordination includes comments from federal and state agencies on the DSEIS and MDOT responses as well as public hearing comments grouped by topic.

Table I Practical Alternatives Evaluation Matrix

Category	Criterion	Alternative PA-1	Recommended Alternative PA-2	Alternative PA-3	Alternative PA-4
		Transportation System Management	Connection of US-31 Freeway to I-94 South of BL-94	Connection of US-31 Freeway to I-94 at BL-94	FEIS alignment connecting to I-94 at I-196/US-31
Impacts:					
Land Use ^B	Total Right-of-Way Required (acres)	1	403	428	495 ^A
	Total Agricultural and Open Space (acres)	0	402	416	491 ^A
	Actively Farmed Parcels	0	46	54	16
	Unique Farmland (acres)	0	1	11	12
	Prime Agricultural Soils (acres)	0	215	178	219 ^A
	Agricultural Parcel Splits (#)	0	1	1	0
Social	Recreational Land Impacted	None	None	None	None
	Neighborhoods / Subdivision Impacts	None	None	1 ^C	None
	Community Facilities (Churches, Schools etc.)	None	None	1 ^C	None
Relocations	Residential Relocations (#)	0	14	26	1 ^D
	Commercial Relocations (#)	0	0	0	0
	Land Locked Parcels (#)	0	1	0	0
Noise	Noise Sensitive Receptors Exposed to Levels Exceeding FHWA Criteria ^E	19	24	17	33
Floodplains	Required Bridge Spans over Floodplains	None	None	None	4 new structures and 1 rebuilt structure
Ecological Resources	Wetland Impacts (acres)	0.3	12.2	10.8	29.9
	Observed Threatened and Endangered Species Impacts ^F	None	None	None	Mitchell's satyr butterfly
Cultural Resources	Potentially Historic Buildings/Site Impacts (#)	0	0	0	1
	Potential Archaeological Site Impacts	0	0	0	0
Contaminated Sites	Potential Contaminated Site Impacts and Recognized Environmental Conditions (#)	0	5	5	2
Traffic	Local Road Closures (#)	0	1	1	2
	Grade Separations (#) ^G	1	5	5	11
	Level-of-Service on I-94 (2025)	D or better	D or better	D or better	D or better
Relative Costs	Total Project Construction Cost (2005 dollars)	\$5 million	\$80.1 million	\$85.7 million	\$104 million
	US-31 Mainline length north of Empire Road (Lft)	N.A.	13,250	13,800	17,100
	Constructability Difficulty (H,M,L)	Low	Low	Medium	High
^A Includes previously acquired right-of-way resulting from the 1981 FEIS ^B As defined by local land use maps ^C Nine homes in the Butler-East Euclid Subdivision would be relocated along with the Calvary Lighthouse Church ^D Relocations for PA-4 do not include 36 relocations associated with the 1981 FEIS which have already taken place ^E Defined as having design hour exterior noise levels between 66 and 75 dBA or an increase of 10 or more dBA ^F Includes state and federal listed species ^G Does not include replacement of existing grade separations on I-94					