# CHAPTER IV
# Environmental Consequences

Environmental consequences that could result from implementation of the I-70 improvement alternatives under consideration for Section of Independent Utility (SIU) 1 are analyzed in this chapter and mitigation measures are recommended. As described in Chapter II, the alternatives under consideration include the No-Build Alternative and 13 Build Alternatives. The 24 miles (39 kilometers) of SIU 1 vary from an urban setting in the west near Kansas City to a rural setting in the east toward Odessa. Given these variances, the potential environmental consequences are described and compared using the five roadway subsections that were defined in Chapter II.

- Subsection 1 – I-470 to MM 19 (East of Woods Chapel Rd.)
- Subsection 2 – MM 19 (East of Woods Chapel Rd.) to MM 22 (East of Adams Dairy Pkwy.)
- Subsection 3 – MM 22 (East of Adams Dairy Pkwy.) to MM 25 (East of Route AA/BB)
- Subsection 4 – MM 25 (East of Route AA/BB) to MM 29 (East of Route H/F)
- Subsection 5 – MM 29 (East of Route H/F) to MM 39 (East of County Rd. 96/Johnson Rd.)

## A. Land Use and Socioeconomic Impacts

This discussion of land use and socioeconomic impacts that may occur as a result of the project addresses a variety of issues including:

- Land use impacts and their compatibility with existing and future land use;
- Displacement and relocation of residences and businesses; and
- Social impacts and potential environmental justice issues.

One important consideration with regard to land use and socioeconomic impacts associated with the Build Alternatives is the extended timeframe between completion of the Second Tier Study in 2005 and the date construction activities would be expected to begin. Due to this considerable timeframe and the timeframe between initiation of the first construction contract and completion of the last construction contract (potentially over 20 years), local governments, businesses (owners and tenants), residents (owners and renters) and the Missouri Department of Transportation (MoDOT) have an extended period within which to anticipate, plan for and resolve many land use, community planning and socioeconomic impact issues. One drawback associated with this long timeframe, however, is that land use issues may arise between completion of the study and the initiation of construction that would complicate right of way acquisition or result in additional impacts, especially given the lack of funding for early right of way acquisition and other land use controls in most areas along SIU 1. The following discussion focuses on existing and reasonably foreseeable issues, but does not speculate in relation to these future possibilities.

# 1. Land Use Impacts

## a. No-Build Alternative

The No-Build Alternative would have some direct impacts on the existing land use patterns along the I-70 corridor. Development would likely continue at its present pace and site specific modifications of I-70 access control locations would likely continue as well. Developments, such as the Factory Outlet Mall in Odessa, have necessitated such spot improvements, in this case, the provision of a slip-ramp to the frontage road. It is likely that other spot improvements in traffic and access control would be necessary to maintain operation integrity and safety on the interstate highway.

## b. Build Alternatives

Impacts to existing land uses are through direct acquisition of right of way for highway construction. Land use impacts, therefore, reflect the acquisition and conversion of land uses outside of the existing highway right of way. The amount and type of land that would be acquired as a result of the proposed I-70 improvements in SIU 1 is presented in Table IV-1.

Impacted land uses are classified as agricultural/undeveloped, residential, commercial, industrial, public/semi-public, airport/railroad and parks/recreation. Agricultural/undeveloped land use includes farmland or vacant areas that have been cleared for agricultural purposes or those properties where no development exists. Much of the undeveloped land that would be impacted is located in the eastern portion of SIU 1 where land uses are more suburban and rural than in the western portion. Public/semi-public land use encompasses such uses as cemeteries, churches, fraternal organizations, schools and public utilities. These individual uses are separated and displayed on the land use exhibits but have been combined in Table IV-1.

**Table IV-1: Land Use Impacts**

| Alternative | Agricultural/ Undeveloped | Single Family Residential | Multi-Family Residential | Commercial | Industrial | Public/ Semi-Public | Airport, Railroad | Park/ Recreation | Total |
|---|---|---|---|---|---|---|---|---|---|
| No-Build | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | | | | |
| 1-1 | 18.9 (7.6) | 0.3 (0.1) | 0.2 (0.1) | 6.5 (2.6) | 0.3 (0.1) | 0.1 (0.03) | 0.0 (0.0) | 0.0 (0.0) | 26.3 (10.6) |
| 1-2 | 17.7 (7.2) | 0.3 (0.1) | 0.2 (0.1) | 12.8 (5.2) | 0.3 (0.1) | 0.1 (0.03) | 0.0 (0.0) | 0.0 (0.0) | 31.4 (12.7) |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | | | | |
| 2-1 | 0.4 (0.2) | 0.1 (0.0) | 1.4 (0.6) | 8.6 (3.5) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 10.5 (4.3) |
| 2-2 | 0.4 (0.2) | 0.1 (0.0) | 1.4 (0.6) | 12.8 (5.2) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 14.7 (6.0) |

| Alternative | Agricultural/ Undeveloped | Single Family Residential | Multi-Family Residential | Commercial | Industrial | Public/ Semi-Public | Airport, Railroad | Park/ Recreation | Total |
|---|---|---|---|---|---|---|---|---|---|
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | | | | |
| 3-1 | 23.2 (9.4) | 0.7 (0.3) | 0.0 (0.0) | 15.3 (6.2) | 0.9 (0.4) | 3.0 (1.2) | 0.0 (0.0) | 0.0 (0.0) | 43.1 (17.5) |
| 3-2 | 22.4 (9.0) | 0.7 (0.3) | 0.0 (0.0) | 14.8 (6.0) | 0.9 (0.4) | 3.0 (1.2) | 0.0 (0.0) | 0.0 (0.0) | 41.8 (16.9) |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | | | | |
| 4-1 | 114.3 (46.4) | 14.0 (5.7) | 2.1 (0.8) | 18.9 (7.6) | 1.7 (0.7) | 0.0 (0.0) | 3.0 (1.2) | 0.0 (0.0) | 154.3 (62.4) |
| 4-2 | 93.4 (37.8) | 10.5 (4.2) | 0.9 (0.4) | 14.7 (5.9) | 1.7 (0.7) | 0.0 (0.0) | 3.0 (1.2) | 0.0 (0.0) | 124.2 (50.2) |
| 4-3 | 61.6 (24.9) | 6.2 (2.5) | 0.9 (0.4) | 14.2 (5.8) | 1.7 (0.7) | 0.0 (0.0) | 3.0 (1.2) | 0.0 (0.0) | 87.6 (35.5) |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | | | | |
| 5-1 | 252.5 (102.2) | 11.4 (4.6) | 0.0 (0.0) | 7.0 (2.8) | 0.5 (0.2) | 0.8 (0.3) | 0.6 (0.2) | 0.0 (0.0) | 272.8 (110.4) |
| 5-2 | 258.9 (104.8) | 11.4 (4.6) | 0.0 (0.0) | 7.2 (2.9) | 0.2 (0.1) | 0.8 (0.3) | 0.6 (0.2) | 0.0 (0.0) | 279.1 (113.0) |
| 5-3 | 259.2 (104.9) | 11.0 (4.5) | 0.0 (0.0) | 7.0 (2.8) | 0.5 (0.2) | 0.8 (0.3) | 0.6 (0.2) | 0.0 (0.0) | 279.1 (112.9) |
| 5-4 | 265.6 (107.5) | 11.0 (4.5) | 0.0 (0.0) | 7.2 (2.9) | 0.2 (0.1) | 0.8 (0.3) | 0.6 (0.2) | 0.0 (0.0) | 285.4 (115.5) |

- Indicates the Recommended Preferred Alternative.

*Values are in acres / (hectares)*

Land use impacts would vary throughout the SIU 1 Project Area due to the level of improvements being made. The redesign of existing interchanges would require additional right of way to accommodate the wider I-70 and meet guidelines for access management. Presently, most of the area around the interchanges in SIU 1 is developed. The Woods Chapel Road and Route 7 interchanges contain large commercial nodes. Land use impacts at these locations would be higher due to the density of existing development. Other land use impacts would occur where frontage roads would be extended and redesigned along I-70 past Oak Grove where the right of way footprint changes from an urban to a rural section.

Based on the land use impacts shown in Table IV-1, a preferred alternative based on the smallest amount of land would include Build Alternatives 1-1, 2-1, 3-2, 4-3 and 5-1 and would utilize approximately 439 acres (178 hectares). The greatest amount of land use impacts would potentially be 529 acres (214 hectares). The Recommended Preferred Alternative would impact 457 acres (185 hectares).

### c. Compatibility with Existing and Future Land Use

The communities in the SIU 1 Project Area recognize the influence I-70 has on their overall growth and development. Local land use plans encourage the continual development of mixed

commercial and industrial uses at interchanges, which serve as connections to the residential base of the communities. The improvements proposed for I-70 in SIU 1 support these planning efforts and would continue to provide compatibility with local land uses and the local transportation network in each community.

### d. Mitigation

Any of the proposed Build Alternatives would result in the conversion of land uses from existing conditions to that of a transportation facility. Counties and townships could develop zoning regulations to minimize undesired or unregulated development within or near the improvement. Zoning regulations could also enhance protection of natural resources, cultural resources and important community resources located in areas adjacent to the SIU 1 Project Area.

## 2. Socioeconomic Impacts

### a. No-Build Alternative

The No-Build Alternative would have socioeconomic impacts including those that might occur during the course of planned interchange improvements or minor highway upgrades. Additional impacts would include continued inefficiencies in the movement of goods and services, emergency responders and fuel consumption; and increasing crash rates.

### b. Build Alternatives

**Acquisition Impacts**
The Build Alternatives for SIU 1 would require widening of the existing highway and reconstructing and/or relocating existing interchanges. Additional right of way needed for these improvements would necessitate the relocation of some existing households, businesses and other facilities. Exhibits IV-1 through IV-17 show the Recommended Preferred Alternative (RPA) in relation to existing buildings and land uses. Buildings located within the approximate new right of way were considered to be displacements. The number of residences and estimated number of residents that would be displaced, the number of businesses and estimated number of employees that would be displaced, the total area and the number of total and partial parcels to be acquired for the Build Alternatives are presented in Table IV-2. Property acquisition would include the purchase of vacant land, farmland, residential land, homes (including single-family, multi-family and mobile homes), businesses and land associated with public uses.

There is no correlation between the business acquisitions and the parcel acquisitions. Businesses can be acquired, yet the parcel itself can be taken partially or taken fully. Parcel acquisitions were based on the proposed new right of way, not the business acquisitions.

Based on the Acquisition Impacts associated with the Build Alternatives, Table IV-2 indicates that a preferred alternative would include Build Alternatives 1-1, 2-1, 3-1, 4-3 and either 5-3 or 5-4.

