



## 3.5 Local Road Improvements

The conversion and/or replacement of a partial or no access control non-freeway facility, such as existing US 31, to a freeway facility with full access control, as is the case with each of the four alternatives studied in detail (Alternatives Cs, Es, G-Cs and G-Es) will often have dramatic effects on the local traffic patterns. These types of projects will often concentrate the flow of local traffic to the lower-level local roadways that feed upper-level local and state roadways that provide access to the freeway. There is often a substantial increase in traffic volumes associated with the traffic migration to the local or state roadways that have access to the new freeway facility. This increase in traffic volumes can often change the facility type and functional classification of the local or state roadway and accelerate the need to improve the local or state roadway.

The upgrade of US 31 to a freeway facility with full access control will affect the flow of local traffic, as local commuters will redirect their routes to roadways with access to the freeway. These changes in traffic patterns will affect the traffic volume and change the type of facility or some of the local or state roadways that will access the new freeway. This will drive the need for expansion of the local or state roadways, the need for which is accelerated by the improvements to US 31. Local and State roadway improvements identified for the US 31 Improvement Project include:

### State Roadways

- US 6 upgrade to four lanes from just east of the existing US 31 and US 6 intersection, eastward to the proposed interchange – Alternatives Cs, Es, G-Cs and G-Es
- SR 4 (Pierce Road) extension from existing US 31 to new US 31 – Alternatives G-Cs and G-Es

### Local Roadways

- Fellows Street extension southward over existing US 20 from Ireland Road to Jackson Road – Alternative G-Es
- Scott Street extension northward over existing US 20 from Jackson Road to Ireland Road – Alternative G-Es
- 7th Road extension in Marshall County from Michigan Road eastward to the new US 31 and 7th Road interchange and further eastward to existing 7th Road – Alternatives Cs, Es, G-Cs and G-Es

The socio-economic and environmental impacts for the US 6 extension, the SR 4 (Pierce Road) extension, Fellows Street extension and Scott Street extension local roadway improvement projects have been included in the summary of impacts for Alternatives Cs, Es, G-Cs and G-Es, contained in Table 3.6.39. Costs associated with preliminary engineering (design), right-of-way and right-of-way engineering (design) and construction of the local roadway improvement project, for each of the alternatives, are listed as a line item in the table. All other socio-economic and environmental impacts are also included with those of the alternative. It should be noted that the socio-economic and environmental impacts for the 7<sup>th</sup> Road extension local roadway improvement project in Marshall County have not been included in the summary of impacts contained in Table 3.6.39. Marshall County officials have committed to this project as a local project utilizing local funding which will eventually require a separate environmental analysis to be conducted following the NEPA process.

### 3.5.1 US 6 Upgrade

The US 6 Upgrade local roadway improvement project consists of the extension of the existing four-lane section of US 6 from just east of the existing US 31 and US 6 intersection, eastward to the proposed interchange (see Figure 3.5.30). Preliminary Alternatives Cs, Es, G-Cs and G-Es may need this local road improvement project. It is anticipated that the addition of two lanes of pavement, resulting in a total of four lanes, would occur on the north side of



Figure 3.5.30: US 6 Upgrade Local Roadway Improvement Project



the existing two lanes of pavement. An approximate total right-of-way width of 150 feet (approximately 50 feet of additional right-of-way north of the existing right-of-way line) was used to determine socio-economic and environmental impacts contained in Table 3.6.39.

### Construction Costs

The construction costs and preliminary engineering (design) fees associated with the improvements to US 6 related to Alternatives Cs, Es, G-Cs and G-Es would be approximately \$2,600,000 (year 2005 dollars). This would include the construction of two new lanes of pavement approximately one mile in length. Upgrading this two-lane roadway to desirable standards for a four-lane section would include the addition of two 12-foot lanes with a 10-foot paved outside shoulder and a 4-foot paved median shoulder.

### Right-of-Way Costs

The right-of-way costs and right-of-way engineering (design) fees associated with the improvements to US 6 related to Alternatives Cs, Es, G-Cs and G-Es would be approximately \$1,600,000 (year 2005 dollars). This would include one residential relocation, no business relocations and approximately seven acres of new right-of-way.

