
EXECUTIVE SUMMARY

Description of the Proposed Project

This Draft Environmental Impact Statement (DEIS) discusses and compares alternatives for improving 17 miles of US-131 located in Elkhart County, Indiana, and St. Joseph County, Michigan. US-131 begins at the Indiana Toll Road (I-80/I-90) located one mile south of the Indiana/Michigan State Line, and extends north approximately 270 miles to Petoskey, Michigan. While much of US-131 to the north of the study area is limited access freeway, the segment under study consists of two-lane and four-lane roadway with uncontrolled access except for a short segment north of the City of Three Rivers where access is controlled. This DEIS identifies Practical Alternatives for the study area that include a limited access freeway, both on and off of the existing US-131 alignment, and alternatives for non-freeway improvements on the existing US-131 alignment in conjunction with a two-lane by-pass around the Village of Constantine. The DEIS also addresses options for potential phased construction. The study area consists of a one-mile wide corridor extending 17 miles north from the Indiana Toll Road to a logical terminus one mile north of Cowling Road, which is just north of the City of Three Rivers, Michigan. Existing US-131 becomes a divided controlled access highway at this location. Existing US-131 serves as the eastern boundary for most of this study corridor. A map depicting the study area and the Practical Alternatives under consideration for improving US-131 is contained in **Appendix E** located at the back of this document. This map can be folded out for easy reference.

Support for improvements to US-131 has existed for decades and comes from a wide variety of stakeholders including local communities within the study area, the US-131 Area Development Association (US-131 ADA), and the Grand Rapids Chamber of Commerce.

The Michigan Department of Transportation (MDOT) is committed to enhancing driving conditions and safety along US-131. Between 1994 and 2004, MDOT invested over \$20.2 million in various US-131 improvements between the State Line and I-94 near Kalamazoo.

In 1996, MDOT organized the US-131 Master Plan Committee comprised of local stakeholders in Kalamazoo and St. Joseph Counties. The Master Plan Committee helped MDOT with a corridor location study completed in 1997. This study established support and consensus for a preferred US-131 improvement corridor in St. Joseph County, but determined that there was no consensus for a preferred corridor within Kalamazoo County.

In 1999, MDOT began a study to evaluate options for constructing a US-131 bypass around the Village of Constantine in St. Joseph County. Traffic analysis and a desire to enhance system connectivity led to the extension of the bypass study to include all of US-131 between the Indiana Toll Road and M-60 in February 2000. In response to resolutions passed by Fabius Township, the City of Three Rivers, and Lockport Township, the study was again extended further north in March 2001 to north of the northern City Limits of Three Rivers. The revised northern terminus is a point one mile north of Cowling Road in St. Joseph County, Michigan. At this location US-131 is a four-lane divided controlled access facility, providing a more logical terminus as US-131 is a four-lane facility from this point northward to Cadillac, Michigan.

Purpose of and Need for a Proposed Action

The following discusses the purpose for the US-131 Improvement Study and the corresponding needs that support improvements to US-131.

Purpose of a Proposed Action: The purpose of this study is to identify potential alternatives that support the safe and efficient movement of goods and people, and that cost effectively support the economic growth of the region and the state, by improving traffic operations within the study corridor.

Need for a Proposed Action: The following points discuss the principal needs for the US-131 Improvement Study.

- There is a need for improved system operations in the US-131 corridor. The cross-section and number of lanes on US-131 varies throughout this study corridor. The five-mile segment located south of M-60 in the study corridor is the only two-lane section of US-131 south of Cadillac, Michigan.
- Part of the study need is to address capacity issues and forecast traffic growth. Existing US-131 is projected to degrade to level-of-service (LOS) E by the year 2025 for the nine mile two-lane segment located between the northern limits of the Village of White Pigeon and the southern limits of the City of Three Rivers. Although this segment of US-131 is expected to degrade to LOS E in the design hour by year 2025, it should be noted that the segment will operate at a desirable LOS during the majority of the day. However, while this may be true, the No-Build Alternative does not completely satisfy the purpose of and need for a proposed action.

Local vehicular trips, mixed with an average volume of through commercial trips, restrict traffic flow. The daily truck volumes for the overall study corridor are forecasted to be about 2,620, or approximately 13% of the 20,400 average daily vehicles forecast for the year 2025. This volume is greater in the Village of Constantine where truck volumes are forecasted to be approximately 2,900 vehicles per day. This is about 15% of the total 19,500 forecasted 2025 daily vehicles in Constantine. The statewide average is 9.5% commercial truck traffic for rural two-lane trunklines.

- For five of the eight US-131 roadway segments under study, crash rates exceed the statewide averages. This equates to 7.5 miles of the 17 mile corridor where crash rates range between 9% and 144% above statewide averages. These higher than average crash rates exist principally in and around the Village of Constantine and the City of Three Rivers.
- Another need is to address US-131 geometric issues which inhibit the efficient movement of vehicles and goods on existing US-131. Within the study corridor, US-131 was first constructed in the 1920s and 1930s when traffic volumes were much lower than present. While there have been many subsequent improvements, the geometry of selected intersections continues to constrain traffic operations within the corridor. Problem areas include cross-road acute angle intersections, substandard shoulder widths, double center left-turn lanes in Three Rivers, an abundance of curb cuts and inadequate driveway spacing in portions of Three Rivers, and the signalized right angle turn on US-131 in Constantine. The locations of the noted intersection constraints are

identified in **Section 1.0, Figure 1.1**, which lists key issues by segment and location within the US-131 study corridor.

Alternatives Considered

Section 2.0, Alternatives Considered describes the multi-step process that led to the development of the Practical Alternatives under consideration in this DEIS. An earlier corridor study process, discussed in detail in **Section 2.1, Preliminary Corridor Study**, identified a preferred one-mile wide corridor within which alternatives were developed for this DEIS. This corridor allowed for improvements on the existing US-131 alignment and/or a potential new alignments west of US-131.