**Table IV-2: Property Acquisitions and Costs**

| Alternative | Number of Single Family Homes | Number of Multi Family Units | Number of Mobile Homes | Number of Residents[1] | Number of Business[2]/ Employees[3] | Total Area (acres/hectares) | Number of Parcel Acquisitions Total/Partial | Right of Way Cost (Millions) |
|---|---|---|---|---|---|---|---|---|
| No-Build | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | | | |
| 1-1 | 0 | 0 | 0 | 0 | 3 / 38 | 26.3/10.6 | 4 / 47 | $13.6 |
| 1-2 | 0 | 0 | 0 | 0 | 5 / 63 | 31.4/12.7 | 7 / 47 | $25.8 |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | | | |
| 2-1 | 0 | 4 | 0 | 10 | 8 / 100 | 10.5/4.3 | 9 / 61 | $25.9 |
| 2-2 | 0 | 4 | 0 | 10 | 10 / 125 | 14.7/6.0 | 10 / 63 | $34.2 |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | | | |
| 3-1 | 1 | 0 | 0 | 3 | 1 / 13 | 43.1/17.5 | 7 / 58 | $16.2 |
| 3-2 | 1 | 0 | 0 | 3 | 2 / 25 | 41.8/16.9 | 7 / 57 | $22.5 |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | | | |
| 4-1 | 29 | 20 | 0 | 123 | 3 / 38 | 154.3/62.4 | 45 / 93 | $27.2 |
| 4-2 | 28 | 0 | 0 | 70 | 2 / 25 | 124.2/50.2 | 45 / 90 | $20.3 |
| 4-3 | 20 | 0 | 0 | 50 | 2 / 25 | 87.6/35.5 | 45 / 88 | $20.2 |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | | | |
| 5-1 | 7 | 0 | 9 | 40 | 3 / 38 | 272.8/110.4 | 0 / 23 | $13.0 |
| 5-2 | 7 | 0 | 9 | 40 | 3 / 38 | 279.1/113.0 | 0 / 24 | $13.0 |
| 5-3 | 6 | 0 | 9 | 38 | 4 / 50 | 279.1/112.9 | 4 / 49 | $12.6 |
| 5-4 | 6 | 0 | 9 | 38 | 4 / 50 | 285.4/115.5 | 4 / 50 | $12.7 |

- Indicates the Recommended Preferred Alternative.

1 - The estimated number of residents that would require total relocation is based on an average household size of 2.5.
2 - The number of businesses that would require relocation, partially impacted businesses are not listed.
3 - The estimated number of employees is based on an average of 12.5 employees per business.

### Business Impacts

Potentially displaced businesses associated with the Build Alternatives are shown in Table IV-3. The majority of these displacements would involve the acquisition of the business and partial acquisition of the property. Some business owners may choose to relocate on available land in the SIU 1 Project Area, while some may be able to rebuild on the remaining property, provided any new structures are in compliance with land use regulations.

**Table IV-3: Potential Business Acquisitions**

| Alternative | Business Name | Business Name | Business Name |
|---|---|---|---|
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | |
| 1-1 | Amoco | Commercial Business[1] | garage |
| 1-2 | Commercial Business[1] | Interstate Inn | Vacant Commercial Bldg. |
| | Commercial Business[1] | McDonald's | |

| Alternative | Business Name | Business Name | Business Name |
|---|---|---|---|
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | |
| 2-1 | Commercial Business[1] | Jefferson Place Law Offices | Sinclair Gas Station |
| | Corinthian Mortgage Corp. | Motel 6 | Vacant Restaurant |
| | Ibex Climbing Gym | Office | |
| 2-2 | Commercial Business[1] | Motel 6 | Texaco |
| | Communication Tower | Office | Vacant Restaurant |
| | Corinthian Mortgage Corp. | Ramada Limited | |
| | Jefferson Place Law Offices | Sinclair Gas Station | |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | |
| 3-1 | Pilot/Subway | | |
| 3-2 | Kozy Inn | Pilot/Subway | |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | |
| 4-1 | Cooper's Trailer Corral | Furry Friends Pet Grooming | West Central Electric Co-Op |
| 4-2 | Furry Friends Pet Grooming | West Central Electric Co-Op | |
| 4-3 | Furry Friends Pet Grooming | West Central Electric Co-Op | |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | |
| 5-1 | Commercial Business[1] | Commercial Business[1] | Countryside RV Park Garage |
| 5-2 | Commercial Business[1] | Commercial Business[1] | Countryside RV Park Garage |
| 5-3 | Commercial Business[1] | Communication Tower | |
| | Commercial Business[1] | Countryside RV Park Garage | |
| 5-4 | Commercial Business[1] | Communication Tower | |
| | Commercial Business[1] | Countryside RV Park Garage | |

- Indicates the Recommended Preferred Alternative.

1 - The names of some commercial businesses could not been field-verified.

The acquisition of businesses would also cause impacts to employment levels in the SIU 1 Project Area. No major employers in SIU 1 would be displaced and no significant job losses would occur. Based on the number and type of businesses that would potentially be acquired and depending on the Build Alternatives selected, I-70 improvements in SIU 1 could impact between 214 and 301 jobs. These job losses would not occur at one time as land acquisition and construction would occur over several years depending on funding availability and scheduling. It is likely that job losses would be offset by business redevelopment in the corridor.

In addition to direct acquisition of some businesses in the corridor, other businesses would be impacted through partial purchase of their property. These types of impacts would include changes in access to the property, changes in circulation and loss of parking or other property associated with the business. Table IV-4 provides a list of these businesses that would not be acquired, but would experience a partial functional property loss.

**Table IV-4: Businesses Partially Impacted**

| Alternative | Business Name | Business Name | Business Name |
|---|---|---|---|
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | |
| 1-1 | Blue Springs Collision Center | KFC/Taco Bell | Waffle House |
| | Blue Springs Ford | McDonald's | Wise Guy's Bar & Grill |
| | Conoco | UMB Bank | |
| | Del D's Pub & Grill | Vacant | |

| Alternative | Business Name | Business Name | Business Name |
|---|---|---|---|
| 1-2 | American Inn | Del D's Pub & Grill | Wise Guy's Bar & Grill |
| | Blue Springs Collision Center | KFC/Taco Bell | Waffle House |
| | Blue Springs Ford | Safety Mini Storage | |
| | Conoco | UMB Bank | |
| | | | |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | |
| 2-1 | 84 Lumber | Hampton Inn | Strip Mall |
| | Advanced Tax Service | Jiffy Lube | Strip Mall |
| | Amoco | Long John Silvers | Strip Mall |
| | Applebees | McDonald's | Subway |
| | Bob Evans | Molle Chevrolet | Ramada Limited |
| | Blue Springs Ford Wholesale | Nursery-Village Gardener | Texas Tom's |
| | Conoco | O'Reilly's | Winstead's |
| | Denny's | Old Republic Title | Sleep Inn |
| | Enterprise Rental | Phillips 66 | |
| | Erickson Veterinarian | Quality Inn | |
| 2-2 | 84 Lumber | Erickson Veterinarian | Old Republic Title |
| | Advanced Tax Service | Hampton Inn | Phillips 66 |
| | American Sterling Bank | Ibex | Quality Inn |
| | Amoco | Jiffy Lube | Sleep Inn |
| | Applebees | Long John Silvers | Strip Mall |
| | Blue Springs Ford Wholesale | McDonald's | Strip Mall |
| | Bob Evans | Molle Chevrolet | Strip Mall |
| | Conoco | Nursery-Village Gardener | Subway |
| | Denny's | Office | Texas Tom's |
| | Enterprise Rental | O'Reilly's | Winstead's |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | |
| 3-1 | Comfort Inn | Office Building | Strip Mall |
| | Golf Cart & Tractor Repair | Phillips 66 | Travelodge |
| | McLeroy Oil Co. | Safety Storage | |
| | Office | Sonic | |
| 3-2 | Comfort Inn | Phillips 66 | Travelodge |
| | McLeroy Oil Co. | Safety Storage | |
| | Office | Sonic | |
| | Office Building | Strip Mall | |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | |
| 4-1 | Bank of Jacomo | KFC/Taco Bell | Speedco Truck Lube |
| | Commercial Bldg. and Garage | KOA Campgrounds | TA Travel Center |
| | Days Inn | McDonald's | Truck Wash |
| | Econolodge | PT's Family Restaurant | Waffle House |
| | Gas Station - Vacant | Quick Trip | Xtreme Marine |
| | Hardee's | Space for Lease | |
| 4-2 | Bank of Jacomo | Hardee's | Space for Lease |
| | Commercial Bldg. and Garage | KFC/Taco Bell | Speedco Truck Lube |
| | Copper's Trailer Corral | KOA Campgrounds | TA Travel Center |
| | Days Inn | McDonald's | Truck Wash |
| | Econolodge | PT's Family Restaurant | Waffle House |
| | Gas Station - Vacant | Quick Trip | Xtreme Marine |

| Alternative | Business Name | Business Name | Business Name |
|---|---|---|---|
| 4-3 | Bank of Jacomo | Hardee's | Space for Lease |
| | Commercial Bldg. and Garage | KFC/Taco Bell | Speedco Truck Lube |
| | Cooper's Trailer Corral | KOA Campgrounds | TA Travel Center |
| | Days Inn | McDonald's | Truck Wash |
| | Econolodge | PT's Family Restaurant | Waffle House |
| | Gas Station - Vacant | Quick Trip | Xtreme Marine |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | |
| 5-1 | Countryside Family Center | Odessa Storage | Service Garage |
| | Countryside RV Park | RV Park Office | |
| 5-2 | Countryside Family Center | Odessa Storage | Service Garage |
| | Countryside RV Park | RV Park Office | |
| 5-3 | Countryside Family Center | Odessa Storage | Service Garage |
| | Countryside RV Park | RV Park Office | |
| 5-4 | Countryside Family Center | Odessa Storage | Service Garage |
| | Countryside RV Park | RV Park Office | |

- Indicates the Recommended Preferred Alternative.

Planning and zoning regulations exist for most of the SIU 1 Project Area. Communities have planned for continued commercial and industrial uses at the interchanges in SIU 1 either through zoning regulations, future land use planning or both. Vacant land along I-70 and at the interchanges is available throughout SIU 1, but is more abundant in eastern Jackson County and Lafayette County. From the acquisition survey performed, it appeared that there were enough vacancies in strip malls and other nearby commercial complexes that many of the businesses could be relocated within their same respective general area. Sufficient vacant and undeveloped land is also available in the SIU 1 Project Area to provide for reestablishment of businesses that would be acquired for the new I-70 transportation facility.

### Tax District Impacts

The acquisition of land and improvements for right of way associated with I-70 improvements would result in the direct loss of property that is subject to property taxes by local taxing districts. The reduction of assessed valuation for major taxing districts in Jackson and Lafayette Counties by alternative is shown in Table IV-5.

