

Projected noise level increases, compared to existing levels, are less than 6 dBA for all of the receptors analyzed for this alternative. Alternative F4 analysis was conducted following the previous INDOT noise policy and using the STAMINA 2.0 model. Results are shown in Table 4.8-1 for comparison purposes with the new TNM modeling results. The Change versus Existing column shows the difference between the STAMINA-generated existing noise levels found in the DEIS, not the TNM-generated values shown in the table.

#### *Summary of Impacts: Major Moves Alternative*

Compared to existing conditions, project noise levels would approach or exceed the noise abatement criteria at 5 additional receptors (28 receptors in all) under this alternative (Appendix A). Projected noise levels at the receptors analyzed range from 53 dBA to 72 dBA. Projected noise level increases, compared to existing levels, are less than 6 dBA for all of the receptors analyzed for this alternative (Table 4.8-1). It should be noted that impacts are predicted at fewer receptors in the Major Moves Alternative than were predicted in the DEIS. The primary reasons for this are (1) the differences between TNM and STAMINA modeling results as discussed above and (2) differences in alignments between the alternatives that resulted in different modeled noise levels and different receptor displacements. In addition, several receptors shown in Table 4.8-1 show decreases in noise levels compared to existing levels if the Major Moves Alternative is constructed (e.g., RN175 and RN240-245). These are the results of shifts in the road alignment away from those receptors.

## **4.9 Natural Resources**

Changes to this section since the publication of the DEIS include:

- Updated information of potential impacts specific to the Major Moves Alternative.
- Changes in the methodologies, existing environments, environmental consequences and applicable mitigation plans regarding streams, wild and scenic rivers, floodplains, wetlands, current land cover and existing habitat characteristics, flora and fauna as well as rare, endangered, threatened, proposed or candidate species will be addressed in relation to the F4 Alternative discussed in the DEIS.

### **4.9.1 Soils and Geology**

There are no changes in this section since the publication of the DEIS. According to the Indiana NRCS, there are no Soils of Statewide Importance in Hamilton County. Therefore, the Major Moves Alternative will impact no Soils of Statewide Importance. Furthermore, there would be no significant impacts to geological features within the county.

### **4.9.2 Terrestrial Habitat/Wildlife**

The majority of the impacts related to the Major Moves Alternative occur along the corridor of the existing US 31 alignment. These areas have already experienced impacts such as suburban development, fragmentation, and noise. Impacts to habitat and wildlife are similar with the F4 Alternative and the Major Moves Alternative.

There have been minor changes in the acreages reported for the F4 Alternative since the discussion in the 2003 DEIS. The proposed impacts addressed in the DEIS included 31.8 acres of forest land, 2.7 acres of herbaceous rangeland, and 10.3 acres of shrub/brush rangeland. Current impacts associated with Alternative F4 include 29.8 acres of forest land, 6.6 acres of herbaceous

rangeland, and 16.9 acres of shrub/brush rangeland. The Major Moves Alternative would incur 30.9 acres of forest land impacts, 7.3 acres of herbaceous rangeland impacts, and 16.9 acres of shrub/brush rangeland impacts.

**Table 4.8-1  
Noise Impacts**

Receiver	Existing		No Build			Alternative F4 (DEIS)			Major Moves Alternative		
	Noise Level	Impact	Noise Level	Change vs. Existing	Impact	Noise Level	Change vs. Existing	Impact	Noise Level	Change vs. Existing	Impact
RN100	64		65	1		Displaced			65	1	
RN115	64		65	2		70	4	X	65	1	
RN125	58		60	2		66	5	X	60	1	
RN130	64		66	2		70	4	X	67	3	X
RN140	70	X	71	2	X	73	4	X	70	0	X
RN145	69	X	70	2	X	72	4	X	69	1	X
RN150	64		66	2		70	5	X	66	2	X
RN155	65		66	2	X	70	5	X	66	1	
RN165	60		62	2		69	5	X	61	1	
RN170	61		62	2		69	5	X	62	2	
RN175	66	X	68	2	X	71	4	X	61	-5	
RN186	60		62	2		66	3	X	58	-2	
RN210	66	X	67	1	X	Displaced			Displaced		
RN235	62		64	2		67	2	X	61	-1	
RN240	65		65	0		68	2	X	61	-4	
RN245	64		64	0		67	2	X	61	-3	
RN260	63		64	1		68	4	X	64	1	
RN275	58		59	1		66	4	X	56	-2	
RN285	61		62	1		67	4	X	60	-1	
RN295	62		63	1		69	5	X	62	-1	
RN300	64		65	1		70	5	X	64		
RN305	65		66	1		Displaced			Displaced		
RN310	63		64	1		69	4	X	65	2	
RN315	68	X	69	1	X	72	4	X	70	1	X
RN320	63		64	1		68	4	X	64	1	
RN325	68	X	68	1	X	71	4	X	68	0	X
RN330	60		61	1		66	4	X	61	1	
RN335	71	X	72	1	X	73	4	X	72	1	X
RN340	64		65	1		Displaced			65	1	
RN345	70	X	71	1	X	Displaced			Displaced		
RN360	72	X	73	1	X	Displaced			Displaced		
RN370	57		58	1		66	7	X	61	4	
RS105	63		65	2		70	6	X	65	1	
RS110	71	X	73	2	X	Displaced			71	0	X
RS115	64		65	2		69	4	X	65	2	
RS120	71	X	73	2	X	Displaced			Displaced		
RS125	69	X	71	2	X	Displaced			Displaced		
RS130	69	X	71	2	X	Displaced			Displaced		
RS135	70	X	72	2	X	71	3	X	Displaced		
RS140	60		61	2		67	5	X	61	1	

Receiver	Existing		No Build			Alternative F4 (DEIS)			Major Moves Alternative		
	Noise Level	Impact	Noise Level	Change vs. Existing	Impact	Noise Level	Change vs. Existing	Impact	Noise Level	Change vs. Existing	Impact
RS145	61		62	2		67	5	X	62	1	
RS147	60		61	2		66	5	X	61	1	
RS148	60		62	2		67	5	X	62	1	
RS149	62		64	2		68	5	X	64	2	
RS150	62		63	2		68	5	X	63	1	
RS151	63		65	2		69	5	X	65	2	
RS155	63		64	2		69	5	X	64	2	
RS159	60		62	1		67	5	X	62	1	
RS160	64		65	2		69	5	X	65	2	
RS161	61		62	1		67	5	X	62	1	
RS162	60		61	1		66	5	X	60	1	
RS163	61		62	1		67	5	X	62	1	
RS164	61		62	1		67	5	X	62	1	
RS165	68	X	71	3	X	Displaced			71	3	X
RS166	61		62	1		67	5	X	62	1	
RS167	60		62	1		67	5	X	62	1	
RS169	61		63	2		67	5	X	63	2	
RS170	68	X	71	3	X	Displaced			71	3	X
RS175	69	X	72	3	X	Displaced			Displaced		
RS180	70	X	73	3	X	Displaced			Displaced		
RS185	71	X	74	3	X	Displaced			Displaced		
RS190	71	X	74	3	X	Displaced			Displaced		
RS195	71	X	74	3	X	Displaced			Displaced		
RS200	71	X	74	3	X	Displaced			Displaced		
RS205	71	X	74	3	X	Displaced			Displaced		
RS210	72	X	75	3	X	Displaced			Displaced		
RS215	66		68	3	X	Displaced			Displaced		
RS220	61		62	2		68	5	X	62	2	
RS250	65		67	2	X	Displaced			Displaced		
RS255	71	X	73	2	X	Displaced			Displaced		
RS260	65		67	2	X	Displaced			Displaced		
RS275	71	X	73	2	X	Displaced			Displaced		
RS280	70	X	72	2	X	Displaced			Displaced		
RS281	57		59	2		67	4	X	57	-1	
RS282	56		58	2		67	4	X	56	0	
RS283	53		54	2		67	4	X	53	1	
RS284	52		54	2		66	4	X	53	1	
RS285	70	X	71	2	X	Displaced			71	2	X
RS286	52		54	2		66	4	X	54	1	
RS290	66	X	68	2	X	Displaced			69	2	X
RS295	64		66	2		70	4	X	67	3	X
RS300	62		64	2		68	4	X	65	2	
RS305	71	X	73	2	X	Displaced			72	0	X
RS310	67	X	69	2	X	Displaced			Displaced		
RS315	67	X	69	2	X	Displaced			Displaced		
RS320	67	X	68	2	X	Displaced			Displaced		

Receiver	Existing		No Build			Alternative F4 (DEIS)			Major Moves Alternative		
	Noise Level	Impact	Noise Level	Change vs. Existing	Impact	Noise Level	Change vs. Existing	Impact	Noise Level	Change vs. Existing	Impact
RS325	59		60	2		66	4	X	61	2	
RS330	59		61	2		67	4	X	62	3	
RS335	67	X	69	2	X	Displaced			72	5	X
RS400	66	X	68	2	X	71	6	X	Displaced		
RS405	63		64	2		68	5	X	66	3	
RS410	60		62	2		67	5	X	64	3	
RS411	64		65	2		69	3	X	70	6	X
RS412	62		64	2		66	4	X	66	4	X
RS425	61		62	2		68	5	X	64	4	
RS510	70	X	72	2	X	74	3	X	Displaced		
RS515	69	X	71	2	X	73	3	X	70	1	X
RS520	69	X	71	2	X	73	3	X	70	1	X
RS525	69	X	71	2	X	73	3	X	70	1	X
RS530	69	X	70	2	X	73	3	X	70	1	X
RS535	69	X	71	2	X	73	3	X	70	1	X
RS540	69	X	71	2	X	73	3	X	70	1	X
RS545	69	X	71	2	X	73	3	X	71	1	X
RS550	69	X	71	2	X	73	3	X	71	2	X
RS555	69	X	71	2	X	73	3	X	71	2	X
RS560	69	X	70	2	X	73	3	X	71	2	X
RS565	68	X	70	2	X	74	3	X	71	3	X
RS600	61		63	2		Displaced			63	2	
RS605	62		64	2		Displaced			64	2	

These areas, however, are mostly small and fragmented habitats that are surrounded by commercial and residential development. Habitat impacts are illustrated in Appendix A.

A recent terrestrial survey of the project area has been conducted since the publication of the 2003 DEIS for the project. During the terrestrial survey, the presence of 32 bird species, 11 mammal species, and two amphibian species were confirmed. The majority of the species encountered were considered typical and common for urban and rural land use. Due to the transient nature of all terrestrial species encountered during the survey, no long-term impacts are expected by the actions of the proposed project. Only temporary displacement of the species during construction is anticipated.

*Summary of Impacts: Major Moves Alternative*

The Major Moves Alternative would incur 30.9 acres of forest land impacts, 7.3 acres of herbaceous rangeland impacts, and 16.9 acres of shrub/brush rangeland impacts.