Preliminary Alternatives

Illustrative Alternatives: Illustrative Alternatives were developed within the above referenced corridor in the early stages of this study. Those alternatives that were determined to meet the goals and purpose of and need for a proposed action were selected for further consideration, and were advanced to the Practical Alternatives stage for refinement and further analysis. The No-Build Alternative was also carried forward as a viable alternative. This alternative also provides a baseline for comparison to the Build Alternatives.

Illustrative Alternatives were initially developed for the section of US-131 between the Indiana Toll Road and M-60. After the extension of the study area to include the portion north of M-60, Illustrative Alternatives were subsequently developed for this segment of the study area. The Illustrative Alternatives fell into four categories:

No-Build Alternative: This alternative calls for maintaining the existing US-131 facility with its current lane configuration from the Indiana Toll Road north to one mile north of Cowling Road. With this alternative, routine maintenance will occur on an as needed basis. Intersection improvements which are already committed will be implemented as funding becomes available.

None of the system or roadway inefficiencies identified in **Section 1.0, Purpose of and Need for a Proposed Action** are addressed by this alternative. As traffic through the study area increases with no capacity improvements on US-131, the segment of roadway between Dickerson Road north to M-60 on US-131 will deteriorate to LOS E in the design hour by year 2025. As traffic volumes continue to grow under the No-Build Alternative operation of the signalized intersection and ninety-degree turn in Constantine will continue to degrade with the increasing commercial truck traffic. This alternative does not address the numerous access points north of M-60, or the crash rates within this area.

The No-Build alternative is required to be carried forward as a basis for comparison to the Build Alternatives. It remains a viable alternative, for which the outcomes of no improvement must be weighted against the impacts, costs, and benefits of the Build Alternatives. The No-Build Alternative does not completely satisfy the purpose of and need for a proposed action. However, it best minimizes the social, economic, and environmental impacts compared to any of the Build Alternatives, and it has been retained as a Practical Alternative. The No-Build Alternative is a potential Recommended Alternative if it is determined that a project's benefits do not warrant the associated costs and impacts of the Build Alternative.

Transportation System Management (TSM) Alternatives: TSM Alternatives are low-cost improvements to the existing roadway network designed to maximize the efficiency of the existing transportation system with little or no new construction. TSM improvements included

intersection and lane improvements, demand management, and Access Management. TSM Alternatives, while better than the No-Build Alternative, would not fully meet the purpose of and need for the project as they would not fully address existing inefficient traffic movements (poor progression of traffic through the study corridor), address local concerns associated with the above-average volume of commercial traffic, or reduce truck traffic through the historic district in Constantine. For these reasons, TSM improvements were not retained as an individual Practical Alternative but may be part of any Practical Alternative.

Public Transit and Multi-modal Alternatives: Public Transit Alternatives were considered as a means of reducing the demand for using US-131. However, the communities within the study corridor do not have the population or workplace density for traditional fixed-route public transit to be a viable alternative. Thus, public transit improvements were not carried forward as a Practical Alternative.

Multi-modal strategies are meant to increase the use of high-capacity transportation modes such as transit and inter-modal freight delivery. Both rail and air freight facilities were considered as alternatives to reduce the commercial traffic on US-131. The lack of fixed transportation assets (rail yards, distribution facilities, truck storage yards, etc.) in the project area makes it impractical and prohibitively expensive to create the diversions of rail and truck movements necessary for making an inter-modal freight transfer facility feasible. The truck traffic on the segment of US-131 under study is primarily through traffic and represents a high volume for the existing facility, but not the magnitude necessary to support investment in a multi-modal freight transfer facility. Multi-modal improvements are not considered a viable Practical Alternative.

Illustrative Build Alternatives: Initially, seven Illustrative Build Alternatives involving new right-of-way (ROW) acquisition for US-131 improvements were developed. After the study area was extended north of M-60, three additional Illustrative Alternatives were developed. The Illustrative Alternatives were evaluated through a process of public involvement and social, economic, environmental and engineering analysis. Eventually portions of five of the Illustrative Build Alternatives south of M-60 and one of the Illustrative Build Alternatives north of M-60 were discarded due to public comment and the results of impact analysis. The remaining portions of the Illustrative Build Alternatives were carried forward into the Practical Alternatives phase of the project.

Alternatives Considered but Rejected

Transportation System Management, public transit, and multi-modal alternatives were dropped from further consideration as stand-alone alternatives for the Practical Alternative stage, as they did not meet the study goals or the purpose of and need for a proposed action.

Practical Alternatives

In developing the Practical Alternatives, components of the Illustrative Alternatives were refined and combined into four continuous freeway alignments extending from the Indiana Toll Road to the northern terminus of the project, one mile north of Cowling Road. The four freeway Practical Alternatives were developed to incorporate the best attributes of all earlier alignments. PA-5 and a variation of PA-5 (PA-5 Modified) were subsequently added to the study to address spot locational improvements, and to provide a fuller range of Practical Alternatives as required by the National Environmental Policy Act (NEPA). These non-freeway at-grade alternatives include a bypass of the Village of Constantine, lane and shoulder width improvements to meet current standards, and spot improvements to existing US-131 at locations projected to

experience roadway inefficiencies. The Practical Build Alternatives are discussed in detail within this DEIS along with the No-Build Alternative. The attributes of the Build Alternatives are discussed in detail in **Section 2.4, Practical Alternatives**, while their impacts are discussed in **Section 4.0, Environmental Consequences**. Discussion of potential phasing of improvements can be found in **Section 2.5, Construction Phasing**. A Recommended Alternative will be identified and presented within the Final Environmental Impact Statement (FEIS) for the project, which may be a composite of two or more of the six Practical Build Alternatives, or the No-Build Alternative. Transportation Systems Management (TSM) improvements could also be implemented in conjunction with any Build Alternative.

This document identifies and analyzes the impacts of the Practical Alternatives. All Practical Build Alternatives are illustrated on the map contained in **Appendix E** at the back of this document. This map can be folded out for reference while reading the document.