**Table IV-5: Potential Impacts to Taxing Districts**

| Taxing District | Total 2003 Assessed Value | Alternatives Within Taxing District | Estimated Reduction of Assessed Value | Percentage Reduction |
|---|---|---|---|---|
| **Jackson County** | $5,977,731,919 | | | |
| Blue Springs R-IV School District | $830,026,506 | 1-1 | $723,800 | 0.1% |
| | | 1-2 | $1,474,100 | 0.2% |
| | | 2-1 | $2,197,900 | 0.3% |
| | | 2-2 | $2,719,100 | 0.3% |
| Grain Valley R-V School District | $116,820,772 | 3-1 | $569,000 | 0.5% |
| | | 3-2 | $565,700 | 0.5% |
| | | 4-1 | $86,300 | 0.1% |
| | | 4-2 | $82,300 | 0.1% |
| | | 4-3 | $82,300 | 0.1% |

| Taxing District | Total 2003 Assessed Value | Alternatives Within Taxing District | Estimated Reduction of Assessed Value | Percentage Reduction |
|---|---|---|---|---|
| Oak Grove R-VI* School District | $78,335,122 | 4-1 | $1,094,500 | 1.4% |
| | | 4-2 | $1,001,100 | 1.3% |
| | | 4-3 | $877,100 | 1.1% |
| Central Fire District | $597,894,215 | 1-1 | $722,900 | 0.1% |
| | | 1-2 | $1,473,100 | 0.3% |
| | | 2-1 | $915,000 | 0.2% |
| | | 2-2 | $2,719,100 | 0.5% |
| | | 3-1 | $563,800 | 0.1% |
| | | 3-2 | $565,600 | 0.1% |
| Sni-Valley[1] Fire District | $100,778,023 | 3-1 | $200 | 0% |
| | | 3-2 | $100 | 0% |
| | | 4-1 | $1,279,000 | 1.3% |
| | | 4-2 | $1,035,200 | 1.0% |
| | | 4-3 | $351,300 | 0.4% |
| | | 5-1 | $101, 300 | 0.1% |
| | | 5-2 | $101, 300 | 0.1% |
| | | 5-3 | $101,200 | 0.1% |
| | | 5-4 | $101,200 | 0.1% |
| **Lafayette County** | $206,833,421 | | | |
| Odessa Fire District | $60,320,914 | 5-1 | $418,300 | 0.7% |
| | | 5-2 | $401,100 | 0.7% |
| | | 5-3 | $408,300 | 0.7% |
| | | 5-4 | $391,100 | 0.6% |
| Odessa R-VII School District | $75,590,637 | 4-1 | $98,900 | 0.1% |
| | | 4-2 | $99,100 | 0.1% |
| | | 4-3 | $104,300 | 0.1% |
| | | 5-1 | $510,100 | 0.7% |
| | | 5-2 | $492,800 | 0.7% |
| | | 5-3 | $481,100 | 0.6% |
| | | 5-4 | $463,900 | 0.6% |
| *Source: County Clerks Office, Jackson and Lafayette Counties* | | | | |

- Indicates the Recommended Preferred Alternative.

1 - Portions of the district are located in both Jackson and Lafayette Counties.

Assessed value reductions would be approximately one percent or less in all of the taxing districts for all alternatives examined in the SIU 1 Project Area. Interstate 70 improvements in these taxing districts would include acquisition of several commercial properties at interchanges. The acquisition of high valued properties in smaller taxing districts would result in a larger percentage reduction compared to the overall countywide taxing districts. These taxing districts have experienced large increases in assessed value due to new construction over the past five years. It is expected that this pace of new development will continue to occur in the future. Because land acquisition associated with this project is not expected to occur for several years (depending on funding), the base assessed value will continue to increase, with a resulting decrease in the percentage reduction of assessed value.

Tax revenue loss in the SIU 1 Project Area as a result of converting taxable land into tax exempt is expected to be short-term as most displaced residents and businesses would likely

relocate within the county or region or at improved interchanges along I-70. Communities within the SIU 1 Project Area use their location on I-70 to promote local economic development. New development has occurred in recent years at several rural interchanges. The availability of utilities and services in these areas has increased the attractiveness for new development. Between 1998 and 2003, sales tax increases have occurred in communities located in and around the SIU 1 Project Area due, in part, to business activity along the interstate. Existing commercial land and commercial zoning along the interstate and at interchanges provides opportunities for future development which would offset the initial reduction in assessed value of taxing districts resulting from property acquisition for I-70 improvements.

**Availability of Housing**

Census data indicates a growth trend in the eastern suburbs of Kansas City between 1980 and 2000. A survey of local real estate listings in June 2004 shows a number of housing units for sale in the area. Although this data is static, the survey revealed approximately 1,000 single-family homes for sale between $75,000 and $200,000. Data on vacancy rates in the area combined with recent real estate listings indicate sufficient available housing to accommodate the approximate 90 overall households that could be displaced by the proposed improvements.

In addition to single-family detached houses, multi-family dwelling units and mobile homes would also be affected. From the survey conducted, it would appear that the affected mobile homes could probably be accommodated within their respective mobile home parks, and would not require relocation away from the current vicinity. It was also found that there are multi-family units available for rent in the vicinity, similar to those that would be impacted. It also appears that nearby vacant land could potentially be used to accommodate rebuilding of the foregone units.

**Relocation Assistance**

In addition to land acquisition, the project may require temporary or permanent easements for construction or utility location. Property acquisitions include purchases of entire parcels as well as partial property purchases. Parcels along the SIU 1 Project Area vary in size from small residential lots to large undeveloped or agricultural tracts. In some cases existing structures are set back from the existing right of way by such a large distance that only a portion of land (partial parcel acquisition), and not the structure, would be required. Under these circumstances, the property owner would retain the remaining useable land.

In some cases, after required right of way is purchased from a parcel, the remaining property may not be feasible for development due to lack of access or deficient size. A parcel of real property that the owner is left with after the partial acquisition, and which the acquiring agency has determined to have little or no value or utility to the property owner, is called an uneconomic remnant. If acquisition of only a portion of property leaves the owner with a remnant, MoDOT would determine whether the remnant maintains utility or value to the present owner. If MoDOT determines that the portion of property is an uneconomic remnant, they would offer to acquire the remnant along with the portion of property needed for the project. The owner would retain the choice to sell the uneconomic remnant. Since only the acquiring agency can determine the existence of uneconomical remnants of land, this EA cannot definitely state that such designated parcels will occur as a result of implementing any of the proposed Build Alternatives.

A review of the GIS land acquisitions database map, for each Build Alternative, does not reveal any parcels or portions thereof that have the potential for being designated as uneconomical remnants under the proposed project.

The Missouri Department of Transportation's right of way acquisition and relocation program is carried out in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended in 1987 (42 U.S.C. 4601). The Uniform Act, as well as Missouri law, requires that just compensation be paid to the owner of private property taken for public use. The appraisal of fair market value is the basis of determining just compensation to be offered to the owner for property to be acquired. An appraisal is defined in the Act as a written statement independently and impartially prepared by a qualified appraiser setting forth an opinion of defined value of an adequately described property as of a specific date, and supported by the presentation and analysis of relevant market information.

The Missouri Department of Transportation's right of way acquisition and relocation program is designed to provide uniform and equitable treatment for those persons who are displaced from their residences, businesses or farms. This program is carried out without discrimination and in compliance with Title VI (Civil Rights Act of 1964), the President's Executive Order on Environmental Justice, Limited English Proficiency and the Americans with Disabilities Act. It provides advisory assistance to owners and tenants who are displaced and relocation assistance payments designed to compensate displaced persons for costs that have been imposed on them by a MoDOT highway project. Relocation assistance under this program is made available to all affected parties without discrimination.

During the relocation phase, MoDOT is responsible for assuring that a displaced person would not be required to move unless the agency has made comparable, decent, safe and sanitary housing available and that the displaced person would not be required to move without at least a 90-day notice in writing. The Act requires that comparable, decent, safe and sanitary replacement housing within a person's financial means be made available before that person may be displaced. Should this project include persons who cannot readily be moved using the regular relocation program benefits and/or procedures (i.e., when there is a unique housing need or when the cost of available comparable housing would result in payments in excess of the $22,500 or $5,250 statutory payment limits), MoDOT's relocation policy commits to utilizing housing of last resort. Housing of last resort involves the use of payments in excess of statutory maximums or the use of other unusual methods of providing comparable housing. The Missouri Department of Transportation will utilize housing of last resort on a case-by-case basis.

Any displaced owner-occupant or tenant of a dwelling who qualifies as a displaced person is entitled to payment of his or her actual moving and related expenses, as MoDOT determines to be reasonable and necessary. A displaced owner-occupant who has occupied a displacement dwelling for at least 180 days is also eligible to receive up to $22,500 for a replacement housing payment which includes the amount by which the cost of a replacement dwelling exceeds the acquisition cost of the displacement dwelling, increased interest costs and incidental costs. A displaced owner-occupant who has occupied a displacement dwelling for at least 90 days but less than 180 days and a tenant who has occupied a displacement dwelling for at least 90 days, is entitled to a payment not to exceed $5,250 for either a rental or down payment assistance.

The Missouri Department of Transportation's Right of Way Division would carry out the acquisition and relocation of commercial and industrial properties in accordance with the act of 1970, as amended. Business owners would be paid fair market value for the real property to be acquired and for relocation costs. Acquisition of commercial properties would not involve the relocation of businesses if a operating business is not located on the property.

Any displaced business, farm operation, or nonprofit organization which qualifies as a displaced person is entitled to payment of their actual moving and related expenses, as MoDOT determines to be reasonable and necessary. In addition, a business, farm, or non-profit organization may be eligible to receive a payment, not to exceed $10,000 for expenses incurred in reestablishing their business, farm operation, or non-profit organization at a replacement site.

A displaced business may be eligible to choose to receive a fixed payment in lieu of the payments for actual moving and related expenses, and actual reasonable reestablishment expenses. The payment amount of this entitlement alternative is based on the average net earnings of the business. This fixed payment amount cannot be less than $1,000 or more than $20,000.

The Missouri Department of Transportation relocation program is designed to ease the property transition for the property owner or renter who is displaced. The Missouri Department of Transportation's relocation agents work closely with relocates, as needed or requested, and provide the needed guidance to relocate any eligible party. Housing of last resort will be provided as needed but the local residential and commercial property market is expected to more than absorb the displacements associated with this project.

**Environmental Justice**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was signed February 11, 1994 to prevent federal actions from having a disproportionate effect on certain designated population groups. As a result, proposed federal actions must be reviewed to determine their effects on minority and low-income populations. Demographic data from the 2000 Census for SIU 1 was evaluated to determine if a disproportionate impact could be present. Data on income and minority demographics within SIU 1 is presented in Tables III-4 and III-7. As concluded in Chapter III, the percentage of low-income and minority populations within the block groups located in SIU 1 is generally lower compared to that of each city as well as Jackson and Lafayette Counties.