**4.9.3 Endangered, Threatened, and Proposed Species**

*Federally Listed Species*

The project area falls within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally protected bald eagle (*Haliaeetus leucocephalus*). Although the bald eagle was

recently removed from Endangered Species Act protection since the publication of the DEIS, it is still federally protected under the Bald and Golden Eagle Protection Act.

Both of these species were addressed in the 2003 DEIS. No record of either species was documented near or within the project boundary in the 2003 DEIS. There are no changes in this section since the publication of the DEIS. Neither of these species were identified within a 1-mile radius of the study area from a recent (November 2007) Natural Heritage Database search. Additionally, the project area was re-surveyed on foot since the publication of the 2003 DEIS for the presence of listed species. No individuals were identified within the project area.

Previous mist net surveys for the Indiana bat were conducted along Cool Creek in May and June of 2002; no Indiana bats were captured during the survey. It was concluded that the proposed action is not likely to adversely affect listed species or designated critical habitat. The USFWS concurred with the findings of the bat survey and, in a letter dated April 30, 2003, concluded Section 7 consultation. The location of the previous survey has since been impacted by the SR 431 northbound connector.

### ***State Listed Species***

No state listed species were reported within the 2003 DEIS. There are no changes in this section since the publication of the DEIS. No state listed species were identified within a 1-mile radius of the study area from the recent (November 2007) Natural Heritage Database search. Additionally, the project area was re-surveyed on foot since the publication of the 2003 DEIS for the presence of listed species. No individuals were identified within the project area.

### ***Summary of Impacts: Major Moves Alternative***

The Major Moves Alternative will not likely adversely affect federal or state listed species or designated critical habitat.

## **4.10 Water Resources**

Changes to this section since the publication of the DEIS:

- Updated assessments of all waterways
- Addition of potential impacts specific to the Major Moves Alternative
- Considerations for current interpretations and applications of state and federal regulations

### **4.10.1 Surface Water**

Surface hydrology was determined using USGS topographic maps, aerial photography, and field verifications. All streams exhibiting “ordinary high water mark” characteristics are considered “waters of the US,” and are therefore regulated by the USACE. Some of the ditches/streams within the project area are considered legal drains and are therefore also regulated by the Hamilton County Drainage Board. Streams were evaluated in both 2007 and 2008 to determine whether the waterway qualified as a Primary Headwater Habitat (PHWH) stream, as defined by the OEPA (2002) or a non-headwater stream as defined by the OEPA (1989). PHWH streams have a defined bed and bank, with either continuous or periodic flowing water, a watershed area of less than 1 mi<sup>2</sup>, and maximum pool depth (excluding plunge pools) of 16 in or less. Streams that met this definition were evaluated using the Headwater Habitat Evaluation Index (HHEI) [OEPA 2002]. The Qualitative Habitat Evaluation Index (QHEI), as described by the OEPA

(1989) would be used to evaluate habitat quality for non-headwater streams with a watershed area of greater than 1 mi<sup>2</sup>.

Eleven stream crossings were identified for Alternative F4 in the 2003 DEIS. The proposed stream impacts totaled 3,165 to 3,258 linear feet within the proposed construction limits. Due to recent interpretations and applications of state and federal regulations, water features that were previously not considered as “streams” have been included in this section. These features primarily include ditches and drainageways. The re-evaluation of the F4 Alternative revealed 28 crossings with 7,882 linear feet of impacts. Under the current Major Moves Alternative, 31 streams crossings are proposed. Proposed impacts total 8,313 linear feet. All streams identified in the study area are summarized in Table 4.10-1 below. Both short and long term water quality impacts would result from either alternative. Long-term impacts would be a result of stream alteration, which could relate to aquatic habitat loss. Wider roadways also result in an increase in impervious surfaces. This, coupled with more traffic, could result in an increase in oil and grease runoff.

**Table 4.10-1  
Stream Crossings**

Stream Name	Hydrologic Unit Code	HHEI/ QHEI Score	Provisional Stream Classification	Stream Flow	Proposed Crossing Structure	Linear Feet within the Study Area (Linear feet)	Proposed Impacts for the Major Moves Alternative (Linear feet)
Stream 1	05120201090	51 (HHEI)	Modified Class II	Intermittent	Culvert	990	220
Stream 2	05120201090	58 (HHEI)	Modified Class II	Intermittent	Culvert	832	217
Stream 3	05120201090	37 (HHEI)	Modified Class II	Intermittent	Culvert	652	220
Stream 4	05120201090	35 (HHEI)	Modified Class II	Intermittent	Culvert	1,918	708
Stream 5	05120201090	33 (HHEI)	Modified Class II	Intermittent	N/A	392	0
Stream 6: Little Cool Creek	05120201090	36.5 (QHEI)	Poor	Intermittent	Culvert	1,893	210
Stream 7	05120201090	54 (HHEI)	Class II	Intermittent	Culvert	102	197
Stream 8	05120201090	24 (HHEI)	Modified Class I	Ephemeral	Culvert	156	202
Stream 9	05120201090	45 (HHEI)	Modified Class II	Intermittent	Culvert	780	222
Stream 10: Hiway Run	05120201090	38 (QHEI)	Poor	Intermittent	Culvert	870	234
Stream 11A: Cool Creek (crossing at SR 431)	05120201090	59.5 (QHEI)	Fair	Perennial	Bridge	621	201
Stream 11B: Cool Creek (crossing at 191st Street)	05120201090	23 (QHEI)	Very Poor	Perennial	Culvert	453	241
Stream 11C: Cool Creek (two crossings north of 191st Street)	05120201090	24 (QHEI)	Very Poor	Perennial	Culvert	823	213
Stream 12	05120201090	60 (HHEI)	Modified Class II	Intermittent	Culvert	738	207
Stream 13	05120201090	61 (HHEI)	Modified Class II	Intermittent	Culvert	3,445	218
Stream 14	05120201090	54 (HHEI)	Modified Class II	Intermittent	Culvert	524	221
Stream 15	05120201090	18 (HHEI)	Class I	Ephemeral	Culvert	195	200

**Table 4.10-1  
Stream Crossings**

Stream Name	Hydrologic Unit Code	HHEI/ QHEI Score	Provisional Stream Classification	Stream Flow	Proposed Crossing Structure	Linear Feet within the Study Area (Linear feet)	Proposed Impacts for the Major Moves Alternative (Linear feet)
Stream 16	05120201090	36 (QHEI)	Poor	Perennial	Culvert	682	197
Stream 17	05120201090	45.5 (QHEI)	Poor	Perennial	Culvert	572	207
Stream 18	05120201090	25 (HHEI)	Modified Class I	Ephemeral	Culvert	1,596	202
Stream 19	05120201090	10 (HHEI)	Class I	Ephemeral	Culvert	408	199
Stream 20	05120201090	43 (HHEI)	Modified Class II	Intermittent	Culvert	241	214
Stream 21: Grassy Branch	05120201090	45 (QHEI)	Poor	Perennial	Culvert	635	455
Stream 22:	05120201090	10 (HHEI)	Class I	Ephemeral	Culvert	148	115
Stream 23	05120201090	35 (HHEI)	Modified Class II	Intermittent	Culvert	0	0
Stream 24	05120201090	24 (HHEI)	Modified Class I	Ephemeral	Culvert	368	314
Stream 25	05120201090	67 (HHEI)	Modified Class II	Intermittent	Culvert	325	300
Stream 26	05120201090	11 (HHEI)	Modified Class I	Ephemeral	Culvert	271	211
Stream 27	05120201090	50 (HHEI)	Modified Class II	Intermittent	Culvert	969	437
Stream 28	05120201090	57 (HHEI)	Modified Class II	Intermittent	Culvert	251	273
Stream 29	05120201090	66 (HHEI)	Modified Class II	Intermittent	Culvert	1,605	688
Stream 30: Jones Ditch	05120201090	36 (QHEI)	Poor	Perennial	Culvert	567	320
Stream 31: Lindley Ditch	05120201090	44.5 (QHEI)	Poor	Perennial	Bridge	1,498	250
<b>Total</b>						<b>25,520</b>	<b>8,313</b>

Under the 2003 DEIS, all but one of the stream crossings associated with F4 Alternative are upgrades of existing crossings. Either culverts or bridges have already impacted the streams at these crossings. Most of the impacts involved widening the right-of-way, extending culverts.

*Legal Drains*

A “Legal Drain”, as per the Indiana Drainage Code (IC 36-9-27), is a drain, either open (stream, ditch, etc.), closed (tile, sewer, etc.), or a combination of both, under the maintenance authority of the local county drainage board. The Hamilton County Surveyor's office requires a permit for crossing, out letting, or working within the easement of a regulated drain. No legal drains were identified and or reported in the 2003 DEIS. The following seven waterways are considered regulated open ditches according to the Hamilton County Surveyor's office: Stream 13, Stream 16 (west side of US 31), Stream 17 (west side of US 31), Grassy Branch, Stream 11 (3 Cool Creek crossings: Tomlinson Rd., US 31, and north of 191<sup>st</sup> Street), Jones ditch, and Lindley Ditch. Approximately 6,596 linear feet of regulated open ditch is located in the project area, 1,277 linear feet of which would be impacted by the Major Moves Alternative.

*Summary of Impacts: Major Moves Alternative*

The Major Moves Alternative proposes 31 streams crossings. Proposed impacts total 8,313 linear feet. Seven crossings are of legal drains totaling 1,277 linear feet of impacts.

#### **4.10.2 Groundwater**

There have been no significant changes in the subsurface environmental since the publication of the DEIS.

##### *Summary of Impacts: Major Moves Alternative*

The Major Moves Alternative will impact the wellhead protection zones (WPZ) of four public wells located within Washington Township. Impacts associated with roadway depression will be minimal considering that the depression will be limited to few locations and will be shallow (see Chapter 3.6.2).

#### **4.10.3 Special Status Streams**

There are no changes in this section since the publication of the DEIS. There are no Indiana Special Streams (IDNR), Indiana Waters Designated for Special Protection (IDEM), Navigable Waters (USACE), Indiana Streams Associated with ETR Species (USFWS), or Wild and Scenic Rivers (NPS) in the project area.

##### *Summary of Impacts: Major Moves Alternative*

The Major Moves Alternative will have no impacts to special status streams.

### **4.11 Floodplains/Floodways**

Changes to this section since the publication of the DEIS:

- Addition of detailed assessment of potential impacts specific to the Major Moves Alternative

The floodplain/floodway impacts addressed in the 2003 DEIS have since been further revised to accommodate the Major Moves Alternative. The original Alternative F4 proposed impacts to approximately 35.12 acres of 100-year floodplain and 17.76 acres of floodway. The Major Moves Alternative would encroach upon approximately 45.33 acres of 100-year floodplain and 23.28 acres of floodway. Encroachments associated with the Major Moves Alternative are in areas already impacted by the existing US 31 facility. Further impacts by this alternative would be slight (e.g.; road widening).