Practical Alternative 1 (PA-1) (freeway)

PA-1 would be a five-lane roadway on the existing US-131 alignment between the Indiana Toll Road and Brown/Dickinson Road, and then would become a four-lane limited access freeway that bypasses the Village of Constantine and part of the commercial area along US-131 in the City of Three Rivers. Where the freeway crosses Hoffman Road and the Rocky River in Three Rivers, PA-1 would be a four-lane urban freeway with a median barrier. PA-1 would have cloverleaf interchanges at Quarterline Road, M-60, and would include a realigned Cowling Road.

Practical Alternative 2 (PA-2) (freeway)

PA-2 would be a five-lane roadway on the existing US-131 alignment from the Indiana Toll Road to just north of Anderson Road. From north of Anderson Road to Brown/Dickinson Road, PA-2 would be a four-lane limited access freeway along the existing alignment. The roadway would then feature the same four-lane bypass of Constantine as PA-1 before rejoining the existing US-131 alignment at Drummond Road. PA-2 follows the existing US-131 alignment as a four-lane freeway from Drummond Road to the northern terminus of the project. PA-2 would be a depressed urban freeway section as it passes through the commercial area along existing US-131 in Three Rivers. PA-2 would have three cloverleaf interchanges located at US-12, Quarterline Road, and M-60; and one single point interchange at a realigned Cowling Road.

Practical Alternative 3 (PA-3) (freeway)

PA-3 would be a five-lane roadway on the existing US-131 alignment between the Indiana Toll Road and Anderson Road. From Anderson Road to Riverside Drive, PA-3 would be a four-lane limited-access freeway. At Riverside Drive, PA-3 meets the PA-1 alignment and would be constructed with the same features as PA-1 to the northern terminus of the project. PA-3 would have four cloverleaf interchanges, located at US-12, Quarterline Road, M-60, and at a realigned Cowling Road.

Practical Alternative 4 (PA-4) (freeway)

PA-4 is the same as PA-3 from the Indiana Toll Road to Dickinson Road. From Dickinson Road to north of Broadway Road, PA-4 would continue as a four-lane limited access freeway, providing the furthest west bypass of Constantine and a bypass of the commercial area along US-131 in Three Rivers. North of Broadway Road, PA-4 follows the same alignment as PA-1

and PA-3. PA-4 has four cloverleaf interchanges located at US-12, Youngs Prairie Road, M-60, and at a realigned Cowling Road.

Practical Alternative 5 (PA-5) *(two lane non-freeway)*

PA-5 would be a two-lane roadway on the existing US-131 alignment from the Indiana Toll Road north to Brown/Dickinson Road, and from Garber Road north to M-60. PA-5 includes a new two-lane bypass of the Village of Constantine, following the same alignment as described above for PA-1 and PA-2. South of M-60, PA-5 would have the same 66-foot ROW width as the existing two-lane US-131. Around Constantine, PA-5 would have 66 feet of ROW but would be a controlled access roadway, with limited opportunities for vehicles to enter or exit the road. It would have at-grade intersections at Riverside Drive, North River Road, Quarterline Road, and existing US-131 at the north and south ends of the bypass. North of M-60, PA-5 follows the existing US-131 alignment as a five-lane cross-section, maintaining existing at-grade intersections.

North of the Village of Constantine, a variety of intersection and roadway improvements are proposed, as are truck climbing lanes between Drummond and Gleason Roads. The truck climbing lanes would allow passenger vehicles to pass trucks that move slowly when climbing a steep hillside. Potential improvements within the City of Three Rivers include consolidation of driveways to reduce conflict points, and the elimination of double center left turn lanes.

Where PA-5 utilizes the existing US-131 alignment minor improvements would be implemented to bring the existing alignment up to current MDOT standards (i.e. 8-foot shoulders, 12-foot lanes). **Section 2.4.5, Practical Alternative 5 (PA-5)** discusses PA-5 in greater detail.

Access management measures and zoning regulations are being developed under a separate access management study. The recommendations of this study can be implemented in the near future as a separate undertaking by local agencies. Zoning or other local community regulations and guidelines to support access management would not preclude the construction of any of the Build Alternatives.

Practical Alternative 5 Modified (PA-5 MOD) *(two lane non-freeway)*

Practical Alternative 5 Modified (PA-5 MOD) is the same alternative as PA-5 south of North River Road. At North River Road, PA-5 MOD curves northeast and connects with existing US-131 at the existing signalized intersection at Youngs Prairie Road in the Village of Constantine. This would become a four-legged intersection and remain signalized. From here PA-5 MOD continues north as a two-lane section on the existing US-131 alignment to north of Gleason Road. North of Gleason Road to the study limits, PA-5 MOD is the same alternative as PA-5.

US-131 Business Route

If service drives are developed for the freeway Build Alternatives (PA-1 to PA-4), MDOT would turn over ownership of the existing Business Route (running through downtown Three Rivers) to the City of Three Rivers and St. Joseph County within their respective jurisdictions. The service drives would be designated as the new Business Route, to be maintained by MDOT. The city/county would take over responsibility for maintenance of the old Business Route. The City of Three Rivers has also discussed with MDOT keeping the US-131 Business Route designation on its current Main Street route, terminating at Lovers Lane/Cowling Road. If this

alternative is selected, MDOT would construct only those service drives necessary to assure access to all properties. A continuous business route would not be constructed.

Future Improvements in Indiana

In PA-1 through PA-4 the proposed five-lane cross section connecting US-131 in Michigan to Indiana State Road 13 at the Indiana Toll Road is not intended to preclude future development of a freeway cross-section at this location, as a part of the State of Indiana's long range plan vision of State Road 13 as a statewide mobility corridor. However, only the impacts associated with the five-lane proposed improvement are included in this DEIS.