### Traffic Volumes

Current year 2000 traffic counts along US 6 in this area are approximately 7,400 vehicles per day. The predicted future year 2030 traffic volumes along US 6 in this area associated with the No-Build Alternative are approximately 8,935 vehicles per day. The predicted future year 2030 traffic volumes along US 6 associated with the improvements to US 6 between existing US 31 and the proposed interchange, west of the proposed interchange, and traffic volumes along US 6 east of the proposed interchange related to each of the preliminary freeway alternatives are summarized in Table 3.5.36:

ALTERNATIVE	West of Proposed Interchange (Between Existing US 31 and Proposed Interchange)	East of Proposed Interchange
Alternative Cs	8,880 vehicles per day	13,780 vehicles per day
Alternative Es	9,515 vehicles per day	11,850 vehicles per day
Alternative G-Cs	9,025 vehicles per day	12,080 vehicles per day
Alternative G-Es	9,920 vehicles per day	11,535 vehicles per day

### 3.5.2 SR 4 (Pierce Road) Upgrade

The SR 4 (Pierce Road) Upgrade local roadway improvement project consists of the extension of SR 4 from the existing US 31 and SR 4 intersection, eastward to the proposed interchange (see Figure 3.5.31). The existing segment of roadway in this area is currently a county road named Pierce Road. Preliminary Alternatives G-Cs and G-Es may need this local road improvement project. For the SR 4 (Pierce Road) extension, a total right-of-way width of 100 feet was used to determine socio-economic and environmental impacts as contained in Table 3.6.39. For this