The IDNR regulates non-wetland forests that occur in floodways as per IC 14-28-1 § 20. Alternatives F4 identified in the 2003 DEIS had proposed impacts totaling approximately 1.2 acres of non-wetland forested floodway while the Major Moves Alternative would impact approximately 3.2 acres.

##### *Summary of Impacts: Major Moves Alternative*

The Major Moves Alternative would impact 45.33 acres of 100-year floodplain, 23.28 acres of floodway, and 3.2 acres of non-wetland forested floodplain.

## 4.12 Wetlands

Changes to this section since the publication of the 2003 DEIS include:

- Updated wetland information based on a new delineation within the study area
- New information on potential impacts specific to the Major Moves Alternative
- Current interpretations and applications of regulations affecting impact calculations

The original wetland delineation from January 2003 for the US 31 study area had reached its regulatory shelf life. The wetland delineation and assessments were updated in March of 2008 and a new wetland delineation report was produced for the project area. The wetland impacts addressed in the 2003 DEIS have since been further revised to accommodate the Major Moves Alternative.

Wetland delineations were carried out according to the routine determination method in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987). Wetland functional quality was assessed using InWRAP Version 2.4. A provisional isolated wetland determination was made during the field survey for each identified wetland. Typically, wetlands were considered isolated if they lacked a physical or hydric soil connection to a jurisdictional stream or tributary. An IDEM Isolated Wetland Classification Worksheet was filled out for each identified isolated wetland. Isolated wetlands are placed into one of three classes (Class I, Class II, Class III) based on the level of disturbance, wildlife or aquatic habitat, hydrologic function, or the presence of rare and ecologically important community types according to 327 IAC 17-1-3.

Sixty-three wetland areas, totaling 24.91 acres, were delineated within the study area. Twenty-one wetlands, totaling 22.1 acres, were identified within the study area for the 2003 DEIS. Wetland types identified within the study area for the 2003 DEIS included: ten forested, five scrub-shrub, and six emergent. The current wetland delineation identified 17 forested, three scrub-shrub, and 43 emergent areas. The discrepancy in number of wetlands is due largely to recent changes in regulatory interpretation and/or jurisdiction.

The previous wetland delineation documented two wetlands that should be in the current study area. One forested wetland was identified in 2003 at the southern end of the study area along the west side of US 31, just south of the I-465 interchange. An additional emergent/scrub-shrub wetland was identified during the 2003 survey northeast of the US 31 and 131<sup>st</sup> Street intersection. These two wetlands were filled due to suburban development. The impacts are not affiliated with the U.S. 31 project. An additional forested wetland was documented northeast of the intersection of US 31 and 111<sup>th</sup> Street. This wetland was close to, but outside of the current study area boundary. The remaining wetlands identified during the 2003 survey were either re-delineated or were well outside the limits of the current study area.

Many of the wetlands accounted for in the new delineation are generally highly degraded emergent areas dominated by low quality species that are adapted to disturbance, such as narrow-leaved cattail (*Typha angustifolia*) and barnyard grass (*Echinochloa crusgalli*). The majority of these wetlands are located in existing road right-of-ways and agricultural fields. All wetlands identified in the new delineation are summarized in Table 4.12-1.

**Table 4.12-1  
Wetland Summary Table**

<b>Wetland Name</b>	<b>Location</b>	<b>14-Digit HUC</b>	<b>Cowardin et al. 1979 Classification</b>	<b>Hydrologic Connectivity</b>	<b>IDEM Isolated Wetland Class</b>	<b>Size (Acres)*</b>	<b>Proposed Wetland Impacts for The Major Moves Alternative</b>
Wetland 1	East side of US 31, south of the I-465 interchange	05120201-090-050	PFO1E	Isolated	Class II	0.32	0.05
Wetland 2	Adjacent to the eastbound on-ramp to I-465	05120201-090-050	PEME	Isolated	Class I	0.03	0.03
Wetland 3	Adjacent to the westbound on-ramp to I-465	05120201-090-060	PEME	Isolated	Class I	0.90	0.90
Wetland 4	Northeast of the US 31/I-465 interchange	05120201-090-050	PFO1E	Isolated	Class II	0.12	0.12
Wetland 5	West side of US 31, north of the I-465 interchange	05120201-090-060	PEMH	Isolated	Class I	0.11	0.10
Wetland 6	East side of US 31, north of 106 <sup>th</sup> St.	05120201-090-060	PEME	Connected	-	0.08	0.08
Wetland 7A	West side of US 31, south of 111 <sup>th</sup> St.	05120201-090-060	PEME	Connected	-	0.02	0.02
Wetland 7B	West side of US 31, south of 111 <sup>th</sup> St.	05120201-090-060	PEME	Connected	-	0.03	0.03
Wetland 8	Northwest of the 111 <sup>th</sup> St. and Pennsylvania St. intersection	05120201-090-060	PFO1E	Isolated	Class II	0.93	0.07
Wetland 9	Northeast of the 111 <sup>th</sup> St. and US 31 intersection	05120201-090-060	PFO1E	Isolated	Class II	0.30	0.01
Wetland 10	Northeast of the 111 <sup>th</sup> St. and US 31 intersection	05120201-090-060	PEME	Connected	-	0.04	0.04
Wetland 11	North side of 111 <sup>th</sup> St., northwest of the 111 <sup>th</sup> St. and US 31 intersection	05120201-090-060	PFO1E	Isolated	Class II	0.14	0.12
Wetland 12	West side of US 31, north of 111 <sup>th</sup> St.	05120201-090-060	PFO1E	Connected	-	1.40	0.00
Wetland 13	West side of US 31, north of 116 <sup>th</sup> St.	05120201-090-040	PEME	Isolated	Class I	0.31	0.31
Wetland 14	East side of US 31, north of 116 <sup>th</sup> St.	05120201-090-040	PEME	Isolated	Class I	0.14	0.14
Wetland 15	West side of US 31, south of Carmel Drive.	05120201-090-040	PEME	Isolated	Class I	0.03	0.03
Wetland 16	North side of Carmel Drive	05120201-090-040	PEMH	Isolated	Class I	0.34	0.01
Wetland 17	East side of US 31, north of Carmel Drive	05120201-090-060	PEMH	Isolated	Class I	0.04	0.00
Wetland 18	East side of US 31, south of 131 <sup>st</sup> St.	05120201-090-060	PEMH	Isolated	Class I	0.04	0.00
Wetland 19	West side of US 31, south of 131 <sup>st</sup> St.	05120201-090-060	PEME	Isolated	Class II	0.20	0.00
Wetland 20	East side of US 31, north of 131 <sup>st</sup> St.	05120201-090-060	PEME	Isolated	Class II	0.04	0.04
Wetland 21A	Southwest of the US 31/Old Meridian St. intersection	05120201-090-030	PEME	Connected	-	0.93	0.63
Wetland 21B	Southwest of the US 31/Old Meridian St. intersection	05120201-090-030	PFO1E	Connected	-	0.51	0.01
Wetland 22	Northwest of the Rangeline Rd./US 31 intersection	05120201-090-030	PEME	Isolated	Class I	0.03	0.03
Wetland 22A	Northwest of the Rangeline Rd./US 31 intersection	05120201-090-030	PEME	Connected	-	0.01	0.00
Wetland 23	Along the exit ramp of SR 431	05120201-090-030	PFO1E	Isolated	Class II	0.16	0.00
Wetland 24	Along the exit ramp of SR 431	05120201-090-030	PSS1E	Connected	-	1.73	0.36

**Table 4.12-1  
Wetland Summary Table**

<b>Wetland Name</b>	<b>Location</b>	<b>14-Digit HUC</b>	<b>Cowardin et al. 1979 Classification</b>	<b>Hydrologic Connectivity</b>	<b>IDEM Isolated Wetland Class</b>	<b>Size (Acres)*</b>	<b>Proposed Wetland Impacts for The Major Moves Alternative</b>
Wetland 25	West of the US 31/151 <sup>st</sup> St. Intersection	05120201-090-030	PEMH	Connected	-	0.19	0.09
Wetland 26	East side of US 31, north of 151 <sup>st</sup> St.	05120201-090-030	PFO1E	Connected	-	0.10	0.00
Wetland 27	West side of US 31, north of 151 <sup>st</sup> St.	05120201-090-030	PEME	Connected	-	>0.06	0.01
Wetland 28	West side of US 31, south of 156 <sup>th</sup> St.	05120201-090-030	PEME	Connected	-	0.02	0.02
Wetland 29A	West side of US 31, south of 156 <sup>th</sup> St.	05120201-090-030	PEME	Connected	-	0.14	0.00
Wetland 29B	West side of US 31, south of 156 <sup>th</sup> St.	05120201-090-030	PFO1E	Connected	-	0.56	0.16
Wetland 30A	East side of US 31, south of 161 <sup>st</sup> St.	05120201-090-030	PFO1E	Connected	-	>3.96	0.01
Wetland 30B	East side of US 31, south of 161 <sup>st</sup> St.	05120201-090-030	PSS1E	Connected	-	0.08	0.01
Wetland 31	West side of US 31, north of 161 <sup>st</sup> St.	05120201-090-030	PEME	Isolated	Class I	0.04	0.04
Wetland 32	West side of US 31, north of 161 <sup>st</sup> St.	05120201-090-030	PEME	Connected	-	0.05	0.03
Wetland 33	East side of US 31, south of 169 <sup>th</sup> St.	05120201-090-030	PEME	Isolated	Class I	0.01	0.01
Wetland 34	East side of US 31, south of 169 <sup>th</sup> St.	05120201-090-030	PEME	Isolated	Class I	0.01	0.004
Wetland 35	East side of US 31, south of 169 <sup>th</sup> St.	05120201-090-030	PFO1E	Isolated	Class II	>0.42	0.02
Wetland 36A	East side of US 31, north of 181 <sup>st</sup> St.	05120201-090-030	PEME	Isolated	Class I	0.08	0.07
Wetland 36B	East side of US 31, north of 181 <sup>st</sup> St.	05120201-090-030	PEME	Isolated	Class I	0.03	0.03
Wetland 37	West side of US 31, north of the Blackburn Ave. intersection	05120201-090-030	PEME	Isolated	Class I	0.02	0.00
Wetland 38	West side of Tomlinson Rd., south of the 191 <sup>st</sup> St. intersection	05120201-090-030	PSS1E	Isolated	Class II	0.20	0.11
Wetland 39	East side of Tomlinson Rd., south of 191 <sup>st</sup> St.	05120201-090-030	PEME	Connected	-	1.98	0.01
Wetland 40	East side of Tomlinson Rd., north of 191 <sup>st</sup> St.	05120201-090-030	PEME	Connected	-	0.12	0.00
Wetland 41	West side of US 31, south of 191 <sup>st</sup> St.	05120201-090-030	PFO1E	Isolated	Class II	0.59	0.03
Wetland 42	West side of US 31, south of 191 <sup>st</sup> St.	05120201-090-030	PEME	Isolated	Class I	0.19	0.19
Wetland 43A	East of the US 31/191 <sup>st</sup> St. intersection	05120201-090-030	PEME	Connected	-	0.02	0.004
Wetland 43B	East of the US 31/191 <sup>st</sup> St. intersection	05120201-090-030	PEME	Connected	-	0.02	0.00
Wetland 44	East side of US 31, north of the 191 <sup>st</sup> St. intersection	05120201-090-030	PFO1E	Connected	-	0.01	0.01
Wetland 45	West side of US 31, south of 196 <sup>th</sup> St.	05120201-090-030	PFO1E	Connected	-	>0.34	0.27
Wetland 46	East side of US 31, north of 196 <sup>th</sup> St. intersection	05120201-080-100	PEME	Connected	-	>0.74	0.01
Wetland 47A	West side of US 31, north of the 196 <sup>th</sup> St.	05120201-080-100	PEME	Connected	-	0.21	0.21