As shown in Table IV-2, between 209 and 223 persons (estimated) would be displaced by the SIU 1 improvements. The resulting displacements would occur over the 24-mile SIU 1 Project Area and therefore would be distributed throughout. Concentrated areas of residential displacements could occur in Independence, Blue Springs and Grain Valley. As shown in Table III-4, only Census Tract 149.04 Block Group 2 (in Jackson County) exceeded the statewide average in minority population, 15.3 percent versus 13.3 percent statewide. In addition, as shown in Table III-7, only Census Tract 901 Block Group 3 and Census Tract 906 Block Group 3 (both in Lafayette County) exceeded the statewide average in percentage of persons below the poverty level. The location of the Census Tracts and Block Groups are shown on Exhibit III-11.

Eight duplexes and one single-family home impacted in Subsection 2 are located in Census Tract 149.04 Block Group 2. As stated above, this Block Group exhibits a slightly higher percentage of minority residents than the statewide average. However, the marginally higher percentage does not represent a significant difference and the number of dwelling units impacted in this area is not disproportionate to the number of impacted dwelling units throughout SIU 1.

Four single-family homes and seven mobile homes impacted in Subsection 5 are located in Census Tract 901 Block Group 3. As stated above, this Block Group has a marginally, but not significantly, greater proportion of persons living below the poverty level than the statewide average and the number of dwelling units impacted in this area is not disproportionate to the number of impacted dwelling units throughout SIU 1.

No impacted homes are located in Census Tract 906 Block Group 3.

The Missouri Department of Transportation would be required to comply with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 to address right of way and displacement impacts. In addition, MoDOT would work cooperatively with local governments during the final design phase of the project to minimize direct impacts associated with right of way acquisition and corresponding displacements, access disruptions and parking impacts.

Based on the available demographic data, interviews with local government representatives and windshield surveys, it does not appear that the proposed action would have disproportionate displacement, relocation or other impacts on minority or low-income persons.

In summary, there do not appear to be concentrations of minorities or low-income persons along the SIU 1 corridor. No established low-income units or other housing complexes associated with government assistance would be displaced. No minority neighborhoods or business districts or business clusters catering to any particular group of minorities would be displaced.

Thus, there is no evidence that the proposed action would create any direct, significant, unmitigated and unavoidable adverse impacts to minority or low-income populations and that these or other impacts would be considered disproportionate relative to impacts on other population segments not considered minority or low income.

**Neighborhood and Community Disruption During and After Construction, Neighborhood Changes, Divisions and Barriers**

In the near-term, construction activities would result in temporary disruptions to some neighborhoods. These disruptions would be in the form of temporary I-70 interchange and frontage road closures and/or detours. No neighborhoods or communities would be severed by I-70 or through reconstruction of the interchanges.

Access to specific properties would be temporarily disrupted. Construction activities would be phased and would occur over a period of time. As such, these divisions and barriers would be localized within certain areas of SIU 1 and distributed over time. Standard and typical requirements for minimizing impacts during the construction period would be applied to

construction contracts. It is not anticipated that improvements to I-70 would considerably alter existing neighborhoods in the long-term.

Given the existing presence of I-70, as well as its considerable role in shaping adjacent neighborhoods and communities, widening of I-70 and associated interchange improvements would not result in substantial disruption to communities on a regional scale.

With the exception of a few areas of high concentrations of development adjacent to SIU 1 (primarily near some interchanges), the majority of SIU 1 is characterized by low-density development and therefore it is expected that the proposed alternatives would affect few developed neighborhoods.

**Community Related Construction and Post-Construction Impacts**
In the short-term, I-70 improvements would create construction-related impacts such as increased noise, dust, odors, light and traffic for nearby communities and neighborhoods. These impacts would be reduced, whenever feasible, through the implementation of such standard measures as adherence to standard work hours and equipment operation and timing requirements. Refer to the respective resource sections (noise, air quality and visual quality) for detailed discussions of these effects.

In the long-term, potential impacts from I-70 enhancements would primarily result from increased traffic noise and, to a lesser extent, lighting, for specific residents that would be in closer proximity to I-70 and/or frontage roads than they were previously.

**Access and Circulation**
Construction activities would result in temporary impacts to business and residential access, circulation and parking. Roadway closures, detours and construction equipment would disrupt access to specific areas, making it more difficult for motorists as well as pedestrians and bicyclists to reach certain destinations. However, these impacts would be temporary and would be phased within SIU 1. The primary objective and outcome of the proposed action would be to improve access and circulation within and along SIU 1 through the proposed improvements to I-70 and associated interchanges and frontage roads.

**Public Safety**
Public emergency services such as ambulances and police routinely utilize I-70 in responding to emergency calls. The phased construction of the proposed action would minimize construction related access issues for emergency service vehicles. Implementation of the proposed action would reduce congestion and allow emergency vehicles to have increased access along I-70.

**Public Involvement Related to Disadvantaged Populations**
The EPA has published a set of guidelines to provide Regional program managers and staff with guidance for conducting effective and early outreach, and to outline steps that they can take to determine the appropriate level and type of outreach that will provide communities with environmental justice concerns the opportunity to have input into EPA's work and decision-making processes.

Community involvement activities will vary depending on the nature and complexity of the issues involved and the level of community interest. The degree to which the outreach steps

outlined are most appropriate will correspond to those specific situations in which EPA has determined enhanced community outreach is necessary.

EPA Guidelines on public involvement related to disadvantaged populations (minority or low-income populations) will be followed for the proposed project in the event that disadvantaged populations are identified and the potential exists that the proposed action would create any direct, significant, unmitigated and unavoidable adverse impacts to these populations and that these or other impacts would be considered disproportionate relative to impacts on other population segments not considered minority or low income.

EPA Guidelines on public involvement related to disadvantaged populations include the following:

*Identifying the Community Stakeholders and Concerns*

Developing a relationship with the concerned and/or affected community's organizations and residents is essential for enhanced public participation. Stakeholders may include, but are not limited to:

- Community and neighborhood groups;
- Community service organizations (health, welfare and others);
- Environmental organizations;
- Local industry and business (including the individual employees);
- Religious communities;
- Not-for-profits and non-governmental organizations; and
- Government agencies (federal, state, county, local and tribal).

*Preparing a Community Involvement Plan*

Based on the level of community interest and the complexity of the concerns, EPA Region staff may determine that the development of a Community Involvement Plan (CIP) is appropriate. The CIP should outline the community's concerns, strategies to address those concerns, and planned community involvement activities.

The CIP should be provided to affected stakeholders for review to ensure that their concerns are properly understood and that the involvement activities are responsively designed.

*Develop Methods to Inform and Involve the Community*

Regional staff should always consult with the community to determine the most effective and appropriate methods for informing and receiving input from the community. Some of these methods may include:

- Public Meetings and Availability Sessions
- Communication Materials
- Providing Technical Assistance Workshops

**American Disabilities Act of 1990 and the U.S. Department of Transportation Accessibility Policy Statement**
The Americans with Disabilities Act of 1990 (ADA) is legislation which prohibits discrimination on the basis of disability. Other Federal laws which affect the design, construction, alteration and operation of facilities include the Architectural Barriers Act of 1968 (ABA) and the Rehabilitation Act of 1973. These laws apply to all Federally funded facilities. The ADA applies to facilities, both public (title II) and private (title III), which are not Federally funded. Newly constructed and altered facilities covered by titles II and III of the ADA must be readily accessible to and usable by people with disabilities.

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multi-modal transportation system. Accessibility in Federally-assisted programs is governed by the USDOT regulations (49 CFR part 27) implementing Section 504 of the Rehabilitation Act (29 U.S.C. 794).

The proposed project will conform to the Federal Highway Administration (FHWA) specific ADA policies for statewide planning in 23 CFR 450.220(a)(4), for metropolitan planning in 23 CFR 450.316(b)(3) and for the NEPA process in 23 CFR 771.105(f). These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities.

## 3. Community Facility Impacts

### a. No-Build Alternative

The No-Build Alternative does not entail any improvements to the transportation system and would not produce any impacts to the community facilities located within the SIU 1 Project Area.

### b. Build Alternatives

**Churches**
The Grain Valley Christian Church would be partially impacted equally by either of the Build Alternatives associated with the I-70 mainline in this area (3-1 or 3-2). With either of these Build Alternatives, the frontage road would be reconstructed slightly closer to the church and a small portion of the land could be acquired for this purpose.

There would be no impacts to any other churches located within the SIU 1 Project Area as a result of the Build Alternatives.

**Schools**
There would be no impacts to schools located within the SIU 1 Project Area as a result of the Build Alternatives.

**Cemeteries**
There would be no impacts to cemeteries located within the SIU 1 Project Area as a result of the Build Alternatives.

**Police**
The Grain Valley Police Station would be partially impacted equally by either of the Build Alternatives associated with the I-70/Route AA/BB interchange (3-1 or 3-2). A portion of the land could be acquired, however it would not impact the functionality of the station. Response times could be reduced as a result of the Build Alternative improvements along I-70 that would provide a more efficient transportation facility. Additionally, a continuous frontage road system would also enhance circulation and the capacity for incident management.

**Fire Protection**
There would be no impacts to fire protection facilities as a result of the Build Alternatives. As would be the case with respect to police response times, the I-70 Build Alternative improvements would provide a more efficient transportation facility that would reduce response times. Greater median widths would also allow for enhanced safety of response vehicles at median breaks. Additionally, a continuous frontage road system would also enhance circulation and the capacity for incident management.

**Hospitals**
There would be no impacts to hospital facilities as a result of the Build Alternatives. However, the response time of emergency medical personnel and ambulance services would be improved as a result of the Build Alternative improvements to I-70.

**MoDOT Park and Ride**
There are five MoDOT Park and Ride facilities located near the I-70 intersections within SIU 1. The Facility located in Odessa would not be impacted. The remaining four of the Park and Ride facilities (Wood Chapel Road, Route 7, Route AA/BB and Route H/F) would be impacted as a result of any of the Build Alternatives in each respective area. However, potential relocation sites have been identified and are shown on the Chapter IV exhibits. The Missouri Department of Transportation is not committed to replacing the facilities at this time. During future phases of design, MoDOT will assess the need and feasibility of relocating the Park and Ride facilities.

**Water Treatment Plant Pumping Station**
The water treatment plant pumping station would be partially impacted equally by either of the Build Alternatives associated with the I-70 mainline near the I-70/Route AA/BB interchange (3-1 or 3-2). A portion of the land would be acquired, however it would not impact the buildings or the functionality of the pumping station.

**Grain Valley City Hall**
The Grain Valley City Hall would be partially impacted equally by either of the Build Alternatives associated with the I-70/Route AA/BB interchange (3-1 or 3-2). A portion of the land would be acquired, however it would not impact the building or the functionality of the facility.