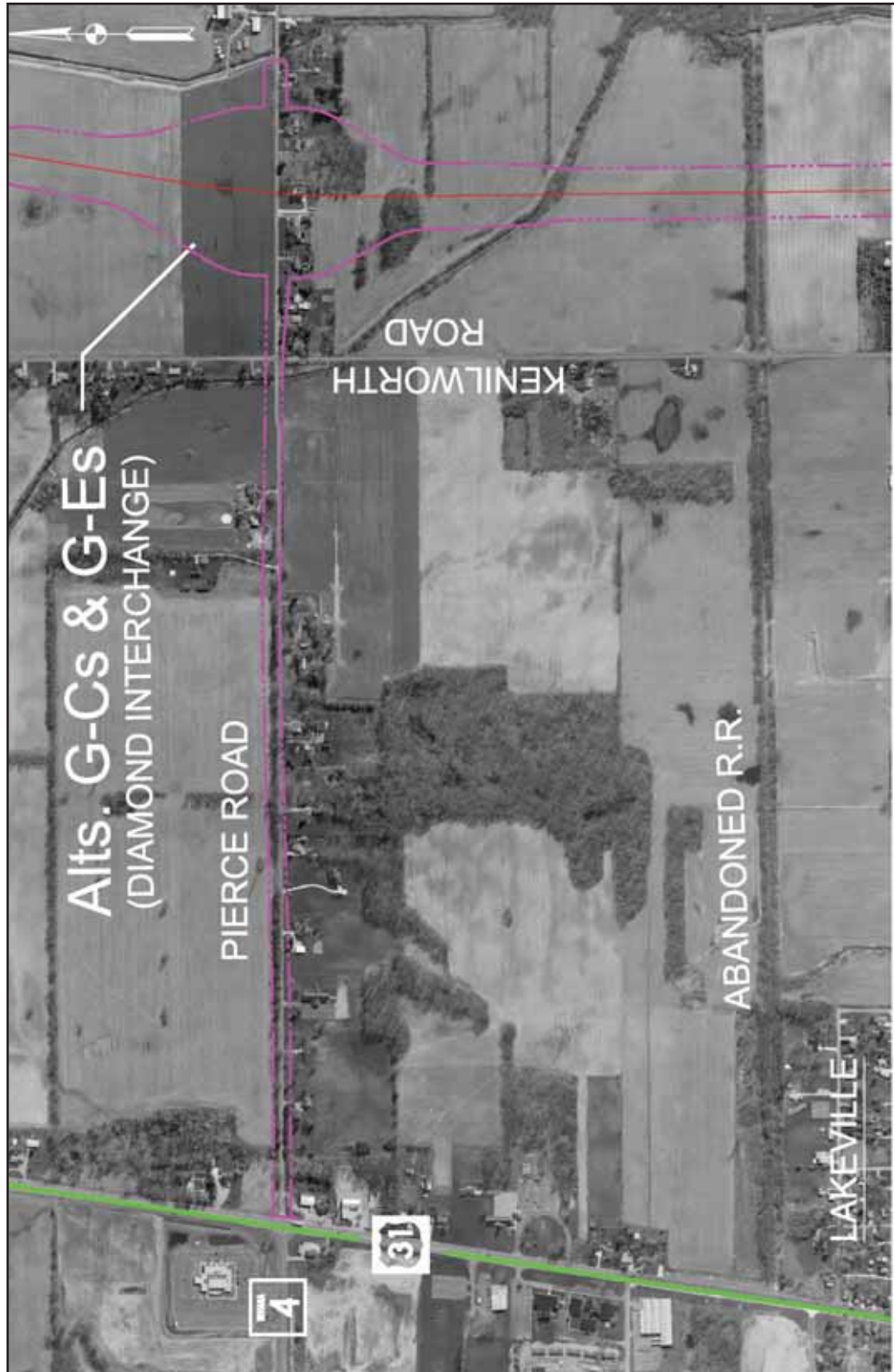


Figure 3.5.31: SR 4 (Pierce Road) Upgrade Local Roadway Improvement Project



local roadway improvement project, the proposed roadway alignment was shifted slightly northward of the existing roadway alignment so that a majority of the right-of-way impacts were along the north side of Pierce Road.

## Construction Costs

The construction costs and preliminary engineering (design) fees associated with the improvements to SR 4 (Pierce Road) related to Alternatives G-Cs and G-Es would be approximately \$1,400,000 (year 2005 dollars). This would include approximately 1.25 miles of new two-lane roadway and one stream crossing. Upgrading this two-lane roadway to desirable standards would include a roadway typical section consisting of 12-foot lanes with 10-foot paved shoulders, on a total of approximately 100 feet of right-of-way.

## Right-of-Way Costs

The right-of-way costs and right-of-way engineering (design) fees associated with the improvements to SR 4 (Pierce Road) related to Alternatives G-Cs and G-Es would be approximately \$800,000 (year 2005 dollars). This would include no residential relocations, no business relocations and approximately ten acres of new right-of-way.

## Traffic Volumes

Current year 2000 traffic counts along Pierce Road in this area are approximately 790 vehicles per day. The predicted future year 2030 traffic volumes along Pierce Road in this area associated with the No-Build Alternative are approximately 875 vehicles per day. The predicted future year 2030 traffic volumes along Pierce Road associated with the extension of SR 4 and the improvements to Pierce Road between existing US 31 and the proposed interchange are approximately 2,385 vehicles per day for Alternative G-Cs and 4,070 vehicles per day for Alternative G-Es.

### 3.5.3 Fellows Street Extension

Following publication of the Draft Environmental Impact Statement (DEIS), City of South Bend officials expressed concerns with local access to the subdivisions on the east and west sides of the Alternatives Es and G-Es between Kern Road and the US 31/US 20 interchange. Local officials in South Bend met with the Project Management Team on two occasions to discuss these concerns and potential modifications to the alternatives to address these concerns. Through the course of discussions at these meetings, modifications were made to the local access plan that was in the best interests of both the City of South Bend and the Indiana Department of Transportation (INDOT). These modifications included the development of a revised local access plan aimed at improving north-south connectivity between Kern Road and Ireland Road, just north of US 20. The revised local access plan included the addition of two separate grade separated crossings of US 20, one on the east side of US 31 at Fellows Street and the other on the west side of US 31 at Scott Street as discussed below.

The Fellows Street extension local roadway improvement project consists of the extension of Fellows Street from the existing Ireland Road and Fellows Street intersection just north of US 20, southward over US 20 to Jackson Road (see Figure 3.5.32). Preliminary Alternatives Es and G-Es may need this local road improvement project. For the Fellows Street extension, a total right-of-way width of 100 feet was used to determine socio-economic and environmental impacts as contained in Table 3.6.39.



Figure 3.5.32: Fellows Street Extension Local Roadway Improvement Project



## Construction Costs

The construction costs and preliminary engineering (design) fees associated with the Fellows Street extension local roadway improvement project related to Alternatives Es and G-Es would be approximately \$2,800,000 (year 2005 dollars). This would include approximately 0.5 miles of new two-lane roadway and the bridge crossing US 20. Upgrading this two-lane roadway to desirable standards would include a roadway typical section consisting of 12-foot lanes with 10-foot paved shoulders.