**Table 4.12-1  
Wetland Summary Table**

Wetland Name	Location	14-Digit HUC	Cowardin et al. 1979 Classification	Hydrologic Connectivity	IDEM Isolated Wetland Class	Size (Acres)*	Proposed Wetland Impacts for The Major Moves Alternative
Wetland 47B	West side of US 31, north of 196 <sup>th</sup> St.	05120201-080-100	PEME	Connected	-	>0.54	0.00
Wetland 48	West side of US 31, north of 203 <sup>rd</sup> St.	05120201-080-100	PEME	Connected	-	1.89	0.00
Wetland 49	East side of US 31, north of 202 <sup>nd</sup> St. n	05120201-080-100	PEME	Connected	-	0.14	0.14
Wetland 50	West side of US 31, north of 203 <sup>rd</sup> St.	05120201-080-100	PEME	Connected	-	0.05	0.05
Wetland 51	West side of US 31, north of the 203 <sup>rd</sup> St.	05120201-080-100	PFOIE	Connected	-	>1.00	0.14
Wetland 52A	East side of US 31, south of SR 38	05120201-080-100	PEME	Isolated	Class I	0.98	0.98
Wetland 52B	East side of US 31, southeast of SR 38	05120201-080-100	PFOIE	Isolated	Class II	1.29	0.98
Wetland 53A	Northwest of the US 31/ SR 38 intersection	05120201-080-100	PEME	Connected	-	0.01	0.004
Wetland 53B	Northwest of the US 31/ SR 38 intersection	05120201-080-100	PEME	Connected	-	0.01	0.01
<b>Total</b>						<b>&gt;24.91</b>	<b>6.78</b>
*Several of the delineated wetlands extend outside the study area. These wetlands acreages are reported with a greater than (>) sign. The acreage reported in the table is only for the portion that was delineated.							

Of the 63 wetlands delineated, 30 (totaling greater than 7.95 acres) were determined to be hydrologically isolated from any other surface waters. The remaining 33 wetlands (totaling more than 16.96 acres) were considered jurisdictional since they were hydrologically connected to other surface waters. Of the 21 wetlands delineated within the study area for the 2003 DEIS, 10 (totaling 7.27 acres) were determined to be hydrologically isolated from any other surface waters. The remaining 11 wetlands (totaling 14.83 acres) were considered jurisdictional.

The isolated wetlands identified in the 2008 wetland delineation report generally fell into two classes, Class I and Class II, according to the IDEM classification scheme. Isolated Wetlands are summarized in Table 4.12-2 below. Eighteen wetlands, totaling 3.24 acres, were determined to be Class I. The Class I wetlands were generally highly degraded emergent areas dominated by low quality species that are adapted to disturbance, such as narrow-leaved cattail (*Typha angustifolia*) and barnyard grass (*Echinochloa crusgalli*). The majority of these wetlands were located in existing road right-of-ways and agricultural fields.

Twelve wetlands, totaling 4.71 acres, were isolated Class II wetlands. Of the Class II wetlands, nine were isolated forested wetlands, totaling 4.27 acres. These wetlands were generally second or third growth forested wet depressions that have experienced some previous type of disturbance. These forested wetlands were typically dominated by silver maple (*Acer saccharinum*), American elm (*Ulmus americana*), and green ash (*Fraxinus pennsylvanica*) in the overstory; pale dogwood (*Cornus obliqua*) and poison ivy (*Toxicodendron radicans*) in the shrub/vine layer; and common wood reed (*Cinna arundinacea*) and common bur sedge (*Carex grayi*) in the herbaceous layer. Additional Class II wetlands included two emergent wetlands, comprising 0.24 acres. These emergent wetlands were primarily dominated by broad-leaved oval

sedge (*Carex tribuloides*). The remaining Class II wetland was a 0.20 acre isolated scrub-shrub wetland dominated primarily by pale dogwood (*Cornus obliqua*).

**Table 4.12-2  
Isolated Wetland Summary Table**

<b>Provisional IDEM Isolated Wetland Class</b>	<b>Wetland Community Type</b>	<b>Number of Wetlands Delineated</b>	<b>Total Delineated (Acres)*</b>	<b>Proposed Wetland Impacts for The Major Moves Alternative</b>
Class I	Emergent	18	3.24	2.86
Class II	Forested	9	>4.27	1.40
Class II	Emergent	2	0.24	0.04
Class II	Scrub-Shrub	1	0.20	0.10
<b>Total</b>			<b>&gt;7.95</b>	<b>4.41</b>
* Several of the delineated wetlands extend outside the study area. These wetlands acreages are reported with a greater than (>) sign. The acreage reported in the table is only for the portion that was delineated.				

Jurisdictional wetlands identified in the 2008 delineation were either forested, scrub-shrub or emergent. Species composition of these wetlands is similar to the isolated wetlands previously mentioned. Twenty-three emergent wetlands, totaling more than 7.27 acres, were delineated. Eight forested wetlands, comprising more than 7.88 acres and two scrub-shrub wetlands, totaling 1.81 acres, were delineated. Jurisdictional Wetlands are summarized in Table 4.12-3 below.

**Table 4.12-3  
Jurisdictional Wetland Summary Table**

<b>Wetland Community Type</b>	<b>Number of Wetlands Delineated</b>	<b>Total Delineated (Acres)*</b>	<b>Proposed Wetland Impacts for The Major Moves Alternative</b>
Emergent	23	>7.27	1.40
Forested	8	>7.88	0.60
Scrub-shrub	2	1.81	0.37
<b>Total</b>		<b>&gt;16.96</b>	<b>2.37</b>
* Several of the delineated wetlands extend outside the study area. These wetlands acreages are reported with a greater than (>) sign. The acreage reported in the table is only for the portion that was delineated.			

A total of seven wetlands were proposed to be impacted in the 2003 DEIS. A total of 0.92 acres comprised of 0.27 acres of forested (0.26 acres of isolated and 0.01 acres of jurisdictional), 0.05 of scrub-shrub (0.05 acres of jurisdictional), and 0.60 acres of emergent (0.50 isolated and 0.10 jurisdictional) wetlands were proposed to be impacted under the original F4 Alternative. Most of these impacts (0.60 acre) were to an emergent wetland associated with the diamond partially folded interchange at SR 38.

Under the Major Moves Alternative a total of 6.78 acres of wetlands are proposed to be impacted. The total acreage is comprised of 2.0 acres of forested (1.4 acres of isolated and 0.60 acres of jurisdictional), 0.47 of scrub-shrub (0.10 acres of isolated and 0.37 acres of jurisdictional), and

4.3 acres of emergent (2.9 acres of isolated and 1.4 acres of jurisdictional) wetlands are proposed to be impacted under the current Major Moves Alternative. Most of the impacts are to isolated Class I emergent wetlands.

In accordance with Executive Order 11990, the FHWA finds that (1) there will be no practicable alternative to the proposed construction in wetlands, and (2) the proposed project will include all practicable measures to minimize harm to the involved wetlands, which may result from such use.

### **4.13 Visual and Aesthetic Resources**

The visual corridor takes into account the entire landscape and for purposes of this assessment includes two main aspects: views to the road and views from the road. As described in the DEIS, the US 31 project corridor was broken into two segments for evaluation: the southern segment includes the portion of US 31 and transverses the City of Carmel and Clay Township between the intersection of I-465 / 96<sup>th</sup> Street and 146<sup>th</sup> Street. The northern segment includes the portion of US 31 which transverses the City of Westfield and Washington Township between 146<sup>th</sup> Street and the US 31 / SR 38 intersection.

Changes to this section since the publication of the DEIS:

- Updated summary of existing land use character along the US 31 corridor
- Addition of detailed assessment of potential impacts specific to the Major Moves Alternative

#### ***Southern Segment (I-465 / 96<sup>th</sup> Street to 146<sup>th</sup> Street)***

The visual character of the southern segment is formed largely by the presence of corporate office headquarters, commercial and retail businesses located adjacent to the US 31 corridor and at major cross street intersections. Other less prominent visual elements in this segment include smaller enclaves of residential tracts, wooded lots, and agricultural lands. Refer to the DEIS Section 4.13 for a more detailed description of specific corridor features.

Since the publication of the DEIS, the dominant modern 6-10 story office development pattern contemplated by the City of Carmel continues to evolve with a number of new developments. This is evident by the completed construction of 22 new developments since the DEIS was completed in 2003. The developments are largely within or immediately adjacent to the US 31 overlay district as defined by the City of Carmel. The highest concentrations of these new developments are proximate to the intersections of US 31 and 146<sup>th</sup> St., 131<sup>st</sup> St., Old Meridian St. and 103<sup>rd</sup> St. The character of these developments is consistent with the professional office and commercial uses planned for the US 31 Corridor overlay district, and reinforces the corporate office visual character previously observed in the section of the corridor between 96<sup>th</sup> Street and 146<sup>th</sup> in Carmel.