Affected Environment

Section 3.0, Affected Environment presents a summary of the existing social, cultural, economic, and natural environment of the US-131 study area. The study area is primarily an agricultural area that contains the Villages of White Pigeon and Constantine, and the City of Three Rivers. Among the topics discussed within the Affected Environment section are:

- Existing land use and community facilities
- Existing farmland
- Population trends and characteristics
- Existing economic conditions
- Current air quality and noise levels
- Rivers, wetlands, and natural areas located within the study area
- Wildlife and vegetation found in the study area including federal and state listed threatened and endangered species
- Cultural resources located within the study area
- Existing parks and recreation facilities, and
- Potential contaminated sites listed by state and federal agencies within the study area

The information discussed in **Section 3.0, Affected Environment** provides the basis for analyzing the potential impacts of the Practical Alternatives on the study area environment. **Section 4.0, Environmental Consequences** discusses these impacts in detail.

Environmental Consequences

Table I at the end of this **Executive Summary** provides a comparison of some of the impacts for each of the Build Alternatives. The impacts in **Table I** are broken down into four segments for each of the Build Alternatives to allow for comparison of impacts within different parts of the study area. These segments are depicted on the foldout map in **Appendix E**. Within most parts of **Section 4.0, Environmental Consequences**, impacts are discussed for the entire length of the Build Alternatives, not by segment. Presentation of the impacts by segment in **Table I** allows for a comparison of the approximate impacts on major resources if segments of the various Practical Alternatives were to be combined when developing the Recommended Alternative that will be presented in the FEIS.

Land Use and Zoning

In terms of land acquisition, none of the Build Alternatives would have a substantial impact on land use in the study area, with the exception PA-2 which would impact almost all of the existing commercial property on US-131 within the Village of White Pigeon. The total acreage impacted

would be a minimal percentage of the land use within the county for all land use types shown in **Table 4.1**. The land acreage required for ROW under PA-5 and PA-5 MOD is substantially lower than with the other Build Alternatives.

The on-alignment sections of the Build Alternatives impact agricultural, scattered residential, commercial, and industrial land uses. New alignments off of existing US-131 primarily impact farmland and rural residential areas. PA-2 will have the greatest direct impact on commercial and industrial land uses, while the other Build Alternatives impact areas with more rural land uses. Each of the Build Alternatives is generally compatible with current zoning although PA-2 relocates a number of industrial and commercial properties due to inadequate setbacks. The Build Alternatives are generally compatible with the impacted land zoned for agricultural use although each alternative will split from two to 18 farm parcels and sever edges of several others. This will require the reconstruction of irrigation systems and make the movement of farm equipment between fields more difficult. MDOT would administer potential relocations in consultation with the local communities to ensure that zoning and setback requirements were followed.

Farmland

The Build Alternatives each require between 39 acres and 571 acres of farmland within the study area as a part of the ROW for construction. None of the Build Alternatives impact more than 0.25 percent of the 234,823 acres of farmland located in St. Joseph County according to the 1997 St. Joseph County Master Plan. The Land Evaluation Site Assessment (LESA) scores for the Build Alternatives range from 127 to 176. These Alternatives impact between two and 11 farmland parcels protected under P.A. 233, the Farmland and Open Space Preservation Program (formerly P.A. 116).

Since all Practical Alternatives would directly impact less than 0.25 percent of the total farmland in the County, none of the Practical Alternatives would have a substantial impact on farmland. Furthermore, none of the Practical Alternatives would have a substantial indirect impact on farm operations as the number of parcel splits is low, and compensatory mitigation would be provided to farmers impacted in this fashion. Because all Practical Alternatives would affect a low percentage of prime farmland and no unique farmland would be affected, none of the Practical Alternatives would have a major impact on these specially-designated farmland types.

Neighborhoods and Community Facilities

Since impacts on community resources will be mitigated, and there are no major community resources that will be directly affected, there will be no significant impacts on any community resources associated with any of the Practical Alternatives.

Each of the Build Alternatives require relocations within one or more small neighborhoods or rural subdivisions. Access on local roads will be maintained for remaining properties within these neighborhoods and subdivisions. PA-1 through PA-4 should have minimal impacts to school bus routes and emergency services, as overpasses will be used to maintain through access on most local roads crossed by freeway sections. Access will be maintained for all properties not acquired for ROW. PA-5 and PA-5 MOD will maintain most existing intersections with some revisions to at-grade intersections on the bypass of the Village of Constantine, as well as intersection geometric improvements at other locations. The Build Alternatives will have minimal effect on local travel patterns and school bus routes. The Build Alternatives are expected to have positive impacts on the local communities through the expected decrease in

traffic within downtown Constantine and roadway improvements at other locations, which vary by alternative.

The Build Alternatives impact churches more than any other community resource. PA-1 and PA-3 would not require the relocation of any community facility, but would require small amounts of ROW from the edges of several church properties. PA-2 would require the relocation of two churches as well as ROW acquisition from several others. PA-2 would also relocate the Michigan State Police Post located at the US-131/US-12 intersection. PA-4 would require the relocation of one church in addition to ROW acquisition from the edges of several others. No direct impacts to community resources are anticipated with PA-5 or PA-5 MOD, although there could be isolated increases in noise levels for some properties.

Environmental Justice

None of the Practical Alternatives have the potential for disproportionately high and adverse impacts to minority, low income, or other potential Environmental Justice populations. There would not be substantial impacts on Environmental Justice communities associated with the proposed project. The study area has an overall poverty rate comparable to the county and state averages, and the percentage of minorities estimated to be living within the study area is lower than the state and county averages. A number of public involvement efforts were undertaken to ensure full and fair participation by all potentially affected communities and to identify any potential Environmental Justice concerns, including public meetings, contacting local church leaders, and meetings with local officials.

Relocations

PA-2 would have substantial impacts on residential areas and businesses in the study area as it would require the displacement of 110 residences and 64 businesses, including the majority of businesses along US-131 in White Pigeon. PA-4 would have a substantial impact on residents, impacting 113 residences. All the other alternatives would have low to moderate levels of impact. The relocations for PA-5 and PA-5 MOD are substantially lower than for the freeway Build Alternatives.