## Right-of-Way Costs

The right-of-way costs and right-of-way engineering (design) fees associated with the Fellows Street extension local roadway improvement project related to Alternatives Es and G-Es would be approximately \$1,800,000 (year 2005 dollars). This would include seven residential relocations, no business relocations and approximately five acres of new right-of-way.

## Traffic Volumes

The Fellows Street north-south connection across US 20 does not currently exist as existing Fellows Street terminates just north of US 20. Current year 2000 traffic counts along this segment of Fellows Street were not available but are approximated at less than 1,000 vehicles per day. The predicted future year 2030 traffic volumes along Fellows Street in this area associated with the No-Build Alternative are expected to increase slightly; however, the increase would be very minimal and future volumes would likely remain at less than 1,000 vehicles per day. The predicted future year 2030 traffic volumes along Fellows Street associated with the extension of Fellows Street southward from Ireland Road, over US 20 to Jackson Road, are approximately 5,700 vehicles per day for Alternatives Es and G-Es.

### 3.5.4 Scott Street Extension

As discussed above, the Fellows Street extension and the Scott Street extension local roadway improvement projects developed in response to concerns expressed by City of South Bend officials related to local access to the subdivisions on the east and west sides of the Alternatives Es and G-Es between Kern Road and the US 31/US 20 interchange. Modifications were made to the local access plan contained in the DEIS that was in the best interests of both the City of South Bend and the Indiana Department of Transportation (INDOT). These modifications included the development of a revised local access plan aimed at improving north-south connectivity between Kern Road and Ireland Road, just north of US 20. The revised local access plan included the addition of two different grade separated crossings of US 20, one on the west side of US 31 at Scott Street and the other on the east side of US 31 at Fellows Street as discussed above.

The Scott Street extension local roadway improvement project consists of the extension of Scott Street from the existing Jackson Road and Scott Street intersection just south of US 20, northward over US 20 to Ireland Road (see Figure 3.5.33). Preliminary Alternatives Es and G-Es may need this local road improvement project. For the Scott Street extension, a total right-of-way width of 100 feet was used to determine socio-economic and environmental impacts as contained in Table 3.6.39.