The dominant visual character of the southern segment is derived from the architectural statement of the individual developments combined with the consistency of land use, and landscape maintenance practices. These characteristics combine to produce a pastoral-like suburban scene. The absence of right-of way fencing heightens the impression of visual connection along and across the corridor. This overall character is the result of intentional land use planning and development controls which include site planning, architectural, landscape, lighting design requirements, as detailed in the Carmel City Code, Chapter 10: Zoning and Subdivisions

***Northern Segment (146<sup>th</sup> Street to SR 38)***

The northern segment of US 31 is a primarily rural section 4-lane divided roadway as described in the DEIS. The visual character along this portion of the corridor is less consistent being composed of a mixture of residential, agricultural, small isolated woodlands, and retail centers at 146<sup>th</sup> and between 169<sup>th</sup> and 191<sup>st</sup> streets. North of 191<sup>st</sup> Street, the landscape is largely undeveloped or agricultural land with scattered light industrial developments. North of 196<sup>th</sup> Street, views from the road are unobstructed to the developed including the retail developments and the light industrial properties. Residential developments adjacent to the corridor are not visible from the road given the topography and existing vegetation. Little new development has occurred along this segment of the corridor, and thus the visual character remains as previously documented in Section 4.13 of the DEIS.

While there are two notable developments planned for tracts of land adjacent to the US 31 corridor north of 146<sup>th</sup> street, they have not been constructed as of this time. These include a sizeable housing development proximate to the SR 32 interchange and a retail development proximate to the 161<sup>st</sup> St. interchange in the city of Westfield.

This section examines both views to and from the road in determining the visual quality impacts of the US 31 alternatives. The area within the visual corridor is almost entirely developed by residential, agricultural, office, retail and industrial land uses. The No-Action Alternative would incur continued suburbanization with the attendant visual and aesthetic impacts. Upgrading US 31 to current freeway standards would affect the views to and from the surroundings differently.

Visual impacts of the Major Moves Alternative have been assessed relative to four design conditions for the main lanes of US 31:

- Main lanes constructed at or nearly at existing grade
- Main lanes constructed in an excavation below grade
- Main lanes supported on earth embankment and bridge structures allowing local streets to underpass US 31
- Local streets supported on earth embankment and bridge structures allowing local streets to overpass US 31

***Condition 1. Main lanes constructed at or nearly at existing grade***

The main lanes constructed at or near existing grade will be the dominant configuration along much of the US 31 corridor and generally comparable to the existing condition. Exceptions will occur at approaches to cross street overpasses and full interchanges where earthen fill cones, abutment walls and bridge structure necessary to support the ramps and cross street overpass will dominate the view. Where existing off right-of-way structures are demolished to make room for the expanded highway and associated interchange facilities the existing view character will also change, such as between 146<sup>th</sup> and 151<sup>st</sup> adjacent to the west side of the right-of-way.

*Condition 2. Main lanes constructed in an excavation below existing grade.*

In these locations the normal panoramic motorist's view will be more constricted and include the adjacent and distant roadways, associated cut slopes, and limited high-angle views of some of the surrounding off right-of-way landscape and improvements. The length of view beyond US 31 will vary depending on the height of the viewer's eye, location within the main lanes, and the height and lateral location of natural and built features adjacent to the right-of-way. The driver's perspective along the corridor will likely be altered in proportion to the change in roadway elevation from the pre-construction condition.

Views of the US 31 corridor from some adjacent properties will also be affected. The presence of earthen embankments and fill cones, overpass and under pass structures and associated retaining walls will combine to alter views across the US 31 corridor. In the location where the corridor is proposed to be depressed, the impact to the view will be less prominent. Placement of the roadway in an excavation will likely reduce visual impacts of the proposed corridor improvements as viewed from adjacent properties. This will be most noticeable at the following locations

- 136<sup>th</sup> St. and Rangeline Road - the length of corridor which deviates from existing grade is approximately 1750 feet
- Between 146<sup>th</sup> St. and 151<sup>st</sup> St. - the length of corridor which deviates from existing grade is approximately 4325 feet

*Condition 3. Main lane supported on earth embankment and bridge structures allow local cross streets to underpass US 31.*

At these locations the main lanes of US 31 will be supported on fill and the cross street will pass under the main lanes. In these locations the driver's perspective will change as a result of the roadbed being elevated substantially to accommodate the cross street underpass. The driver's view will be much less restricted offering longer views of the nearby landscape and adjacent off right-of-way conditions. The elevated roadway will permit more expansive views (as compared to the existing condition) at the following locations:

- City of Carmel underpass interchanges at 106<sup>th</sup>, 116<sup>th</sup>, 136<sup>th</sup>
- City of Carmel underpass (no interchange) at 126<sup>th</sup>, Rangeline Road,
- City of Westfield underpass (no interchange) at 169<sup>th</sup>
- City of Westfield underpass interchange at SR38

*Condition 4. Earth embankment and bridge structures supporting cross streets which overpass the main lanes in the following locations and conditions.*

At these locations the cross street approaches will be supported on fill and the cross street will over pass the main lanes. The driver's perspective will change being more restricted than in the existing condition.

The view of the corridor from properties adjacent to the US 31 corridor will also be affected. The presence of earthen embankments and fill cones, overpass and under pass

structures and associated retaining walls will alter the views across the US 31 corridor. In the location where the corridor is proposed to be depressed, the impact to the view will be less prominent.

- City of Carmel Interchange at 131st
- City of Carmel Interchange at 146<sup>th</sup>
- City of Westfield Interchanges at 151<sup>st</sup>, 161st, SR 32, 191<sup>st</sup>
- City of Westfield Overpass at 181st

#### 4.14 Hazardous Materials Sites

In accordance with ASTM E 1527-05, the corridor assessment was updated to reflect current environmental conditions within the project area. The update included a site inspection, interviews of key individuals, and a review of historical and government records.

Hazardous materials sites located within the project area are identified in Appendix A. The No-Action Alternative would incur no impacts to known hazardous materials sites. While 36 known underground storage tank (UST) facilities, leaking UST (LUST) incidents, and small quantity generators (SQGs) were identified within the vicinity of both Alternative F4 and the Major Moves Alternative, only 34 are close to or within the proposed construction limits.

*Summary of Impacts: Major Moves Alternative*

The Major Moves Alternative will impact five SQGs, 13 LUST incident sites, 17 registered UST sites, and 17 spill sites. The locations of Recognized Environmental Concerns is included in Appendix A.

The following represents a list of potential sites for Phase II Environmental Site Assessments. Exact locations will be determined during the design phase.

Recognized Environmental Concerns:

Map ID	Description
1	<b>McDonalds</b> (former <b>Phillips 66 #020252</b> ), 9566 North Meridian Street, Indianapolis, Indiana historic UST, active LUST
2	<b>Circle K #2279</b> (former <b>Shell Dealer</b> ), 9599 North Meridian Street, Indianapolis, Indiana, active USTs, active LUST
3	<b>Vacant Lot</b> (former <b>Shell Oil</b> ), 9601 North Meridian Street, Indianapolis, Indiana, historic UST and Service Station, active LUST, Spill site, SQG
4	<b>Vacant Lot</b> (former <b>Amoco #10044</b> ), 9602 North Meridian Street, Indianapolis, Indiana, historic UST, and No Further Action (NFA) LUST
5	<b>Gas Line Location #1</b> , south of Jameston Inn, Indianapolis, Indiana, potential spill site
6	<b>Gas Line Location #2</b> , south of Delta Faucet, within vacant lot, Indianapolis, Indiana, potential spill site
7	<b>Gas Line Location #3</b> , north of Meridian Mark I, Carmel, Indiana, potential spill site

- 8 **Gas Line Location #4**, crosses 136<sup>th</sup> Street on the north side of US 31, Carmel, Indiana, potential spill site
- 9 **Gas Line Location #5**, south of Monon Trail, Carmel, Indiana, potential spill site
- 10 **Carmel Custom Refinishing**, 14001 North Meridian Street, Carmel, Indiana, active refurbishing company, historic UST currently within right-of-way
- 11 **Speedway #5468**, 1032 North Rangeline Road, Carmel, Indiana, active UST, active LUST, SQG
- 12 **Gas Line Location #6**, crosses US 31 south of State Road 431 intersection, Carmel, Indiana, potential spill site
- 13 **Gas Line Location #7 and Spill Location**, 146<sup>th</sup> Street and US 31, Carmel, Indiana, spill site
- 14 **Circle K #2281 and Shell Dealer**, 1821 East 151<sup>st</sup> Street, Westfield, Indiana, active UST, active LUST
- 15 **BP Connect**, (former **Amoco Service Station #2287**) 1850 East 151<sup>st</sup> Street, Westfield, Indiana, active UST, historical LUST, SQG
- 16 **Gas Line Location #8**, north of Target store, Westfield, Indiana, potential spill site
- 17 **Gas Line Location #9**, south of South Union Street, Westfield, Indiana, potential spill site
- 18 **Panhandle Eastern Pipeline Company**, intersection of US 31 and 156<sup>th</sup> Street, Westfield, Indiana, potential spill site
- 19 **Gas Line Location #10**, crosses 161<sup>st</sup> Street, north of US 31, Westfield, Indiana, potential spill site
- 20 **Gas Line Location #11**, within US 31 right-of-way from Edward Hines Lumber Company to State Road 32 intersection, Westfield, Indiana, potential spill site
- 21 **Sakrete of Indiana**, 17032 US 31 North, Westfield, Indiana, historic UST
- 22 **Truss Manufacturing Co., Inc**, 17350 US 31 North, Westfield, Indiana, historic LUST, historic UST
- 23 **Automotive Excellence**, 211 Elm Street, Westfield, Indiana, historic service station
- 24 **McDonalds and Circle K #2273**, 633 West Main Street, Westfield, Indiana, active UST, historic LUST
- 25 **Comptons Marathon #1014**, 519 West Main Street, Westfield, Indiana, active service station, historic UST (not currently listed), NFA LUST, and SQG
- 26 **GasAmerica#24**, 516 West Main Street, Westfield, Indiana, active UST, active LUST
- 27 **Snyder Farm & Home Fuel**, 1108 State Road 32 East, Westfield, Indiana, historic UST, Above Ground Storage Tanks (AST)
- 28 **House & Hall Lumber**, 18030 US 31, Westfield, Indiana, active UST along right-of-way

- 29      **Gas Line Location #12**, crosses State Road 32 on north side of US 31, Westfield, Indiana, potential spill site
- 30      **Village Motorsports** (Formerly **Just Vetts**), 18318 US 31 North, Westfield, Indiana, historic UST, active LUST
- 31      **Gas Line Location #13**, crosses 181<sup>st</sup> Street into the US 31 right-of-way, under US 31 into Westfield High School, Westfield, Indiana, potential spill site
- 32      **Gas Line Location #14**, north of 196<sup>th</sup> Street, into Verizon Westfield Adm/Garage Site, Westfield, Indiana, potential spill site
- 33      **Gas Line Location #15**, south of State Road 38, Westfield, Indiana, potential spill site
- 34      **31 Truck and Car Plaza**, 21575 US 31 North, Cicero, Indiana, active USTs, active LUST, know contamination under US 31

## 4.15 Energy

The DEIS assessed the energy consumption needs for the project. The No-Action Alternative would incur no energy consumption beyond that required for general maintenance and upkeep. The Major Moves Alternative will require the same energy commitments as Alternative F4.