Each of the freeway Build Alternatives will relocate between 59 (PA-1) and 113 (PA-4) residences. The non-freeway Build Alternatives, PA-5 and PA-5 MOD, would relocate eight and seven residences respectively. PA-5 and PA-5 MOD would each relocate one business and approximately seven jobs. PA-2 will relocate the most businesses at 64, while PA-1, PA-3, and PA-4 relocate 11 to 13 businesses each. PA-1, PA-3, and PA-4 will relocate a moderate number of jobs (57 to 87), while PA-2 relocates approximately 685. An adequate number of replacement properties exist within the study area communities for all of the relocations although accommodating all of the commercial relocations for PA-2 could be difficult in a short time frame. The relocations connected with each Build Alternative are summarized in **Table I** at the end of this **Executive Summary**.

Economics

In general, the adverse economic effects of the project will be small, including tax base loss, effects on businesses from relocations, and changes in traffic patterns. Of all the alternatives, only PA-2 would have substantial adverse economic impacts. Economic impacts of the Build Alternatives will include the bypassing of one or more of the study area communities, reductions in local tax base as a result of right-of-way acquisition, and the economic benefits of the US-131 improvements to the local area and the State of Michigan. A survey of business operators and

patrons at businesses located on US-131 was conducted to find out their perceptions of existing US-131 and the potential economic impacts of bypasses. **Section 4.6, Economic Impacts** discusses each of these issues and the survey results in detail.

The Build Alternatives will generally have minimal impacts on the tax bases of the communities in the study area. The ROW for PA-1, PA-3, PA-4, PA-5, and PA-5 MOD are estimated to result in the acquisition of less than 2.5% of the total taxable value for properties in each of the study area communities. ROW for PA-2 will result in the acquisition of an estimated 5.5% of the total Mottville Township taxable value and 8.1% of the total Village of White Pigeon taxable value. For all of the Build Alternatives, the potential percent taxable value loss is less than the average annual increase in taxable value between 1995 and 2001 for St. Joseph County.

The direct and indirect economic benefits of the Build Alternatives were also assessed. Direct economic benefits from the alternatives include savings on travel time for motorists and reductions in crash costs. Indirect economic benefits include the increase in economic activity, earnings, and jobs as a result of the investment of construction dollars and the reinvestment of the travel time savings and crash cost reductions in the local and Michigan economies.

Non-Motorized Facilities

The Practical Alternatives all have little adverse effect on non-motorized use in the corridor, since there is little existing use of the corridor by pedestrians or bicycles. In many cases, the pedestrian and bicycling environment will be improved by removal of vehicular traffic from local roads, particularly in downtown Constantine. Access for pedestrians and other non-motorized transportation users will improve once any of the freeway Build Alternatives is fully implemented, as local roads will be grade-separated and non-motorized transportation users will no longer have to cross US-131 at grade. PA-5 and PA-5 MOD would still feature only at-grade intersections. Bypassing the Village of Constantine, which is a part of all Build Alternatives, will also reduce through traffic in downtown Constantine, improving the streetscape for consumers and non-motorized transportation users. All Build Alternatives impact a series of unmarked "Bicycle Tour Routes", which are published by the St. Joseph County Parks and Recreation Commission and utilize existing local roads.

Air Quality

St. Joseph County is not within a designated air quality non-attainment area for any of the air pollutants for which the U.S. Environmental Protection Agency (USEPA) has established standards. A maximum and "worst case" air quality receptor analysis for carbon monoxide (CO) determined that the Build Alternatives will not result in traffic volumes that cause the National Ambient Air Quality Standards (NAAQS) to be exceeded. Because the area is in attainment and the modeling determined that localized effects of the project would not exceed the NAAQS, no significant impacts on air quality will result from any of the Practical Alternatives.

Noise

In all cases, the No-Build Alternative adversely affects more properties than the existing condition and any of the Practical Alternatives. Traffic generated noise levels for all Practical Alternatives exceed the Federal Highway Administration (FHWA) noise abatement criteria for several residential and commercial properties. However, the No-Build Alternative shows a higher number of residential properties exceeding the noise abatement criteria (185 by 2025) than do any of the Build Alternatives, which were calculated to affect between 15 and 72 residential units. Additional short-term noise impacts are anticipated during construction of any

of the Build Alternatives. In the Final Environmental Impact Statement (FEIS) process, after a Recommended Alternative is selected, a refined modeling effort will further define the level of impact and determine the need, if any, for potential mitigation, such as noise walls. Due to projected traffic operations and relatively low development densities, impacts warranting noise walls are not anticipated at this time.

Groundwater

The Build Alternatives would have minimal impacts on groundwater resources. The St. Joseph aquifer in the Indiana portion of the study area would not be impacted by any of the Build Alternatives. There are no major aquifers within the study area in Michigan. MDOT specifications imposed on contractors will use Best Management Practices to avoid effects on wells, sewer lines and recharge areas, as well as to protect surface water sources (covered in subsequent sections of this chapter). Therefore, the project will not have substantial impacts on groundwater.

Wetlands

All Practical Alternative alignments have been developed to avoid and minimize impacting wetland areas to the greatest degree possible (particularly high-value wetlands). Impacts that are unavoidable will be mitigated. Based on the type, quality, and amount of wetlands impacted, PA-4 would have a substantial impact to wetland resources. All other Build Alternatives would have low to moderate impacts. PA-5 and PA-5 MOD would have substantially less impact than the freeway alternatives.