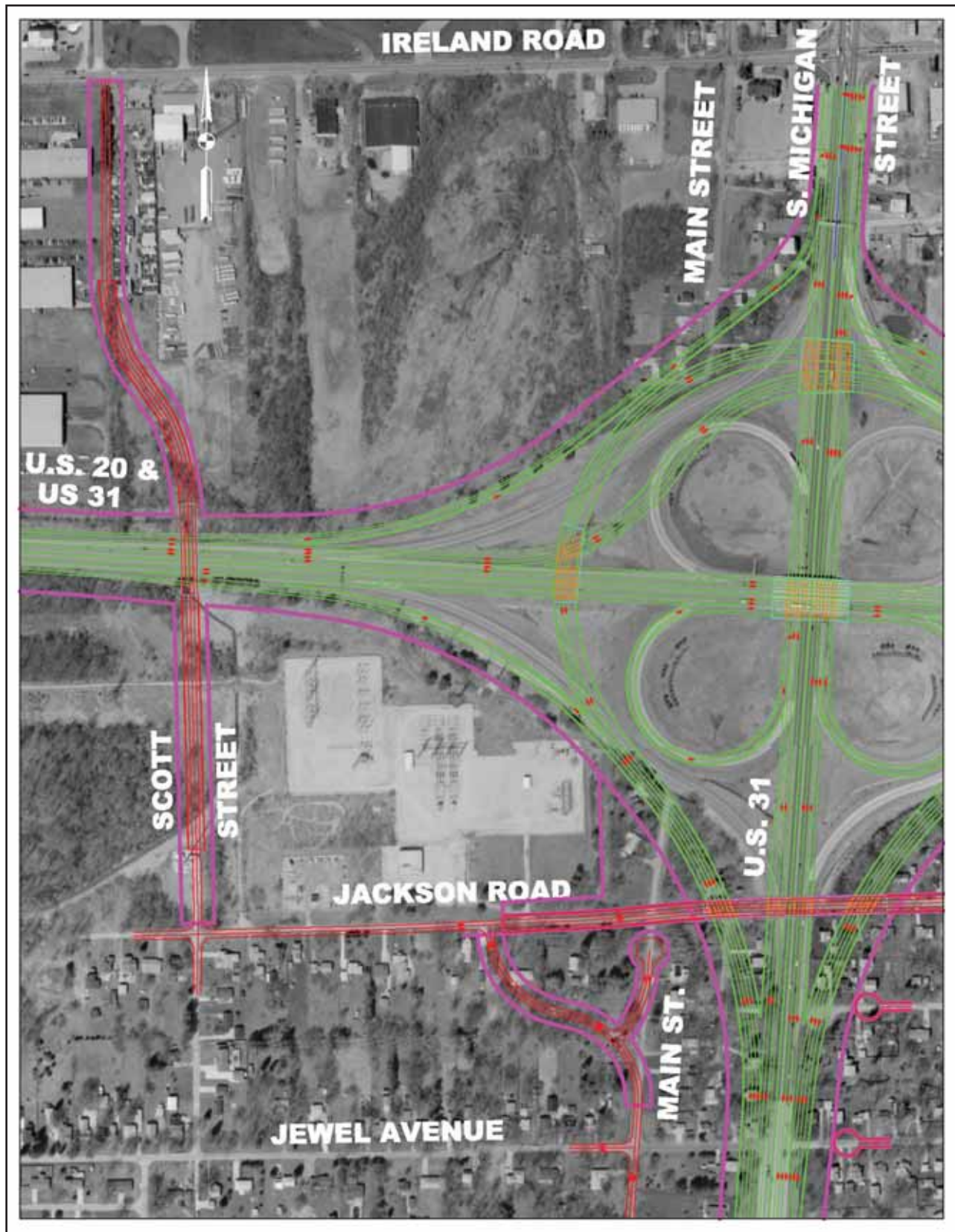


Figure 3.5.33: Scott Street Extension Local Roadway Improvement Project





## Construction Costs

The construction costs and preliminary engineering (design) fees associated with the Scott Street extension local roadway improvement project related to Alternatives Es and G-Es would be approximately \$2,200,000 (year 2005 dollars). This would include approximately 0.5 miles of new two-lane roadway and the bridge crossing US 20. Upgrading this two-lane roadway to desirable standards would include a roadway typical section consisting of 12-foot lanes with 10-foot paved shoulders.

## Right-of-Way Costs

The right-of-way costs and right-of-way engineering (design) fees associated with the Scott Street extension local roadway improvement project related to Alternatives Es and G-Es would be approximately \$400,000 (year 2005 dollars). This would include no residential relocations, no business relocations and approximately five acres of new right-of-way.

## Traffic Volumes

The Scott Street north-south connection across US 20 does not currently exist as existing Scott Street terminates at Jackson Road, just south of US 20. The predicted future year 2030 traffic volumes along Scott Street associated with the extension of Scott Street northward from Jackson Road, over US 20 to Ireland Road, are less than 500 vehicles per day for Alternatives Es and G-Es. While this future traffic count is relatively small, it is important to note that future traffic volumes for this local roadway improvement project is largely driven by future land use along the roadways north and south of US 20. If the areas north of US 20 and west of US 31 were redeveloped for commercial use as opposed to the current industrial uses and the mixture of residential and industrial uses south of US 20 and west of US 31 further developed, the traffic volumes could be significantly higher on the Scott Street extension. These future traffic volumes could reach levels similar to those expected for the Fellows Street extension local roadway project, in the range of 3,000 to 5,000 vehicles per day. It is also important to note that one of the purposes of this local roadway improvement is to improve north-south access for emergency service providers by providing access across US 20 to the subdivisions located south of US 20 and west of US 31.