**Table 4.15-1  
Annual Operational Energy Consumption**

Alternative	Annual Vehicle Miles Traveled	Average Speed, mph	Operating Energy Consumption, millions of BTUs
Existing (2007)	150,597,900	50	635,595
No-Action (2035)	185,095,560	45	745,017
Build Alternatives <sup>†</sup> (2035)	310,731,000	55	1,390,519

<sup>†</sup> includes Major Moves Alternative

## 4.16 Construction Impacts

There have been no changes to this section since the publication of the DEIS.

General construction impacts associated with the Major Moves Alternative would be the same as the other build alternatives, including Alternative F4.

## 4.17 Permits

In addition to the permitting requirements detailed in the DEIS, a permit for impacts to isolated wetlands will be required by the Indiana Department of Environmental Management.

## 4.18 Short-Term Use of Environment vs. Long-Term Productivity

There have been no changes to or additional analysis within this section since the publication of the DEIS.

General short-term use versus long-term productivity associated with the Major Moves Alternative would be the same as the other build alternatives, including Alternative F4. In summary, long-term productivity is anticipated to be far greater than the short-term impacts associated with the proposed project.

#### **4.19 Irreversible and Irretrievable Commitments of Resources**

There have been no changes to or additional assessments within this section since the publication of the DEIS.

General irreversible and irretrievable resource commitments associated with the Major Moves Alternative would be the same as the other build alternatives, including Alternative F4. In summary, the irreversible and irretrievable commitments of resources required for this project are at an acceptable level.

#### **4.20 Indirect and Cumulative Impacts**

Changes to this section since the publication of the DEIS:

- Impact calculations have been updated to reflect changes in the physical environment
- Addition of detailed assessment of potential impacts specific to the Major Moves Alternative
- Expansion of the impact assessment to include a watershed-level scale of analysis

Land use data was cross-referenced with recent/current development, proposed development, potential future development, and transportation improvement projects. This information was mapped to graphically represent the locations of the land use and development data (Figure 4.20-1).

*Recent/Current Development (Cumulative):* Since issuance of the DEIS, many new developments have been/are being constructed. These are concentrated south of 146<sup>th</sup> Street along the US 31 corridor, as shown in Figure 4.20-1 and include:

##### **Vicinity of I-465 @ US 31 (Appendix A, Sheet 1)**

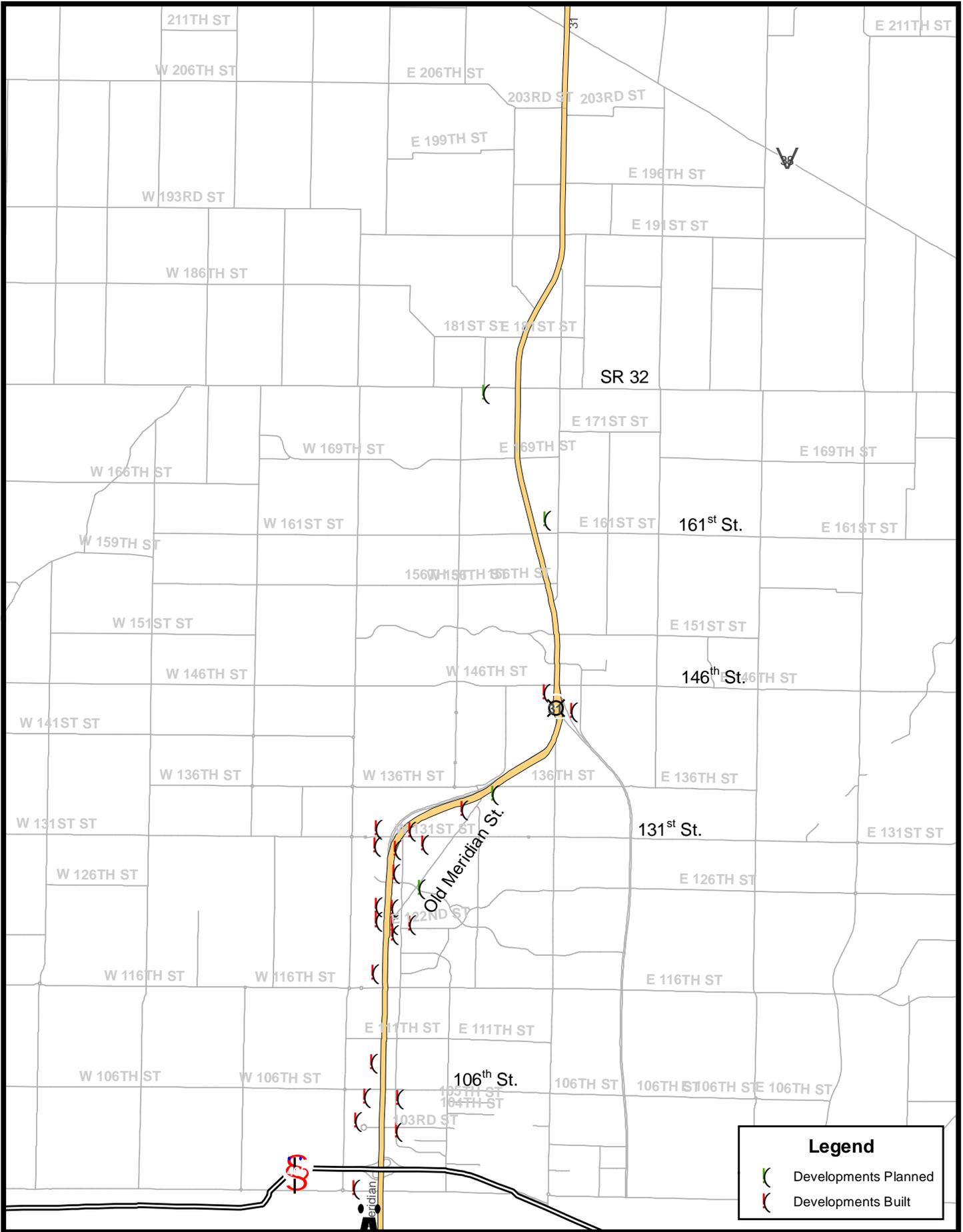
- Office complex southwest quadrant of I-465 and US 31 interchange (Parkwood West)

##### **Vicinity of 103<sup>rd</sup> @ US 31 (Appendix A, Sheets 1 and 2)**

- Office Development west of Illinois Street at 103<sup>rd</sup> St. (House Investments Carmel Office Bldg.)
- IU Medical group bldg expansion west of Illinois Street south of 103<sup>rd</sup> Street
- Office building north of 103<sup>rd</sup> St. East of Pennsylvania St. (Schneider & Co. Inc.)
- Office building north of 103<sup>rd</sup> St. East of Pennsylvania St. (Buford)

##### **Vicinity of 116th @ US 31 (Appendix A, Sheet 3)**

- Medical Facility northwest quadrant of 116<sup>th</sup> St and US 31 intersection (Clarian North Hospital)



**Legend**

-  Developments Planned
-  Developments Built



**Figure 4.20-1**  
**Post-DEIS Corridor Development**  
 Major Moves Alternative  
 Supplemental Draft Environmental Impact Statement  
 Hamilton County, Indiana

**Vicinity of College Drive & Pennsylvania** (North and West of Pennsylvania and College Drive) (**Appendix A, Sheet 3**)

- Medical Office Building (Cornerstone Companies)

**Vicinity of Old Meridian @ US 31** (**Appendix A, Sheets 3 and 4**)

- Hotel building south of Old Meridian St. and US 31 intersection (Renaissance Hotel)
- Assisted Living development northwest quadrant of Old Meridian and Pennsylvania intersection (Sunrise Senior Living)
- Office buildings southeast quadrant of Old Meridian St. and Pennsylvania (Panattoni)
- Medical Office buildings (2) southwest quadrant of Old Meridian St. and Pennsylvania
- Office buildings west of US 31 at Old Meridian St.

**Vicinity of 131<sup>st</sup> @ US 31** (**Appendix A, Sheet 4**)

- Office building northwest quadrant of 131<sup>st</sup> St. and US 31 intersection (CMC Office Development)
- Office building southwest quadrant of 131<sup>st</sup> St. and US 31 intersection
- Lodging development southeast quadrant of 131<sup>st</sup> St. and US 31 intersection (Hilton Gardens Inn)
- Office complex south of 131<sup>st</sup> St. and east of US 31 (Opus Landmark at Meridian) initial phase completed
- Office building northeast quadrant of 131<sup>st</sup> St. and US 31 intersection (Browning) initial phase completed
- Housing Development south of 131<sup>st</sup> St. east of Pennsylvania St. Alexandria (Fairfax Manor)

**Vicinity of 136<sup>th</sup> @ US 31** (**Appendix A, Sheet 5**)

- Addition to Existing Medical Facility at 136<sup>th</sup> St. and US 31 intersection (St. Vincent)

**Vicinity of 146<sup>th</sup> @ US 31** (**Appendix A, Sheet 6**)

- Retail development west of US 31 and south of 146<sup>th</sup> St.(Clay Terrace (Appendix A, Sheet 6)
- Restaurant development between North Keystone Ave. and Lowes Way (Abuelo's) Greyhound Commons
- Greyhound Commons *Proposed Future Development (Cumulative)*: Extensive development of open land is already planned and approved in much of area along the existing alignment. Plans for these proposed developments have been incorporated into the Environmental Features maps (Appendix A). These areas include:
  - Office/retail development northeast quadrant of Old Meridian Street and Pennsylvania (Appendix A, Sheet 3)
  - Office development east of US 31 north of West Smokey Road and US 31 (Justus) (Appendix A, Sheet 5)
  - Retail complex northeast quadrant of 161<sup>st</sup> Street and US 31(Lantern Commons) (Appendix A, Sheet 7)
  - Housing development south and west of SR 32 and US 31 (Winfield Park) (Appendix A, Sheet 9)

*Potential Future Development (Cumulative):* Much of the undeveloped land in the area (agriculture, pasture, wooded, etc.) has been zoned for future development (residential, commercial, or industrial). Though no proposed plans have been accepted, it is highly likely that these areas are being prepared for development.