The Build Alternatives impact between 0.51 and 57.87 acres of wetlands within the study area. The majority of wetlands impacted are forested wetlands. Alternatives were developed to avoid sensitive wetland areas to the extent possible. As a result, none of the Build Alternatives impact the Stag Lake Bog, Old Cranberry Bog, and Kerr Creek Fen, which have potential habitat for threatened and endangered species. These sensitive wetlands are displayed on **Figure 4.10**. All of the freeway alternatives (PA-1 to PA-4) impact high quality floodplain forested wetlands along the White Pigeon and St. Joseph Rivers. PA-5 and PA-5 MOD use the existing road and bridge crossing at the White Pigeon River and require only one two-lane bridge over the St. Joseph River. The alternatives cross nearly perpendicular to the rivers at the narrower points of the floodplains in order to minimize impacts. Various Build Alternatives also impact several other moderate and low quality wetlands with PA-5 and PA-5 MOD having the least effect.

Where wetland impacts cannot be avoided, MDOT will restore previously existing wetlands or create new wetlands in accordance with Act 451 (Part 303). Where wetland mitigation is proposed, mitigation ratios of 2:1 for floodplain forest and forested wetlands, and 1.5:1 for emergent and scrub-shrub wetlands will be used. Five potential mitigation sites representing 706 acres of land have been identified in the vicinity of the study area. Details of the wetland mitigation process are discussed in **Section 4.12, Wetland Impacts** and **Section 4.30.4 Wetland Mitigation**.

Aquatic Impacts

Efforts have been made in the conceptual design of surface water crossings to minimize their effects on aquatic resources, and mitigation of impacts will use MDOT Best Management Practices. These combined efforts will ensure that there are no significant impacts on aquatic resources under any Practical Alternative.

The White Pigeon, St. Joseph, and/or Rocky Rivers are affected to various degrees by all Build Alternatives. PA-1, PA-5 and PA-5 MOD, would continue to utilize the existing bridge spanning the White Pigeon River, while PA-2 through PA-4 would construct new structures in addition to the existing structure. All freeway alternatives would construct two new bridges over the St. Joseph River, and PA-5 and PA-5 MOD would utilize a single two-lane structure. PA-1 through PA-4 would require two parallel structures over the Rocky River, whereas PA-5 and PA-5 MOD would retain the existing structure.

Roadway improvements will result in additional storm water run-off that may contribute sediment and other pollutants to the rivers during major storm events. Construction activities may result in temporary impacts to surface water quality and aquatic habitat, due to riverbank disturbance and the removal of adjacent vegetation. The White Pigeon River and St. Joseph River crossings will likely need to contain at least one waterway pier for all new structures.

Hydrological

Efforts have been made in the conceptual design of surface water crossings to minimize their effects on floodplains, and their impacts will be mitigated through compensatory mitigation. Other surface waters not discussed in **Section 4.13, Aquatic Impacts** have been fully avoided. These combined efforts will ensure that there are no significant impacts on hydrological resources under any Practical Alternative.

The White Pigeon, St. Joseph, and/or Rocky Rivers are affected to various degrees by all Build Alternatives. PA-5 and PA-5 MOD, would continue to utilize the existing bridge spanning the White Pigeon River, while PA-1 would utilize the footprint of the existing crossing while necessitating a new bridge. PA-2 through PA-4 would construct new structures in addition to the existing structure. All freeway alternatives would construct two new bridges over the St. Joseph River, while PA-5 and PA-5 MOD would utilize a single two-lane structure. PA-1 through PA-4 would require two parallel structures over the Rocky River, whereas PA-5 and PA-5 MOD would retain the existing structure.

Roadway improvements resulting in additional impervious surface will result in additional storm water run-off that may contribute sediment and other pollutants to the rivers during major storm events. Construction activities may result in temporary impacts to surface water quality and aquatic habitat, due to riverbank disturbance and the removal of adjacent vegetation. The White Pigeon River and St. Joseph River crossings will likely need to contain at least one waterway pier for all new structures.

Each of the Build Alternatives crosses the 100-year floodplains of the White Pigeon, St. Joseph, and Rocky Rivers. **Table 4.16** in **Section 4.14.1, Floodplain Impacts** identifies the structures that each alternative requires to cross these floodplains. To ensure there are no obstructions to flood flow that would result in upstream impacts, a hydraulic study to address structure sizes and waterway openings will be performed at new or modified crossings once a Recommended Alternative is selected.

Wildlife and Vegetation

Little of the study area offers unique habitat for wildlife, and impacts on those areas that do will be minimized to the greatest degree possible, with mitigation expected for sensitive wetlands. The Fabius State Game Area has been fully avoided by the project and no designated natural areas will be impacted. Mature stands of trees will be avoided to the greatest degree possible, and landscaping of the ROW will attempt to replace the functions of existing affected vegetation.

For all of these reasons, the Practical Alternatives will not have a substantial impact on wildlife habitat and vegetation. PA-5 and PA-5 MOD will have minimal effect.

The Build Alternatives would potentially impact wildlife and vegetation through the loss of habitat due to construction. Similar habitat is located within the study area for displaced wildlife. Temporary impacts to fish resources could occur as a result of PA-1 through PA-4 at the White Pigeon River and for all alternatives at the St. Joseph River. These impacts would occur as a result of river bottom disturbances and increased sedimentation due to construction. These impacts would be short term and temporary. For these reasons, the Practical Alternatives would not have a substantial impact on wildlife and vegetation. PA-5 and PA-5 MOD impacts would be minimal.

Threatened and Endangered Species

The Practical Alternatives will not have a substantial impact on federal or state listed threatened, Endangered, or Special Concern plant species, since none were identified within the proposed ROW of any alternative. Mitigation will be necessary to minimize impacts on listed animal species to ensure that the project does not create a significant impact on these species. To mitigate the effects of US-131 improvements on threatened, endangered, and special concern species, the Practical Alternatives underwent an iterative process of refinement to a) avoid resources altogether, particularly high-value habitat, then b) minimize impacts where resources could not be fully avoided. Mitigation efforts would stage construction to avoid sensitive species' breeding/spawning periods and would use best management practices to minimize habitat deterioration.