### 3.5.5 7th Road Extension

A local roadway improvement project developed as a result of coordination between the study team and local officials in Marshall County and Plymouth. The preliminary alternatives studied in detail in the DEIS were on common alignment throughout the length of Marshall County, with the exception of a small segment just south of the Marshall and St. Joseph County line. This meant that the location of the preferred alternative was essentially determined in Marshall County in the DEIS. Local officials in Marshall County and Plymouth expressed concerns with the local access plan associated with the preliminary alternatives within the county and met with the Project Management Team on two occasions to discuss these access issues. These issues focused on interchange, overpass/underpass and cul-de-sac locations. Through the course of discussions at these meetings, Marshall County and INDOT officials were able to modify the Marshall County local access plan and produce a plan that was in the best interest of both parties. The most significant change related to the revised Marshall County local access plan and the resulting local roadway improvement project, involved the elimination of a proposed interchange at West 5A Road and the addition of an interchange at 7<sup>th</sup> Road for Alternatives Cs, Es, G-Cs and G-Es. This change in local access is consistent with the Marshall County Comprehensive Plan and Plymouth Comprehensive Plan. No interchange had been proposed at the 7<sup>th</sup> Road location initially as no intersecting roadway currently exists at 7<sup>th</sup> Road and US 31.



Figure 3.5.34: 7th Road Extension Local Roadway Improvement Project



Due to no existing connecting roadway at the 7th Road interchange location, Marshall County officials made a written commitment to complete a 7th Road extension project that would begin at Michigan Road (Old US 31) and extend eastward to the western limits of the proposed US 31 interchange at 7th Road. It would then begin on the east side of the proposed 7th Road interchange and continue eastward to 7th Road (see Figure 3.5.34). This commitment included funding associated with preliminary engineering, environmental studies, right-of-way acquisition and construction costs. Preliminary Alternatives Cs, Es, G-Cs and G-Es may need this local road improvement project. For the 7th Road extension, the alignment of the proposed roadway has not been determined by local officials. The graphical representation of the 7th Road extension as shown in Figure 3.5.34 is a conceptual representation developed for this EIS only. The final alignment of the 7th Road extension is to be determined by Marshall County officials during the design of the local roadway project.

It is anticipated that Marshall County will utilize Federal funding for the construction of the 7th Road Extension Project, which will require the associated environmental evaluation to follow the NEPA process. It should be noted that while the US 31 and 7th Road interchange, including the US 31 Bridge over 7th Road and the associated interchange ramps, is identified as a part of this EIS, the timing of the construction of the interchange is directly related to the timing of the construction of the 7th Road Extension Project. Construction of the interchange ramps that will provide access to and from US 31 at 7th Road will not be completed by INDOT prior to the completion of the 7th Road Extension NEPA process and the construction of the 7th Road Extension Project by the county.

## Construction Costs

The construction costs and preliminary engineering (design) fees associated with the 7<sup>th</sup> Road extension local roadway project related to Alternatives Cs, Es, G-Cs and G-Es were not estimated for this EIS as Marshall County officials have committed to this undertaking. It is estimated that this project would include approximately 2.0 miles of new two-lane roadway and two stream crossings. This two-lane roadway, designed to desirable standards, would likely include a roadway typical section consisting of 12-foot lanes with 10-foot paved shoulders, on a total of approximately 100 feet of right-of-way.

## Right-of-Way Costs

The right-of-way costs associated with the 7th Road extension local roadway project related to Alternatives Cs, Es, G-Cs and G-Es were not estimated for this EIS as Marshall County officials have committed to this undertaking. Since it is anticipated that the county will utilize Federal funding for the construction of the 7th Road Extension Project and the associated environmental evaluation will be required to follow the NEPA process, the direct impacts of the project will be determined at that time. No direct socio-economic and environmental impacts for the 7th Road Extension Project have been determined or included in Table 3.6.39; however, in response to requests made at the July 14, 2004, resource agency meeting, an estimation of the impacts associated with the project have been included as indirect impacts in the cumulative impacts of the US 31 Project and are further discussed in Chapter 5.20 – Indirect and Cumulative Impacts. Utilizing the conceptual alignment and the approximate required right-of-way width discussed above, a potential footprint for the project was determined (see Figure 3.5.34). Utilizing the best-known existing secondary sources of information available, including GIS data and aerial photography, environmental information was collected and an impact analysis was performed. An estimate of potential indirect impacts associated with the 7th Road Extension Project include wetland impacts, determined from digital NWI maps, of 3 acres; forest impacts of 5 acres; and farmland impacts of 15 acres. It is anticipated that there will likely be one residential relocation associated with the 7th Road Extension Project. During the environmental documentation and design phases of the 7th Road Extension project development, avoidance and minimization measures may result in the reduction of these impacts.