*Transportation Improvement Projects (Cumulative):* INDOT and/or local transportation improvements planned in or near the project area include:

***Southern Segment (I-465 / 96<sup>th</sup> Street to 146<sup>th</sup> Street)***

- Construction of Keystone Avenue/Parkway, converting the existing arterial to a limited-access parkway from 99<sup>th</sup> Street to US 31 (construction ongoing through 2012);
- Construction of a new interchange from I-465 to 99<sup>th</sup> Street and Keystone Avenue/Parkway (construction date not yet proposed);
- Construction of a new four-lane local roadway, Illinois Street, from 106<sup>th</sup> Street to 116<sup>th</sup> Street (construction date not yet proposed);
- Programmed widening of SR 32 from US 31 to 1.6 miles west of US 31 from two lanes to four lanes (construction ongoing through 2009);
- Increased capacity of SR 32 from US 31 to 2.6 miles east of US 31 (Moontown Road) from two lanes to four lanes (preliminary);
- Reconstruction of I-465 from 0.4 miles east of US 31 to 0.6 miles north of East 56<sup>th</sup> Street, adding one lane in either direction and including improvements to 4 interchanges (construction proposed from 2009-2014);
- Widening of 106<sup>th</sup> Street from 2 lanes to 4 lanes from Pennsylvania Street to College Avenue (construction date not yet proposed);
- Extension of Illinois Street from 106<sup>th</sup> Street to 116 Street (construction date not yet proposed);
- Widening of Guilford Road from 2 lanes to a 3-lane section from 116<sup>th</sup> Street to City Center Drive (construction proposed for 2009)

***Northern Segment (146<sup>th</sup> Street to SR 38)***

- Construction of new East Access Road between Greyhound Pass and 151<sup>st</sup> Street (construction proposed tentatively from 2009 to 2011);
- Widening of Western Way from 146<sup>th</sup> to Greyhound Pass (construction proposed from 2009 to 2010);
- Construction of Greyhound Court from Greyhound Pass to 151<sup>st</sup> Street (construction proposed 2009 or 2010);
- Construction of Union Street Overpass from Greyhound Pass to Union Street (construction date not yet proposed);
- Construction of roundabout and widening of 161<sup>st</sup> from two to four lanes between US 31 and Union Street (construction proposed tentatively from 2009 to 2011);
- Construction of a proposed parkway (approximately 0.25 mile east of US 31) from 161<sup>st</sup> Street to SR 32 (construction date not yet proposed);

- Construction of Union Street extension from 186<sup>th</sup> to 202<sup>nd</sup> (construction proposed tentatively from 2012 to 2016);
- Construction of new collector street between 181<sup>st</sup> and SR 38 (construction date not yet proposed);
- Extension of Oak Ridge Road from SR 32 to 206<sup>th</sup> Street (construction date not yet proposed); and
- Construction of new road from Oak Ridge Road to Grassy Branch Road (construction date not yet proposed).

#### 4.20.1 Analysis

The US 31 corridor was studied from 96<sup>th</sup> Street to 216<sup>th</sup> Street along the existing alignment, inclusive of the watersheds principally found along the corridor including Haverstick, Carmel, Williams, Cool and Hinkle creeks. The investigation included a review of existing road maps, aerial photographs, zoning maps, planning documents, and development plans. The time frame for the analysis of development trends is from present to the 2020 horizon of the *Carmel Consolidated Comprehensive Plan* (2006) and *Westfield -Washington Township Comprehensive Plan* (2007). The following documents were reviewed for purposes of the Indirect and Cumulative Analysis:

- *Carmel Consolidated Comprehensive Plan (Draft B)*, City of Carmel, Indiana. 2006.
- *Clay Carmel Zoning Ordinance*, City of Carmel. February 2008.
- *Cicero/Jackson Township Zoning Map*, Hamilton County Plan Commission. 2006.
- *Overlay Districts, Town of Cicero/Jackson Township Zoning Ordinance*, Ground Rules, Inc. 2006.
- *Comprehensive Plan, Town of Cicero/Jackson Township, Indiana*, Ground Rules, Inc. 2004.
- *Cool Creek Watershed Management Plan*, Clark Dietz, Inc. 2003, updated 2005.
- *Hamilton County Comprehensive Plan Update*, Hamilton County Plan Commission, Conservation Design Forum and Land Strategies, 2006.
- *City of Westfield and Washington Township Zoning Map*, City of Westfield, Indiana. March 2008.
- *Westfield-Washington Township Comprehensive Plan*, McBride Dale Clarion and Teree Bergman, adopted February 2007.
- *Census of Agriculture*, US Department of Agriculture. 2002.
- <http://www.co.hamilton.in.us> (last accessed: May 8, 2008) Hamilton County, Indiana Government Web site
- <http://www.hcalliance.com> (last accessed May 5, 2008). Hamilton County Alliance, Indiana website
- <http://www.carmelchamber.com> (last accessed: May 8, 2008) Carmel Clay Chamber of Commerce Web site
- <http://www.ci.carmel.in.us/services/communityservice.html> (last accessed: May 8, 2008) City of Carmel – Department of Community Services Web site

- <http://www.westfield.in.gov/development/> (last accessed: May 8, 2008) City of Westfield Community Development Web site

### ***Carmel/Clay Township***

Clay Township has experienced tremendous growth in recent years. From 1971 to now, developed land uses (residential, office/retail, public/semi public, and industrial/ manufacturing) have increased. The Carmel Consolidated Comprehensive Plan (draft 2006) Commission has identified the US 31 Corridor as a “Critical Corridor.” Development of vacant properties is being actively encouraged in this area. All vacant properties have either been planned or zoned for future development, and all building between Illinois Street and Pennsylvania Street to be 6 to 10 stories in height. Based on land use trends and planning initiatives, it is likely that development would occur along the US 31 Corridor through Carmel/Clay Township regardless of the US 31 Improvement Project (Cumulative Impacts). Therefore, there are no identified Indirect Impacts in this portion of the corridor.

### ***Westfield/Washington Township***

The US 31 Corridor is slightly less developed through Washington Township. However, the current (2007) Comprehensive Plan shows that the Plan Commission and the Westfield City Council recognize the importance of the corridor for employment and regional commercial uses and the newest zoning map (March 2008) shows the US 31 corridor with an overlay district. The overlay district is intended to guide and control uses in the area so that development occurs in a comprehensive and uniform manner. Details on the overlay district are specified in the zoning code.

The *Westfield/Washington Township Comprehensive Plan* (2007) proposes development along the corridor throughout the city and township north to SR 38. Alternative F4 and the Major Moves Alternative would be located entirely within this urban zone. The entire east side of Washington Township and along the west side of the existing US 31 corridor are identified for proposed development, from 146<sup>th</sup> Street north to SR 38. Zoning for much of this area has been aligned with proposed future development. The limited area of impact north and south of SR 38 is not zoned for development; and MacGregor Park is located northeast of US 31 and SR 38. Therefore, potential Indirect Impacts in this portion of the corridor would be limited to the area immediately south and northwest of SR 38.

## **4.20.2 Historic Impacts Per Resource**

Historic impacts to natural resources (forests, wetlands, streams, and farmland) were analyzed in the DEIS per resource based on available documentation of historic impact activity. This information is supplemented with the following summary of cumulative effects at the watershed level.

## **4.20.3 Watershed Level Analysis**

### ***Affected Watersheds***

The New US 31 Hamilton County Project corridor crosses five watersheds: Haverstick Creek, Williams Creek, Carmel Creek, Cool Creek and Hinkle Creek. The watersheds are comparable in size ranging from 17.7 square miles (Haverstick Creek) to 23.6 square miles (Cool Creek), though varying considerably in intensity of development. Figure 4.20-2 shows each watershed relative to the New US 31 Hamilton County corridor along with the various municipalities in the

project area. A brief description of each follows; information regarding land use is based on the US Department of Agriculture, National Agricultural Statistics Services, 2006.

Haverstick Creek/Howland Ditch. The smallest of the five watersheds at 17.7 square miles, Haverstick Creek is also the most urbanized (high density) at 71 percent with few lands categorized as agriculture or forest. It is situated entirely within the cities of Indianapolis and Carmel. Haverstick Creek watershed is crossed by the corridor in the western reaches of the watershed, and the least of any watersheds along the corridor's length, 4 percent.

Williams Creek. At 22.2 square miles this is the second largest watershed crossed by the New US 31 Hamilton County corridor. It flows south to the White River, and includes portions of the corporate boundaries of the cities of Indianapolis, Carmel, and Westfield and Clay Township. Nearly half, 44 percent of this watershed is categorized as urban (high density) with some agriculture, 8.7 percent, and forest, 4.5 percent. Approximately 17 percent of the New US 31 Hamilton County corridor crosses the Williams Creek watershed.

Carmel Creek. The Carmel Creek watershed is 20.7 square miles in size, and is located within the cities of Carmel, Fishers and Indianapolis. Slightly greater than half of the watershed, 50.7 percent is categorized as urban (high density) with minor areas devoted to agriculture (4.3 percent) and forest (2.8 percent). Less than 10 percent of the Carmel Creek watershed is crossed by the New US 31 Corridor.