**Truck Rest Area**
The existing truck rest area would be impacted equally by any of the Build Alternatives associated with the I-70 mainline near Odessa (5-1, 5-2, 5-3 or 5-4). The proposed mainline improvements would eliminate the facility. A potential rest area location has been identified in SIU 1, approximately two miles west of the existing facility.

**MoDOT Maintenance Yard**
The MoDOT Maintenance Yard would be partially impacted equally by any of the Build Alternatives associated with the I-70 mainline near Odessa (5-1, 5-2, 5-3 or 5-4). A portion of the land would be acquired, however it would not impact the functionality of the maintenance yard.

Within each of the SIU 1 subsections, none of the Build Alternatives would be preferred over another in terms of community facility impacts.

# B. Environmental Issues

The following discussion addresses the potential impacts to the natural environment of the SIU 1 Project Area including air quality, noise, parklands, conservation and wildlife refuges, prime farmland, water resources, physiography and topography, terrestrial and aquatic communities, historic and archaeological resources, hazardous waste sites and visual resources.

## 1. Air Quality

### a. No-Build Alternative

The No-Build Alternative does not entail any improvements to the transportation system within the SIU 1 Project Area. The No-Build Alternative would not cause a violation of the National Ambient Air Quality Standards (NAAQS) nor would there be any construction-phase air quality impacts.

### b. Build Alternatives

The Improve I-70 project within SIU 1 would be required to conform with the Transportation Improvement Program (TIP) endorsed by the Mid-America Regional Council (MARC), the Metropolitan Planning Organization (MPO) for the region in which the project is located. Projects in the TIP are considered to be consistent with the Transportation Outlook 2030, the current Long-Range Transportation Plan (LRTP), endorsed by MARC.

On May 20, 2003, FHWA and the Federal Transit Administration (FTA) determined that Transportation Outlook 2030 conforms with the State Implementation Plan (SIP) and the transportation-related requirements of the 1990 Clean Air Act Amendments. These findings were in accordance with 40 CFR Part 93, “Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved under Title 23 USC or the Federal Transit Act.”

The project’s design concept and scope are consistent with the project information used for the TIP conformity analysis. Therefore, this project conforms to the existing SIP and the transportation related requirements of the 1990 Clean Air Act Amendments.

As detailed in Chapter III, the EPA proposes to redesignate the counties in the SIU 1 Project Area (Jackson and Lafayette) to attainment for the eight-hour ozone standard. If this occurs, no transportation conformity will be required for the eight-hour ozone standard.

**Construction Impacts**
During construction of I-70 improvements, construction methods and operations would be conducted in accordance with the Missouri Department of Natural Resources (MDNR) and MoDOT regulations, particularly concerning batch plant operations and clearing and grubbing functions. Standard construction specifications incorporate provisions for minimizing air quality impacts during construction.

Within each of the SIU 1 subsections, none of the Build Alternatives would be preferred over another in terms of air quality impacts.

**Mitigation**
Measures would be taken to reduce fugitive dust and other emissions generated during construction. Emissions from construction equipment would be controlled in accordance with emission standards prescribed under state and federal regulations. Materials resulting from clearing and grubbing, demolition or other operations (except materials to be retained) would be removed from the project, burned, or otherwise disposed of by the contractor. Any burning, when permitted, would be conducted in accordance with applicable local laws and state regulations.

Based upon regulatory requirements in 40 CFR part 50 and the eight-hour ozone air quality data for the 2002 through 2004 time period, EPA is proposing to redesignate Johnson, Linn, Miami and Wyandotte Counties in Kansas and Cass, Clay, Jackson and Platte Counties in Missouri to attainment for the eight-hour ozone standard. If this occurs, no transportation conformity will be required. If something causes the area to be designated as a non-attainment area, conformity requirements will be determined and incorporated into the State Implementation Plan, and any requirements will need to be considered as the project proceeds.

## 2. Noise

### a. No-Build Alternative

The No-Build Alternative does not alter the current roadway configuration or geometry; however, increased noise levels can be expected through increased traffic volumes. For the No-Build Alternative a Traffic Noise Model® 2.5 (TNM) analysis was conducted to gauge the noise impacts. The TNM considers such factors as traffic volume (existing and projected for the design year 2030), vehicle mix, speed and roadway geometry. This analysis showed that 24 noise sensitive receptors (representing 205 dwelling units) would approach or exceed the FHWA Noise Abatement Criteria (NAC) (i.e., 66 dBA $L_{eq}$ (h)) for the No-Build Alternative. Table IV-6 shows the existing noise levels, the projected 2030 noise levels, the increase over existing levels and the impacts to noise sensitive receptors from the No-Build Alternative.

### b. Build Alternatives

A TNM analysis was also conducted to gauge the noise impacts associated with the SIU 1 Build Alternatives without mitigation. This analysis was performed for a total of 28 noise sensitive receptors (representing 273 dwelling units) as shown on Exhibit IV-1 through Exhibit IV-17. Results of this analysis are shown in Table IV-6.

**Table IV-6: Noise Impacts Without Mitigation**

| Alternative | Receiver Number | Number of Dwelling Units Represented | Existing Monitoring Noise Levels[1] 2000 | Existing Modeling Noise Levels[1] 2000 | No-Build Alternative | | | | Build Alternatives | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2030 Noise Levels[1] | dB Increase Over Existing | Impact[2] | # of Dwelling Units Impacted | 2030 Noise Levels[1] | dB Increase Over Existing | Impact[2] | # of Dwelling Units Impacted |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | | | | | | | |
| 1-1 & 1-2 | E1 | 2 | | 70 | 71 | 1 | Yes | 2 | 71 | 1 | Yes | 2 |
| | E2 | 24 | | 72 | 73 | 1 | Yes | 24 | 74 | 2 | Yes | 24 |
| | E3 | 30 | | 72 | 73 | 1 | Yes | 30 | 74 | 2 | Yes | 30 |
| | E4 | 12 | | 73 | 75 | 2 | Yes | 12 | 73 | 0 | Yes | 12 |
| | W1 | 18 | | 71 | 73 | 2 | Yes | 18 | 75 | 4 | Yes | 18 |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | | | | | | | |
| 2-1 & 2-2 | W2 | 9 | 71 | 72 | 74 | 2 | Yes | 9 | 75 | 3 | Yes | 9 |
| | W3 | 15 | | 72 | 74 | 2 | Yes | 15 | 74 | 2 | Yes | 15 |
| | W4 | 10 | | 71 | 73 | 2 | Yes | 10 | 73 | 2 | Yes | 10 |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | | | | | | | |
| 3-1 | E5 | 20 | 67 | 71 | 72 | 1 | Yes | 20 | 73 | 2 | Yes | 20 |
| | E6 | 16 | | 71 | 73 | 2 | Yes | 16 | 73 | 2 | Yes | 16 |
| | W5 | 13 | 67 | 66 | 68 | 2 | Yes | 13 | 69 | 3 | Yes | 13 |
| 3-2 | E5 | 20 | 67 | 71 | 72 | 1 | Yes | 20 | 73 | 2 | Yes | 20 |
| | E6 | 16 | | 71 | 73 | 2 | Yes | 16 | 73 | 2 | Yes | 16 |
| | W5 | 13 | 67 | 66 | 68 | 2 | Yes | 13 | 62 | -4 | No | 0 |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | | | | | | | |
| 4-1, 4-2 & 4-3 | E7 | 2 | | 64 | 67 | 3 | Yes | 2 | 66 | 2 | Yes | 2 |
| | W14 | 36 | | 63 | 65 | 2 | No | 0 | 68 | 5 | Yes | 36 |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | | | | | | | |
| 5-1, 5-2, 5-3 & 5-4 | E8 | 4 | | 62 | 64 | 2 | No | 0 | 65 | 3 | No | 0 |
| | E9 | 2 | | 63 | 66 | 3 | Yes | 2 | 65 | 2 | No | 0 |
| | E10 | 2 | | 66 | 70 | 4 | Yes | 2 | 68 | 2 | Yes | 2 |
| | E11 | 6 | | 66 | 70 | 4 | Yes | 6 | 68 | 2 | Yes | 6 |
| | E12 | 5 | | 64 | 67 | 3 | Yes | 5 | 67 | 3 | Yes | 5 |
| | E13 | 4 | | 65 | 69 | 4 | Yes | 4 | 67 | 2 | Yes | 4 |
| | E14 | 3 | 70 | 67 | 70 | 3 | Yes | 3 | 70 | 3 | Yes | 3 |
| | W6 | 2 | | 68 | 71 | 3 | Yes | 2 | NA | NA | NA | NA |
| | W7 | 10 | | 62 | 64 | 2 | No | 0 | 66 | 4 | Yes | 10 |
| | W8 | 18 | 63 | 62 | 65 | 3 | No | 0 | 66 | 4 | Yes | 18 |
| | W9 | 1 | | 68 | 72 | 4 | Yes | 1 | NA | NA | NA | NA |
| | W10 | 1 | | 67 | 72 | 5 | Yes | 1 | NA | NA | NA | NA |
| | W11 | 1 | | 67 | 71 | 4 | Yes | 1 | NA | NA | NA | NA |

| Alternative | Receiver Number | Number of Dwelling Units Represented | Existing Monitoring Noise Levels[1] 2000 | Existing Modeling Noise Levels[1] 2000 | No-Build Alternative | | | | Build Alternatives | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2030 Noise Levels[1] | dB Increase Over Existing | Impact[2] | # of Dwelling Units Impacted | 2030 Noise Levels[1] | dB Increase Over Existing | Impact[2] | # of Dwelling Units Impacted |
| | W12 | 5 | | 63 | 67 | 4 | Yes | 5 | 70 | 7 | Yes | 5 |
| | W13 | 2 | | 64 | 68 | 4 | Yes | 2 | 67 | 3 | Yes | 2 |

- Indicates the Recommended Preferred Alternative.

**5-4** - Indicates the Recommended Preferred Alternative.
1 - Noise levels are for Leq Design Hour
2 - Impact is defined as approaching, meeting or exceeding the FHWA NAC or causing a substantial increase in noise levels. The noise level which approaches the FHWA NAC is 66 dBA and a "substantial increase" is defined as 15 dBA over existing noise levels.
NA - Receiver would be acquired as a part of the construction project, therefore the receiver would not exist.

**Mitigation**

Generally, traffic noise abatement measures would be considered whenever traffic noise impacts are identified. However, MoDOT normally only provides mitigation measures for residential properties with a NAC Category of A or B. Without mitigation, all receivers in the SIU 1 Project Area approach or exceed the FHWA NAC for the design year 2030 for the Build Alternatives, with the exception of receivers E8 and E9 for Build Alternatives 5-1 and 5-2, and receiver W5 for Build Alternative 3-2. Several isolated receptors (W6, W9, W10 and W11) would have a design year noise level in excess of 66 dBA $L_{eq}$ (h). However, these receptors would be acquired as part of the Build Alternatives.