## Traffic Volumes

The 7<sup>th</sup> Road extension does not currently exist between Michigan Road and North Linden Road. The predicted future year 2030 traffic volumes along 7<sup>th</sup> Road associated with the improvements to 7<sup>th</sup> Road between Michigan Road and the proposed interchange, west of the proposed interchange, and traffic volumes along 7<sup>th</sup> Road east of the proposed interchange related to each of the preliminary freeway alternatives are summarized in Table 3.5.37.

Table 3.5.37: Future Year 2030 Traffic Counts for 7th Road for Alternatives Cs, Es, G-Cs and G-Es (Preferred Alternative G-Es shaded)		
ALTERNATIVE	West of Proposed Interchange (Between Michigan Road (Old US 31) and Proposed Interchange)	East of Proposed Interchange (Between Proposed Interchange and North Linden Road)
Alternative Cs	8,030 vehicles per day	4,030 vehicles per day
Alternative Es	7,440 vehicles per day	4,080 vehicles per day
Alternative G-Cs	6,960 vehicles per day	4,230 vehicles per day
Alternative G-Es	7,145 vehicles per day	4,080 vehicles per day



### 3.5.6 Summary of Local Road Improvement Projects

The upgrade of US 31 to a freeway facility with full access control will affect the flow of local traffic, as local commuters will redirect their routes to roadways with access to the freeway. These changes in traffic patterns will affect the traffic volume and change the type of facility or some of the local or state roadways that will access the new freeway. This will drive the need for expansion of the local or state roadways, the need for which is accelerated by the improvements to US 31. Table 3.5.38 summarizes the local roadway improvements identified for the US 31 Improvement Project for Alternatives Cs, Es, G-Cs and G-Es.

Table 3.5.38: Summary of Local Roadway Improvement Projects for Alternatives Cs, Es, G-Cs and G-Es (Costs include Preliminary Engineering (Design), Right-of-Way and Construction) (Preferred Alternative G-Es shaded)				
Local Roadway Improvement Project	ALTERNATIVE			
	Cs	Es	G-Cs	G-Es
<b>US 6 Extension (Mil. of \$) (Year 2005 Dollars)</b>	<b>4.2</b>	<b>4.2</b>	<b>4.2</b>	<b>4.2</b>
Construction Costs and Preliminary Engineering Fees (Mil. of \$)	2.6	2.6	2.6	2.6
Right-of-Way Costs and Right-of-Way Engineering Fees (Mil. of \$)	1.6	1.6	1.6	1.6
<b>SR 4 (Pierce Road) Upgrade (Mil. of \$) (Year 2005 Dollars)</b>	<b>N/A</b>	<b>N/A</b>	<b>2.2</b>	<b>2.2</b>
Construction Costs and Preliminary Engineering Fees (Mil. of \$)	N/A	N/A	1.4	1.4
Right-of-Way Costs and Right-of-Way Engineering Fees (Mil. of \$)	N/A	N/A	0.8	0.8
<b>Fellows Street Extension (Mil. of \$) (Year 2005 Dollars)</b>	<b>N/A</b>	<b>4.6</b>	<b>N/A</b>	<b>4.6</b>
Construction Costs and Preliminary Engineering Fees (Mil. of \$)	N/A	2.8	N/A	2.8
Right-of-Way Costs and Right-of-Way Engineering Fees (Mil. of \$)	N/A	1.8	N/A	1.8
<b>Scott Street Extension (Mil. of \$) (Year 2005 Dollars)</b>	<b>N/A</b>	<b>2.6</b>	<b>N/A</b>	<b>2.6</b>
Construction Costs and Preliminary Engineering Fees (Mil. of \$)	N/A	2.2	N/A	2.2
Right-of-Way Costs and Right-of-Way Engineering Fees (Mil. of \$)	N/A	0.4	N/A	0.4
<b>* 7<sup>th</sup> Road Extension (Mil. of \$) (Year 2005 Dollars)</b>	<b>* N/A</b>	<b>* N/A</b>	<b>* N/A</b>	<b>* N/A</b>
<b>ALTERNATIVE TOTAL (Mil. of \$) (Year 2005 Dollars)</b>	<b>4.2</b>	<b>11.4</b>	<b>6.4</b>	<b>13.6</b>

NOTE: \* Marshall County officials have made a written commitment to complete a 7th Road extension project.