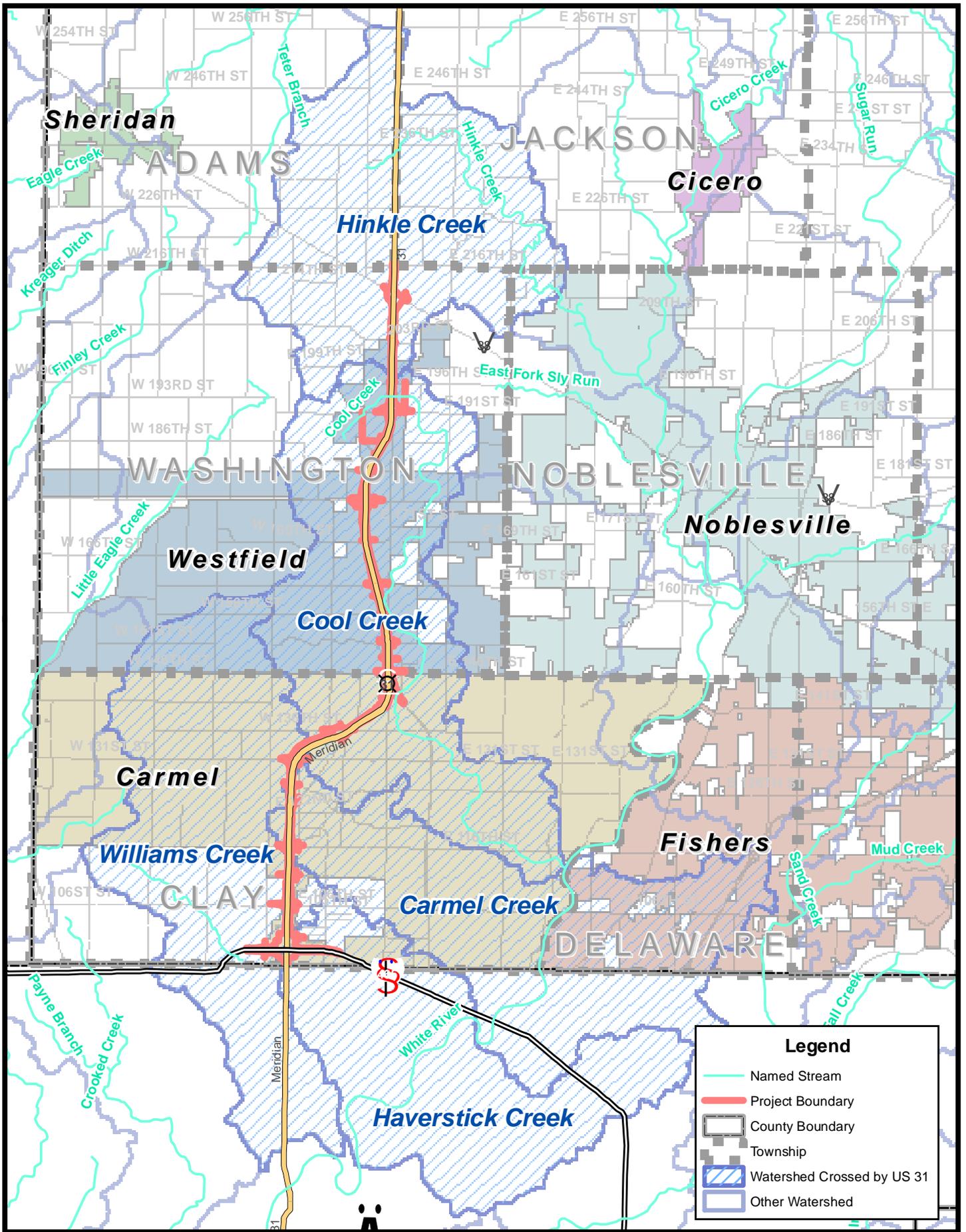
Cool Creek (Grassy Branch/Little Cool Creek). The Cool Creek watershed is the largest of the five watersheds crossed by the proposed project, 23.6 square miles. Located within the corporate boundaries of Carmel and Westfield, it is transitional in land use and intensity of development from the preceding watersheds. Approximately 40 percent is categorized as urban (medium density), while there is a notable increase in agriculture, 16.9 percent. Forest lands are comparable at 3.6 percent. The Cool Creek Watershed, however, contains the largest portion (55 percent) of the New US 31 Hamilton County corridor, crossing centrally through the watershed.

Hinkle Creek (Jones Ditch). This watershed is comparable in size to Carmel Creek at 20.1 square miles. It encompasses the project's northern terminus within the City of Westfield, Washington Township and Adams Township. It is the least developed of the five watersheds crossed with only 2.2 percent urban (medium density), while dominated by agricultural lands at 60 percent. The watershed also contains the largest area of forest, 9 percent. Approximately 15 percent of the New US 31 Hamilton County corridor crosses the Hinkle Creek watershed.

*Projected Change in Watershed Land Use and Intensity of Development.*

To assess potential cumulative effects at a watershed level existing land use (2006) was compared to future land use conditions as described in various comprehensive plans of the affected jurisdictions as listed in Section 4.20.1.

2006 Land Use. The data was aggregated from the U.S. Department of Agriculture, National Resource Conservation Service's National Cartography & Geospatial Center, National Agricultural Statistics Service, Cropland Data Layer – 2006.



**Legend**

- Named Stream
- Project Boundary
- County Boundary
- Township
- Watershed Crossed by US 31
- Other Watershed

**MAJOR MOVES**  
**THE NEW US 31**  
 HAMILTON COUNTY



**Figure 4.20-2**  
**Cumulative Effects Study Area**  
 Major Moves Alternative  
 Supplemental Draft Environmental Impact Statement  
 Hamilton County, Indiana

Future Land Use. Comprehensive Plans were reviewed from The City of Carmel/Clay Township, Westfield/Washington Township, Hamilton County, and the Village of Cicero/Jackson Township (see Section 4.20.1 for a listing of the plans). The plans were aggregated to identify basic categories of development for the following categories:

- urban/developed: includes all densities of residential, commercial, employment, mixed use and other developed uses
- agriculture (rural)
- green areas: woodlands, pasture, wetlands, grassland and other categories

From this information several changes in land density may be anticipated if the plans were developed as anticipated by the respective local jurisdictions:

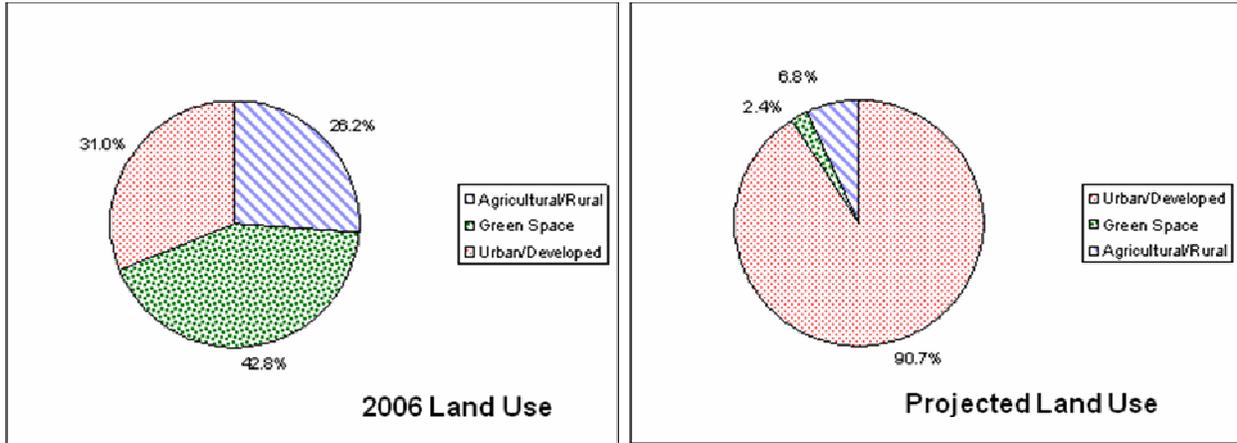
- urban/developed: increase from 31.0 percent (urban) to 90.7 percent (developed)
- agriculture: decrease from 26.2 percent (agriculture) to 6.8 percent (rural)
- green areas: decrease from 42.8 percent to 2.4 percent

It is important to note that both Carmel/Clay Township and Westfield/Washington Township recognize open space and recreation as important elements of their respective communities. Accordingly, each has established parks and open space, and enacted zoning regulations to establish minimum percentages of open space for different types of development. The green areas for the Future Condition are, therefore, understated and are instead imbedded within the urban/developed category – precluding a direct comparison of this land use category.

Of the five watersheds previously described it should be expected that those watersheds with the highest percentage of agriculture and undeveloped lands, Hinkle Creek and Cool Creek, would likely sustain a disproportionate percentage of the planned future development. This may be most apparent in the southern and eastern Westfield and along the employment corridors identified for US 31 and SR 32. In conclusion it should be anticipated that the cumulative impacts of the US New US 31 Hamilton County corridor when combined with those associated with other planned developments and transportation improvement projects, will not be distributed proportionally among the project area watersheds, but to those less developed.

Several studies have been, or are underway to address potential adverse affects at the watershed level. The Cool Creek Watershed Plan (2003, updated 2005) was prepared for the affected jurisdictions within the watershed (City of Westfield, City of Carmel and Hamilton County) and includes recommendations to correct existing storm water problems, and limit future problems, while suggesting strategic improvements to maintain water quality and protect bio-diversity of the watershed. Currently, two additional watershed studies are underway in the project area. The Williams Creek Watershed Master Plan is slated to begin this summer and will focus on flooding and water quality concerns in the Williams Creek watershed. Likewise, a larger regional initiative is on-going in the 16-county Upper White River Watershed (commissioned in 2007) to similarly address the importance of watershed management, explore cross-county land use planning, and specifically outline strategies to address the consequences of future development to this regionally important river and its four major drinking water reservoirs.

**Figure 4.20-3  
Projected Change in Watershed Land Use**



**4.20.4 Conclusions**

The City of Carmel/Clay Township and the City of Westfield/Washington Township have experienced significant growth in recent years. Planning documents from both these communities indicate continued growth through at least the year 2020. Recent, proposed, and potential development accounts for the majority of vacant parcels within the project area. Only the northwestern-most portion of the proposed build alternatives is vacant with no indication of development. Cumulative Impacts are greater than Direct Impacts, which are proportionately larger than Indirect Impacts (Table 4.20-1). Cumulative Impacts to wetlands are similar for both alternatives. Cumulative Impacts to forests are slightly greater for Alternatives F4 than the Major Moves Alternative. Prime farmland Cumulative Impacts are greater for the Major Moves Alternative. Impacts to streams are greater for the F4 Alternative.

*Summary of Impacts: Major Moves Alternative*

The Major Moves Alternative may incur approximately 1 acre of indirect forest impacts, 22 acres of indirect prime farmland impacts, and 280 linear feet of indirect stream impacts. These are considerably less than the cumulative impacts expected to occur as the project area continues to develop and suburbanize (forest - 436 acres, wetlands – 61.1 acres, prime farmland – 654, and streams - 26,583 linear feet). Watershed impacts are expected to be proportionally larger for Cool Creek and Hinkle Creek, given the availability of agriculture and low density development in the City of Westfield/Washington Township when compared to the more intensively development watersheds of Haverstick, Carmel and Williams creeks.

**Table 4.20-1  
Indirect and Cumulative Impacts by Resource**

Resource	Alternatives	Cumulative Impacts			Total	Indirect Impacts <sup>4</sup> Total	Direct Impacts <sup>5</sup> Total
		Recent <sup>1</sup>	Proposed <sup>2</sup>	Potential <sup>3</sup>			
Forest*	F4	13	42	392	447	1	29.8
	Major Moves	13	40	383	436	1	30.9
Wetland*	F4	6.1	2.3	54	62.4	0	5.54
	Major Moves	6.1	2.0	53	61.1	0	6.77
Prime Farmland*	F4	12	20	693	725	20	62.3
	Major Moves	12	15	654	681	22	89.1
Streams <sup>†</sup>	F4	665	878	26,470	28,013	284	7,882
	Major Moves	665	878	25,040	26,583	280	8,313

Sources: Hamilton County Plan Commission, Hamilton County Alliance

\* Measured in acres

† Measured in linear feet

<sup>1</sup> Development that has been recently completed or is currently under construction

<sup>2</sup> Areas of proposed development with existing site plans

<sup>3</sup> Undeveloped land (agricultural or natural) that is zoned for development, but for which no proposed plans exist.

<sup>4</sup> Undeveloped land zoned agricultural may be developed with or without the US 31 project

<sup>5</sup> Acreage immediately impacted by construction of US 31 improvements