Impacts would occur at the sites of the proposed crossings of the White Pigeon River for PA-1 through PA-4 and within the St. Joseph River floodplain for all alternatives. The freeway Build Alternatives potentially impact three observed state special concern animal species. These are the prothonotary warbler, yellow-throated warbler, and eastern box turtle (all state species of Special Concern). Potential habitat for one additional listed plant species and six listed animal species exists within the floodplain crossing sites, although none of these species have been observed. This includes potential habitat for the federally endangered Indiana bat and the state endangered snuffbox mussel.

Cultural Resources

There are 211 known archaeological sites within St. Joseph County, none of which are located within any of the proposed alternatives. Based on the number of sites known in the county and the nature of the proposed study area, there is a relatively high potential to encounter archaeological sites. An archaeological reconnaissance survey will be conducted for the Recommended Alternative. Documentation pertaining to archaeological sites will be incorporated into the Final Environmental Impact Statement.

Each of the freeway Build Alternatives has the potential for adverse impacts on above-ground properties listed on or eligible for listing on the National Register of Historic Places (NRHP). Only PA-2 would potentially relocate a historic structure. PA-5 has the potential to affect one site while PA-5 MOD affects none. Seven different sites have been determined to be potentially affected by at least one of the Build Alternatives. One site is on the NRHP while the other six have been determined to be eligible for listing on the NRHP.

Parks and Recreation

There is one recreation site potentially impacted by the US-131 improvements under study. The Wahbememe Memorial Park is a historic resource listed on the National Register of Historic Places. The park is only impacted by PA-2, which would relocate the entrance of the park. Although this impact is relatively substantial, the park will remain open and still be accessible to the public. This park is approximately one acre in size and consists of a stone monument, a historical sign, a picnic table, a small lawn area fronting on US-131, and a few parking spaces. There are no known 6(f) sites located within the study corridor.

Existing US-131 passes directly west of the Fabius State Game Area, as do each of the Build Alternatives. None of the game area property is directly impacted by the ROW for the Build Alternatives. The game area has limited recreational use and has no developed recreational facilities.

Potential Contaminated Sites

The number of potentially contaminated sites that could affect any given Build Alternative ranges between 28 and 56 sites. Only one to three sites per freeway Build Alternative pose potential high risk. There are no potential high risk sites associated with the non-freeway alternatives. While all Practical Alternatives have potential site impacts, additional testing and possible remediation will be necessary in subsequent phases of this project to ensure that the project does not create any harmful impact from hazardous materials. MDOT would institute mitigation for any impacts from potentially contaminated material. In addition, MDOT's standard mitigation for contaminated sites would be instituted. Database review and field investigation were conducted to identify potentially contaminated sites which may be impacted by the Build Alternatives.

Aesthetic and Visual

None of the aesthetic and visual impacts could be considered substantial since the character of the rural landscape will not be substantially altered. Also, any potential impacts are mitigated through landscaping and aesthetic treatments. Aesthetic and visual impacts are assessed from both the "view from the road" and the "view of the road" perspectives. Overall views from PA-1 through PA-4 will become more rural in nature than those from the current alignment as urbanized areas are bypassed. PA-5 and PA-5 MOD will generally keep the alignment within the existing roadway corridor, with the same views as travelers have today except for around the Village of Constantine. Open railing on bridges would enhance the views of the rivers from the Build Alternatives. Potential impacts on viewers of the Build Alternatives, particularly PA-1 through PA-4, will occur as a result of new or wider roadways, new bridges, and new interchanges interrupting views of the existing rural landscape. New bridges at river crossings will also impact the view of the White Pigeon, St. Joseph and Rocky Rivers for neighboring residents, businesses, and river users.

Construction

The construction of any of the Build Alternatives would result in short term impacts due to construction activities. The transient time and location of construction impacts, along with mitigation that MDOT requires to minimize the disturbance, would avoid significant construction impacts. Traffic interruptions would occur in locations where the Build Alternatives intersect with or run along existing roadways. Businesses and neighborhoods located near any Build Alternative constructed would potentially experience temporary disruptions in the form of

rerouted access, noise, and traffic delays. Emergency service routes would potentially require temporary relocation. Construction of any Build Alternative would also result in potential surface water quality impacts due to increased erosion and sedimentation. However, proper sedimentation and erosion control will minimize these impacts. Fugitive dust emissions and equipment pollutants can create potential temporary air quality impacts during construction.

Indirect and Cumulative

Potential indirect and cumulative impacts are identified within four categories; land use and development, agriculture, wetlands and natural areas, and transportation patterns. Indirect and cumulative impacts resulting from the construction and subsequent improvements of US-131 would add to any impacts resulting from present and future infrastructure improvements within the study area. The Build Alternatives would have minimal impact on existing development plans with the exception of PA-2 which relocates 64 commercial sites, including 14 vacant commercial sites, and may force new or expanding businesses to seek alternative sites within the study area communities. Indirect impacts resulting from new freeway development (PA-1 through PA-4) will likely be focused on freeway interchanges and/or be limited to service stations and other small franchise operations.

Although the overall farmland impacts from the Build Alternatives are not substantial from a countywide perspective, these impacts add slightly to a cumulative pattern of conversion of farmland to other uses. Overall indirect impacts to wetlands and natural areas as a result of new development at interchange locations are not expected to be substantial as all interchanges are located within close proximity to developed areas under PA-1 through PA-4. PA-5 and PA-5 MOD would generally keep the roadway alignment within the existing US-131 corridor, with the exception of the bypass of Constantine. Access control on this segment of roadway, and the separation of the bypass from commercial development, will limit changes in land use. Improvements to US-131 may have an indirect impact on regional transportation patterns by rerouting some through traffic from local roads and other north-south arterials.

Permits Required

Permits will be required from various resource agencies prior to the construction of any of the Build Alternatives. Michigan rules governing permit requirements and issuance are regulated pursuant to the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The Michigan Department of Environmental Quality (MDEQ) regulates activities within a floodplain/floodway, wetland, or below the ordinary high water mark, under the following Parts of the Act:

- Part 301, Inland Lakes and Streams
- Part 303, Wetlands Protection
- Part 31, Floodplain Regulatory Authority

Section 4.27, Permits provides a summary of the permits required for each Practical Alternative along with the resource agencies that issue the permits.