Possible noise mitigation measures could include traffic management measures, noise reducing pavement, creating buffer zones, planting vegetation, installing noise insulation in buildings, noise walls or a combination of multiple mitigation measures. For the purposes of this EA, an analysis of potential noise walls was conducted to provide an example of the costs, feasibility, reasonableness, and results that would be associated with noise mitigation measures. The Missouri Department of Transportation is not committed to any particular type of noise mitigation measures at this time. However, additional noise mitigation analysis will be conducted during the final design phase of the project.

In order to provide noise mitigation, the measures used must prove feasible and reasonable. The feasibility of providing mitigation for noise impacts relates to the overall effectiveness of such measures. Considerations that affect noise mitigation feasibility include engineering factors such as topography, access, drainage, safety, maintenance and other possible noise sources. Factors to determine reasonableness of noise walls include:

- Noise walls must provide noise reduction of at least 5 dBA $L_{eq}$ (h) for all primary receptors. Primary receptors are those, which are closest to the highway.
- Noise walls must provide attenuation for more than one receptor.
- Noise walls must be 18-ft (5.5m) or less in height above normal grade.

- Noise walls must not interfere with normal access to the property.
- Noise walls must not pose a traffic safety hazard.
- Noise walls must not exceed a cost of $30,000 per benefited receptor. A benefited receptor is defined as a receptor, which receives a noise reduction of 5 dBA $L_{eq}$ (h) or more.
- The majority of the affected residents (primary and benefited receptors) must concur that the noise wall is desired.

Mitigation measures would become part of the Build Alternatives unless one of the above criteria cannot be satisfied. Using the factors described above and assuming a noise wall height of 18 feet, a noise mitigation analysis was conducted to determine if noise walls would be feasible and reasonable for the noise receptors identified and impacted in the SIU 1 Project Area. Table IV-7 illustrates the noise mitigation analysis.

**Table IV-7: Noise Mitigation Analysis**

| Alternative | Receptor(s) Covered | Noise Wall ID Number | Barrier Characteristics | | | Build Alternatives | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Length (feet) | Total Cost[1] | Noise Range Without Wall[2] | Noise Range With Noise Wall[2] | Noise Reduction | Number of Units Attenuated | Cost/Number of Units Attenuated |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | | | | |
| 1-1 & 1-2 | E1 | 8 | 805 | $260,820 | 71-71 | 63-63 | -8 | 2 | $130,410 |
| | E2,E3,E4 | 1 | 5455 | $1,767,420 | 73-74 | 62-66 | -10 | 66 | **$26,779** |
| | W1 | NP | | | | | | | |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | | | | |
| 2-1 & 2-2 | W2 | NP | | | | | | | |
| | W3,W4 | 2 | 2665 | $863,460 | 73-74 | 62-64 | -11 | 33 | **$26,165** |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | | | | |
| 3-1 & 3-2 | E5,E6 | 3 | 3824 | $1,238,976 | 73-74 | 61-63 | -11 | 52 | **$23,826** |
| | W5 | NP | | | | | | | |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | | | | |
| 4-1, 4-2 & 4-3 | E7 | 14 | 815 | $264,060 | 66-66 | 62-62 | -4 | 0 | NR |
| | W14 | 9 | 980 | $317,520 | 67-67 | 61-61 | -6 | 36 | **$8,820** |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | | | | |
| 5-1, 5-2, 5-3 & 5-4 | E8 | NP | | | | | | | |
| | E9 | NP | | | | | | | |
| | E10 | 10 | 820 | $265,680 | 68-68 | 61-61 | -7 | 2 | $132,840 |
| | E11 | 11 | 2645 | $856,980 | 68-68 | 59-59 | -9 | 6 | $142,830 |
| | E12 | 5 | 1225 | $396,900 | 67-67 | 62-62 | -5 | 5 | $79,380 |
| | E13 | 15 | 535 | $173,340 | 67-67 | 61-61 | -6 | 6 | **$28,890** |
| | E14 | 4 | 600 | $194,400 | 70-70 | 62-62 | -8 | 3 | $64,800 |
| | W6 | NA | | | | | | | |
| | W7 | 6 | 1780 | $576,720 | 66-66 | 60-60 | -6 | 10 | $57,672 |

| Alternative | Receptor(s) Covered | Noise Wall ID Number | Barrier Characteristics | | | Build Alternatives | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Length (feet) | Total Cost[1] | Noise Range Without Wall[2] | Noise Range With Noise Wall[2] | Noise Reduction | Number of Units Attenuated | Cost/Number of Units Attenuated |
| | W8 | 7 | 1305 | $422,820 | 66-66 | 62-62 | -4 | 0 | NR |
| | W9 | NA | | | | | | | |
| | W10 | NA | | | | | | | |
| | W11 | NA | | | | | | | |
| | W12 | 12 | 660 | $213,840 | 70-70 | 67-67 | -3 | 0 | NR |
| | W13 | 13 | 990 | $320,760 | 67-67 | 61-61 | -6 | 2 | $160,380 |

**5-4** - Indicates the Recommended Preferred Alternative.
1 - Noise wall costs were estimated using $18 per square foot.
2 - Noise levels are for Leq Design Hour.
NP - Noise walls were Not Proposed for commercial receptors.
NA - Receiver would be acquired as a part of the construction project, therefore the receiver would not exist.
NR - Noise wall failed to provide 5dBA noise reduction, therefore the noise wall is Not Reasonable.
**Bold** - Cost per Number of Units Attenuated shown in bold falls below the maximum $30,000 per benefited receptor requirement.

The noise mitigation analysis revealed that only noise wall numbers 1, 2, 3, 9 and 15 meet the criteria to be considered feasible and reasonable. These noise walls provide a reduction of at least 5 dBA $L_{eq}$ (h) for all primary receptors, provide attenuation for more than one receptor and do not exceed a cost of $30,000 per benefited receptor. The majority of the affected residents (primary and benefited receptors) still must concur that each of these five noise walls is desired. The Missouri Department of Transportation is not committed to constructing these five walls at this time, but noise mitigation analysis would be re-evaluated after the final design phase to reflect those design details. For purposes of this EA, it appears that these five noise walls are feasible and their costs have been incorporated into the Build Alternative estimates.

The noise impacts with the five noise walls included are shown in Table IV-8. Noise impacts to receptors where the noise walls were determined not to be feasible and reasonable are the same as those listed without mitigation. Even with the feasible and reasonable noise walls included, noise impacts would still occur.

With exception of receptor W5, where Build Alternative 3-2 would be preferred over Build Alternative 3-1, none of the Build Alternatives would be preferred over another with respect to noise impacts.

**Table IV-8: Noise Impacts With Mitigation**

| Alternative | Receiver Number | Number of Dwelling Units Represented | Noise Wall ID Number[1] | Noise Wall Meets Reasonability Criteria | Existing Monitoring Noise Levels[1] 2000 | Existing Modeling Noise Levels[1] 2000 | Build Alternatives | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 2030 Noise Levels[2] | dB Increase Over Existing | Impact[3] | # of Dwelling Units Impacted |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | | | | | |
| 1-1 & 1-2 | E1 | 2 | 8 | No | | 70 | 71 | 1 | Yes | 2 |
| | E2 | 24 | 1 | Yes | | 72 | 66 | -6 | Yes | 24 |
| | E3 | 30 | 1 | Yes | | 72 | 62 | -10 | No | 0 |
| | E4 | 12 | 1 | Yes | | 73 | 63 | -10 | No | 0 |
| | W1 | 18 | NP | | | 71 | 75 | 4 | Yes | 18 |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | | | | | |
| 2-1 & 2-2 | W2 | 9 | NP | | 71 | 72 | 75 | 3 | Yes | 9 |
| | W3 | 15 | 2 | Yes | | 72 | 63 | -9 | No | 0 |
| | W4 | 10 | 2 | Yes | | 71 | 62 | -9 | No | 0 |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | | | | | |
| 3-1 | E5 | 20 | 3 | Yes | 67 | 71 | 62 | -9 | No | 0 |
| | E6 | 16 | 3 | Yes | | 71 | 61 | -10 | No | 0 |
| | W5 | 13 | NP | | 67 | 66 | 69 | 3 | Yes | 13 |
| 3-2 | E5 | 20 | 3 | Yes | 67 | 71 | 62 | -9 | No | 0 |
| | E6 | 16 | 3 | Yes | | 71 | 61 | -10 | No | 0 |
| | W5 | 13 | NP | | 67 | 66 | 62 | -4 | No | 0 |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | | | | | |
| 4-1, 4-2 & | E7 | 2 | 14 | No | | 64 | 66 | 2 | Yes | 2 |
| 4-3 | W14 | 36 | 9 | Yes | | 63 | 61 | -2 | No | 0 |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | | | | | |
| 5-1, 5-2, | E8 | 4 | NP | | | 62 | 65 | 3 | No | 0 |
| 5-3 & 5-4 | E9 | 2 | NP | | | 63 | 65 | 2 | No | 0 |
| | E10 | 2 | 10 | No | | 66 | 68 | 2 | Yes | 2 |
| | E11 | 6 | 11 | No | | 66 | 68 | 2 | Yes | 6 |
| | E12 | 5 | 5 | No | | 64 | 67 | 3 | Yes | 5 |
| | E13 | 4 | 15 | Yes | | 65 | 62 | -3 | No | 0 |
| | E14 | 3 | 4 | No | 70 | 67 | 70 | 3 | Yes | 3 |
| | W6 | 2 | NA | NA | | 68 | NA | NA | NA | NA |
| | W7 | 10 | 6 | No | | 62 | 66 | 4 | Yes | 10 |
| | W8 | 18 | 7 | No | 63 | 62 | 66 | 4 | Yes | 18 |
| | W9 | 1 | NA | NA | | 68 | NA | NA | NA | NA |
| | W10 | 1 | NA | NA | | 67 | NA | NA | NA | NA |
| | W11 | 1 | NA | NA | | 67 | NA | NA | NA | NA |
| | W12 | 5 | 12 | No | | 63 | 70 | 7 | Yes | 5 |
| | W13 | 2 | 13 | No | | 64 | 67 | 3 | Yes | 2 |

- Indicates the Recommended Preferred Alternative.
5-4 - Indicates the Recommended Preferred Alternative.

1 - One noise wall may be used to attenuate more than one sensitive receptor.
2 - Noise levels are for Leq Design Hour.
3 - Impact is defined as approaching, meeting or exceeding the FHWA NAC or causing a substantial increase in noise levels. The noise level which approaches the FHWA NAC is 66 dBA and a "substantial increase" is defined as 15 dBA over existing noise levels.
NA - Receiver would be acquired as a part of the construction project, therefore the receiver would not exist.
NP - Noise wall is Not Proposed for commercial receptors.