Mitigation Summary

Potential mitigation of adverse impacts resulting from the Practical Alternatives is discussed as a part of many of the impacts sections located in **Section 4.0, Environmental Consequences**.

Section 4.28, Mitigation Summary provides a summary of mitigation measures that MDOT will take as part of implementing the Recommended Alternative once it is selected.

Draft Section 4(f) Evaluation

The purpose of the Draft Section 4(f) Evaluation is to analyze potential adverse impacts of the US-131 improvements on sites that are regulated by Section 4(f) of the Department of Transportation Act of 1966. Section 4(f) sites include public parks, recreation lands, wildlife and waterfowl refuges, and historic sites. Section 4(f) states that no highway project should be approved which requires the “use” of any publicly owned land from a public park, recreation area, wildlife and waterfowl refuge, or historic site unless there is no feasible or prudent alternative to the use of such land.

Six historic sites are eligible for listing on the National Register of Historic Places (NRHP) and one historic site is listed on the NRHP. These sites are located within the study area and may be affected by the Practical Alternatives. Five of the six eligible historic sites and the listed NRHP site, the Wahbememe Memorial Park, have been evaluated for 4(f) impacts and are discussed in **Section 5.0, Draft Section 4(f) Evaluation**. The Wahbememe Memorial site is also a public park and is also evaluated for 4(f) recreation impacts.

Public Coordination

MDOT has conducted an extensive public involvement process to obtain public input, identify local concerns, and better understand the public’s view of potential social, economic, and environmental impacts. Public involvement was taken into account in developing and refining alternatives. Four formal public meetings have been held and several other meetings with smaller groups were also organized. Newspapers, a project website, a toll free phone number, and newsletters were also used to provide information about the project and solicit public input. Public and agency comment are expected to be key parts of the refinement of the Practical Alternatives and will guide the production of the final environmental document.

Table I Comparison of Impacts for Practical Alternatives by Segment

Alternatives/ Segments		Total Relocations	Residential Relocations	Commercial Relocations	Community Facility Relocations	Agricultural Parcel Splits	Agricultural Acres	Wetland Acres	Wetland Sites	Observed Threatened & Endangered Species	Potential Historic Sites	Cost (millions.2004)**
No-Build	Segment A	No Relocations				No Impacts		No Impacts		No Impacts	No Impacts	
	Segment B	No Relocations				No Impacts		No Impacts		No Impacts	No Impacts	
	Segment C	No Relocations				No Impacts		No Impacts		No Impacts	No Impacts	
	Segment D	No Relocations				No Impacts		No Impacts		No Impacts	No Impacts	
	No-Build Total	0	0	0	0	0	0	0	0	0	0	\$0
PA-1	Segment A	7	5	2	0	0	116	2.7	2	0	0	
	Segment B	27	27	0	0	12	228	2.2	3	0	2	
	Segment C	28	21	7	0	3	106	9.7	9	0	0	
	Segment D	9	6	3	0	3	42	1.7	1	0	0	
	PA-1 Total	71	59	12	0	18	492*	16.3	15	0	2	\$269.00
PA-2	Segment A	117	76	39	2	0	160	4.8	2	0	2	
	Segment B	29	29	0	0	7	245	2.2	3	0	2	
	Segment C	27	3	23	1	1	79	13.7	7	0	1	
	Segment D	4	2	2	0	2	28	1.7	1	0	0	
	PA-2 Total	177	110	64	3	10	512*	22.4	13	0	5	\$460.97
PA-3	Segment A	28	27	1	0	2	171	9.6	4	0	0	
	Segment B	30	30	0	0	9	251	2	2	0	2	
	Segment C	28	21	7	0	3	105	9.7	9	0	0	
	Segment D	9	6	3	0	3	44	1.7	1	0	0	
	PA-3 Total	95	84	11	0	17	571*	23	16	0	2	\$288.56
PA-4	Segment A	28	27	1	0	2	153	9.6	4	0	0	
	Segment B	46	46	0	0	7	285	3.5	3	0	0	
	Segment C	44	34	9	1	1	94	43.1	11	0	1	
	Segment D	9	6	3	0	3	31	1.7	1	0	0	
	PA-4 Total	127	113	13	1	13	563*	57.9	19	0	1	\$303.26
PA-5	Segment A	0	0	0	0	0	0	0	0	0	0	
	Segment B	8	8	0	0	5	109	0.5	2	0	0	
	Segment C	0	0	0	0	0	0	0	0	0	1	
	Segment D	1	0	1	0	0	0	0	0	0	0	
	PA-5 Total	9	8	1	0	5	109	0.5	2	0	1	\$30.25
PA-5 MOD	Segment A	0	0	0	0	0	0	0	0	0	0	
	Segment B	7	7	0	0	2	39	0.5	2	0	0	
	Segment C	0	0	0	0	0	0	0	0	0	0	
	Segment D	1	0	1	0	0	0	0	0	0	0	
	PA-5 MOD Total	8	7	1	0	2	39	0.5	2	0	0	\$24.75
<p>Segment A - White Pigeon Area: From Southern Project Terminus to Dickinson Road Segment B - Constantine Bypass: From Dickinson Road to Gleason Road Segment C - Three Rivers South: From Gleason Road to Hoffman Road Segment D - Three Rivers North: From Hoffman Road to Northern Project Terminus</p> <p>Refer to Appendix E for the location of each segment. *Does not include indirect farmland impacts from the relocation of farm buildings, as discussed in Section 4.2, Farmland Impacts. *Segment linkages are not necessarily interchangeable, geometric modifications may be required. **Cost estimates include early preliminary engineering, preliminary engineering, construction engineering, pavement, earthwork, structures, and right-of-way.</p>												