**Construction Noise**
Construction noise is temporary in nature and would not have permanent impacts to the surroundings. MoDOT has special provisions for construction noise that require all contractors comply with all applicable federal, state and local laws and regulations relating to noise levels permissible within and adjacent to a construction site. Construction equipment is required to have mufflers built in accordance with the equipment manufacturer's specifications. Further, project construction noise is to be monitored and abated in cases where the criterion is exceeded.

While there would be small differences in construction noise impacts among the various alternatives, the differences would not be substantial enough to distinguish one alternative from another.

## 3. Parklands, Conservation Areas and Wildlife Refuges

### a. Parks, Conservation Areas and Wildlife Refuges

**No-Build Alternative**
The No-Build Alternative would result in no environmental impacts to existing parklands, conservation areas and wildlife refuges, as it would not include any construction activities.

**Build Alternatives**
No direct impacts to parklands, conservation areas or wildlife refuges would occur in association with any of the SIU 1 Build Alternatives. There would also be no permanent incorporation of, no temporary occupancy or any constructive use of existing parklands, conservation areas and wildlife refuges due to the SIU 1 Build Alternatives.

**Little Blue Trace Nature Preserve**
Build Alternatives 1-1 (Preferred) and 1-2 would include the improvement of the I-70 mainline that crosses the Little Blue Trace Nature Preserve in two locations. However, the improvements in this area would be completely within the existing right of way and would not impact the nature preserve. The two bridges that cross the Little Blue River and the east fork of the Little Blue River would be widened, but the Little Blue Trace Nature Preserve would not be altered nor would the existing configuration or extents be changed. Section 4(f)/6(f) coordination letters from MDNR and Jackson County Parks and Recreation are presented in Appendix E.

**Burr Oak Woods Conservation Area**
Build Alternatives 1-1 (Preferred) and 1-2 would include the widening of existing Duncan Road adjacent to a portion of property owned by the Burr Oak Woods Conservation Area in Blue Springs. The southern boundary of the Burr Oak Woods Conservation Area is the existing NW Duncan Rd. The existing right of way line that currently determines the

boundary will remain the same and NW Duncan Rd would be widened to the south to avoid any direct, indirect or constructive use impacts to this property.

**Armstrong Park**
Build Alternatives 3-1 (Preferred) and 3-2 would include the widening of existing Main Street adjacent to Armstrong Park in Grain Valley, but the conceptual design at this location has also been refined to avoid any direct, indirect or constructive use impacts to this property.

**Gregory O. Grounds Park**
Build Alternatives 3-1 (Preferred) and 3-2 would include the improvement of the I-70 mainline within the existing MoDOT right of way, and would have no impacts on the frontage roads or the dam associated with the recently constructed lake in Gregory O. Grounds Park.

**Mitigation**
No mitigation would be required since there would be no impact by any of the Build Alternatives to parklands, conservation areas or refuges. However, MDNR has requested that MoDOT continue to coordinate with the MDNR's Dam Safety Unit to determine whether the MDNR will require a construction permit for dam modifications associated with the recently constructed lake at Gregory O. Grounds Park.

### b. Pedestrian and Bicycle Facilities

No sidewalks along I-70 currently exist within the SIU 1 Project Area.

**Little Blue Trace Bicycle Trail**
This trail does not currently extend into the existing right of way of I-70 and the improvements to I-70 in this area would be completely within the existing right of way. Therefore, neither the No-Build Alternative nor any of the Build Alternatives would impact the existing Little Blue Trace Trail.

An extension of the trail is planned that would continue the trail underneath I-70 along the Little Blue River and south to Old Route 40. If constructed, it would be constructed perpendicular to the existing I-70 right of way. Construction of the trail through the existing MoDOT right of way would require an easement or agreement for use of the MoDOT right of way. The proposed improvement to the I-70 facility in this area would be completely within the existing MoDOT right of way and would not alter the location or configuration of the planned trail. If the trail is extended to the south under I-70 before this I-70 project is initiated, MoDOT will coordinate with Jackson County Parks and Recreation regarding any temporary closures of the trail due to highway construction. There would be no permanent incorporation of, no temporary occupancy or any constructive use of any land outside of the existing MoDOT right of way with regard to the Little Blue Trace Trail. Section 4(f)/6(f) coordination letters from MDNR and Jackson County Parks and Recreation are presented in Appendix E.

**Woods Chapel Road Bicycle Trail** (Planned)
The No-Build Alternative does not entail any improvements to the transportation system and would not produce any impacts to the planned trail.

If constructed and depending on the trail's layout, the Build Alternatives in this area, 1-1 (Preferred) and 1-2, could impact the planned trail. While the general location of the proposed trail is known (generally parallel to Woods Chapel Road) the exact location of the planned trail has not been determined and the land for the improvements has not be acquired by the City of Blue Springs. The construction of a trail through existing MoDOT right of way would require an agreement between MoDOT and the City of Blue Springs.

**Route 7 Bicycle Trail** (Planned)
The No-Build Alternative does not entail any improvements to the transportation system and would not produce any impacts to the planned trail.

If constructed and depending on the trail's layout, the Build Alternatives in this area, 2-1 and 2-2 (Preferred), could impact the planned trail. While the general location of the proposed trail is known (generally parallel to Route 7) the exact location of the planned trail has not been determined and the land for the improvements has not be acquired by the City of Blue Springs. The construction of a trail through existing MoDOT right of way would require an agreement between MoDOT and the City of Blue Springs.

**Adams Dairy Parkway Bicycle Trail**
The No-Build Alternative does not entail any improvements to the transportation system and would not produce any impacts to the trail.

Both of the Build Alternatives in this area, 2-1 and 2-2 (Preferred), would entail the widening of the bridge that crosses over Adams Dairy Parkway and the Adams Dairy Parkway Bicycle Trail. The impact to the trail from either of the Build Alternatives would include a slightly longer portion of the trail being covered by I-70. There would be no permanent incorporation of or any constructive use of land with regard to the Adams Dairy Parkway bicycle trail. Construction impacts could include the temporary closure of the trail in the immediate area during construction activities. However, the portion of the trail potentially affected is located within existing MoDOT right of way and is operated under a temporary easement between MoDOT and the City of Blue Springs.

During the construction phase of the project, unavoidable short-term disruption of Adams Dairy Parkway Trail users would be through a trail detour around construction activity. Details about construction period detours would be required as part of the final design process. These details would maximize trail use during the construction period, but could include minor and temporary trail use limitations. The remainder of the trail located to the north and the south of I-70 would remain open. Multiple access points to the trail are available both to the north and the south of I-70. The final design process, which would occur after construction funding is authorized, would include mitigation measures for the trail including coordination with the City of Blue Springs Parks and Recreation Department, looking at joint development opportunities, and restoration of the trail.

**Pedestrian and Bicycle Facilities Enhancement**
Dependent upon the availability of funding and local partnerships, the proposed I-70 action would consider implementation of a Corridor Enhancement Plan. The plan includes aesthetic components as well as pedestrian and bicycle facilities for reconstructed bridges in urban areas. The proposed frontage road cross section also provides 8-foot shoulders that could be used by pedestrians and bicyclists if they choose.

**Joint Development**
The opportunity exists for joint development of pedestrian and bicycle facilities in the SIU 1 Project Area. The Missouri Department of Transportation will continue to coordinate efforts with area stakeholders regarding these facilities.

# 4. Prime Farmland and Conservation Reserve Program Impacts

## a. No-Build Alternative

The No-Build Alternative does not include any construction activities. Therefore, it would result in no direct impacts to existing prime farmland, farmland of statewide importance or Conservation Reserve Program (CRP) land.

## b. Build Alternatives

Potentially impacted areas of prime farmland, farmland of statewide importance and CRP lands were calculated for the Build Alternatives. The Natural Resources Conservation Service (NRCS) then reviewed the various Build Alternatives and completed the Farmland Conversion Impact Rating Form for Corridor Type Projects (Form NRCS-CPA-106), which include both consideration of acreage impacted, as well as the relative value of the farmland impacted. None of the Build Alternatives for this project had impact ratings exceeding NRCS' threshold value of 160 (Table IV-9). Therefore, no significant impacts to farmland would be anticipated. Copies of the rating forms are presented in Appendix F.

A summary of prime farmland, farmland of statewide importance and CRP land that would be converted for I-70 improvements is presented by subsection and alternative in Table IV-9. Impacts to farm operations as a result of the creation of point rows, severances, or remnant parcels is expected to be minimal as the proposed improvements would occur immediately adjacent to existing I-70.

Currently, one parcel of land enrolled in the CRP program would be impacted by the Build Alternatives. This parcel of land is located in Subsection 4, to the north of I-70, along the Jackson/Lafayette County boundary (Exhibit IV-10). Build Alternatives 4-1, 4-2 and 4-3 would impact the CRP land as shown in Table IV-9.

**Table IV-9: Impacts to Prime Farmland, Farmland of Statewide Importance and CRP Lands**

| Alternative | Farmland Conversion Impact Rating | Prime Farmland Converted | | Farmland of Statewide Importance Converted | | CRP Land Converted | |
|---|---|---|---|---|---|---|---|
| | | acres | hectares | acres | hectares | acres | hectares |
| No-Build | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | | |
| 1-1 | 117 | 11.4 | 4.6 | 17.2 | 7.0 | 0.0 | 0.0 |
| 1-2 | 117 | 11.9 | 4.8 | 19.5 | 7.9 | 0.0 | 0.0 |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | | |
| 2-1 | 0[1] | 12.2 | 4.9 | 1.3 | 0.5 | 0.0 | 0.0 |
| 2-2 | 0[1] | 10.5 | 4.2 | 3.8 | 1.5 | 0.0 | 0.0 |

| Alternative | Farmland Conversion Impact Rating | Prime Farmland Converted | | Farmland of Statewide Importance Converted | | CRP Land Converted | |
|---|---|---|---|---|---|---|---|
| | | acres | hectares | acres | hectares | acres | hectares |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | | |
| 3-1 | 134 | 9.1 | 3.7 | 23.1 | 9.3 | 0.0 | 0.0 |
| 3-2 | 134 | 12.0 | 4.9 | 22.5 | 9.1 | 0.0 | 0.0 |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | | |
| 4-1 | 149 | 51.1 | 20.7 | 53.1 | 21.5 | 4.0 | 1.6 |
| 4-2 | 153 | 42.6 | 17.2 | 36.1 | 14.6 | 3.6 | 1.5 |
| 4-3 | 153 | 42.2 | 17.1 | 34.6 | 14.0 | 3.6 | 1.5 |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | | |
| 5-1 | 139 | 125.1 | 50.6 | 171.9 | 69.5 | 0.0 | 0.0 |
| 5-2 | 140 | 135.0 | 54.7 | 165.0 | 66.8 | 0.0 | 0.0 |
| 5-3 | 136 | 103.6 | 41.9 | 191.5 | 77.5 | 0.0 | 0.0 |
| 5-4 | 136 | 113.5 | 46.0 | 184.6 | 74.8 | 0.0 | 0.0 |

- Indicates the Recommended Preferred Alternative.

1 - All of Subsection 2 is considered urban by the NRCS, therefore FPPA does not apply.

In terms of the Farmland Conversion Impact Rating, the Build Alternatives in Subsections 1, 2 and 3 would be equal. In Subsection 4, Build Alternative 4-1 would be slightly preferred over 4-2 and 4-3. In Subsection 5, Build Alternative 5-3 or 5-4 would be slightly preferred over 5-1 or 5-2.

In terms of impacts to prime farmland acreage, Build Alternatives 1-1, 2-2, 3-1, 4-3 and 5-3 would be slightly preferred over the other Build Alternatives within each of the subsections.

In terms of impacts to CRP acreage, all of the Build Alternatives would be equal with the exception of 4-2 or 4-3, either of which would be slightly preferred over 4-1.

**Mitigation**
The Missouri Department of Transportation would continue correspondence with the NRCS to determine appropriate mitigation measures for the loss of CRP lands (Appendix E, Interagency Cooperative Agreement for Agricultural Lands and letters dated July 13, 2004).

## 5. Water Resources and Water Quality

Lakes, rivers, streams and groundwater within the project area were inventoried and described in terms of their classification, usage designation and water quality in Section III.B.5. This section provides an evaluation of the potential impact to the water resources due to the alternatives under consideration. This evaluation includes the consideration of direct as well as indirect impacts of the I-70 improvement alternatives in SIU 1. Direct impacts are those which would result from the construction or operation of the proposed I-70 improvements. Indirect impacts are those which would substantially impair or diminish the quantity, flow, or quality of the water resource due to secondary development of land in the proximity of the proposed I-70 improvements. Particular attention is paid to those water resources that would be crossed by the proposed I-70 improvements and would be most likely to incur direct or indirect impacts.

### a. No-Build Alternative

The present condition would continue under the No-Build Alternative. Development along the I-70 corridor would continue to occur, increasing the secondary impacts to the water resources. The projected traffic increase would contribute to the runoff pollutant load.

### b. Build Alternatives

Water quality in lakes, streams and their tributaries within the I-70 Study Area could be impacted during the construction phase of the proposed project. Negative water quality impacts are possible, especially during storm events, as storm water runoff may carry pollutants to the streams. In particular, total suspended solids and total dissolved solids could increase from erosion of stream banks and exposed surfaces during construction.

Over the long-term and during the operational phase, the increased amounts of impermeable surface could contribute to storm water runoff resulting in increased flooding, potential for erosion and runoff pollutant loading. However, changes to the stream designations would not be anticipated in association with the Build Alternatives.

Along the urban mainline of the I-70 corridor, development would continue to occur at a slightly quicker rate than the No-Build Alternative, potentially increasing the secondary impacts to the water resources. Along the rural mainline of the I-70 corridor, proposed frontage roads and interchanges would allow industrial, commercial and residential development to occur at a quicker rate than the No-Build Alternative. The potential for increased discharges of nutrients, sediments and hazardous materials could change the stream and lake designations.

No impacts are expected to occur to any of the classified lakes described in Chapter III.

Potential impacts for each of the Build Alternatives are summarized in Table IV-10.

**Table IV-10: Summary of Impacts to Water Resources**

| Alternative | Stream | Impacts | |
|---|---|---|---|
| | | Direct | Indirect |
| 1-1 & 1-2 | Little Blue River, East Fork Little Blue River | • Sediment loading due to widening of bridges. Impact would be short term.<br>• Pollutant loading from stormwater runoff from the highway directly into streams. Impact would be long term. Prevent or minimize with stormwater collection. | • Continued commercial and residential development along corridor contributing to sediment, nutrient, and chemical loading. Impact would be moderate and long term. Prevent or minimize with stormwater management practices. |

| Alternative | Stream | Impacts | |
|---|---|---|---|
| | | **Direct** | **Indirect** |
| 2-1 & **2-2** | Burr Oak Creek, Blue Branch Creek | • Sediment loading due to widening of highway and interchange construction. Impact would be minor and short term.<br>• Pollutant loading from stormwater runoff from highway into tributaries. Impact would be minor. Prevent or minimize with operational features. | • Continued commercial and residential development along corridor contributing to sediment, nutrient, and chemical loading. Impact would be moderate and long term. Prevent or minimize with stormwater management practices. |
| **3-1** & 3-2 | Sni-A-Bar Creek Swiney Branch | • Sediment loading due to widening of bridges and interchange construction. Impact would be short term.<br>• Encroachment on Swiney Branch floodplain and floodway requires further hydraulic analysis. Impact would be long term.<br>• Pollutant loading from stormwater runoff from the highway directly into streams. Impact would be long term. Prevent or minimize with stormwater collection. | • Continued commercial and residential development along corridor contributing to sediment, nutrient, and chemical loading. Impact would be long term. Prevent or minimize with stormwater management practices. |
| 4-1, 4-2 & **4-3** | Sni-A-Bar Creek Tributaries | • Sediment loading due to widening of highway and interchange construction. Impact would be moderate but short term.<br>• Pollutant loading from stormwater runoff from highway into tributaries. Impact would be minor. Prevent or minimize with operational features. | • New frontage road would accelerate development along corridor increasing sediment, nutrient, and chemical loading. Impact would be long term. Prevent or minimize with stormwater management practices. |
| 5-1, 5-2, 5-3, & **5-4** | Horseshoe Creek, Little Horseshoe Creek, East Branch Sni-A-Bar Creek, Owl Creek, Tributaries to Davis Creek | • Sediment loading due to widening of highway and interchange construction. Impact would be moderate but short term.<br>• Pollutant loading from stormwater runoff from highway into tributaries. Impact would be moderate. Prevent or minimize with operational features. | • New frontage road would accelerate development along corridor increasing sediment, nutrient, and chemical loading. Impact would be long term. Prevent or minimize with stormwater management practices. |

**5-4** - Indicates the Recommended Preferred Alternative.

None of the alternatives in Subsections 1, 2 and 3 would be preferred over another in terms of water resources. In Subsection 4, Alternative 4-2 or 4-3 would have 670 feet (204 meters) and 0.27 acres (0.08 hectares) less of an impact on stream crossings than Alternative 4-1. In Subsection 5, Alternative 5-1 or 5-2 would have 1,741 feet (531 meters) and 0.01 acres (0.003 hectares) less of an impact on stream crossings than Alternative 5-3 or 5-4. (see discussion in Chapter IV.7.a). Water quality impacts could occur during the construction and operational phases of the project, whether the roadway construction was in an entirely new location or only

included improvements to an existing roadway. Construction phase impacts could include soil erosion induced by disturbance of vegetation and soils, and accidental spills of hazardous materials within and adjacent to streams and drainages. Operational phase impacts focus on stormwater runoff, but could include long-term erosion of areas inadequately revegetated or accidental release of hazardous materials during transport.
The areas covered by the Build Alternatives do not include any MDNR designated wellhead protection areas for groundwater drinking supplies. Communities and rural residents do not utilize groundwater resources within the SIU 1 area for drinking water supplies and, therefore, would not be impacted.

**Construction Impacts**
Soil erosion during construction would be the greatest potential impact to surface water quality, especially along stream banks and steep slopes. Soil erosion could occur during and after clearing of vegetation, grading of right of way and construction of support structures for stream crossings (bridges and culverts). Erosion of surface soils degrades water quality by increased sediment loads, turbidity levels and concentrations of total and dissolved solids. Other pollutants in the construction area could be transported to water bodies via stormwater runoff of exposed land.

The potential impact to receiving streams of these pollutants could result in a change to, reduction in or elimination of aquatic life. Degradation of water quality could result in impacts to stream use designations and future use of surface water resources, such as livestock and wildlife watering and aquatic life.

Improper handling or accidental spills of hazardous materials, such as fuels and lubricants for construction equipment, could occur resulting in discharges to surface waters. These events could adversely impact water quality and aquatic life. The extent of groundwater contamination would be dependent upon local spill prevention and response plans.

**Operational Impacts**
Operational impacts to water quality include stormwater runoff from highway surfaces, erosion of surface soils not adequately revegetated, and spills of hazardous materials from vehicular accidents. The impact to receiving streams of these pollutants could also result in a change to, reduction in, or elimination of aquatic life.

Stormwater runoff from I-70 would discharge into streams within the project area, either directly at stream crossings or indirectly via drainages and tributaries. Pollutants associated with stormwater runoff from roadways include, but are not limited to, oils, fuels, metals, salts and sand. Salts and sand may run off into surface waters from application of these materials to eliminate ice and snow from roadways. These impacts would only be expected periodically during the winter months in Missouri (November through March) and are high-concentration, short-duration events. High levels of many salts, (e.g., ammonium nitrate) and metals are toxic to aquatic life, especially fish.

The quantity of stormwater runoff for receiving streams would be higher from the Build Alternatives since the amount of paved surface area would be higher. The increase in paved surface area would likely result in increased stream flow rates during storm events. The

anticipated impacts from these short-duration, high-impact events include, but are not limited to, the following:

- More stream bank erosion;
- Scouring and sedimentation of stream beds;
- Displacement of aquatic organisms; and
- Degradation in water quality during and immediately after the storm event.

The impacts of soil erosion from areas that do not permanently revegetate are similar to those previously described. These impacts would be less severe than those associated with construction because of the limited amount of exposed surface area.

Accidental spills of hazardous materials such as fuels and chemicals in transport could occur, resulting in discharges to surface waters and drainages. These short-duration events could seriously impact water quality and aquatic life. The extent of groundwater contamination would be dependent upon local spill prevention and response plans.

**Mitigation Measures**
In compliance with the Missouri State Operating Permit, MO-R100007, or subsequent operating permit, MoDOT would implement erosion and sedimentation control measures where appropriate to prevent or minimize contamination of wetlands, streams and ponds adjacent to the project area (Appendix G). The control of water pollution is to be accomplished by the use of MoDOT's Pollution Prevention Plan, which includes measures such as revegetation and directing stormwater runoff through grass channels, sedimentation basins, constructed wetlands, straw bales, check dams, infiltration basins, silt fences, vegetated areas and other erosion control devices or methods as needed. Further control of water pollution from accidental spills is to be accomplished by the use of local spill prevention and response plans.

## 6. Floodplains

The following discussion describes and compares the floodplain impacts of the I-70 improvement alternatives. Executive Order 11988, Floodplain Management, requires all federal agencies providing financed or assisted construction and conducting federal programs (e.g., federal highway system) affecting land use, to take actions to reduce the negative impacts of floods on the human and natural environments. Executive Order 11988 also requires agencies to:

- Evaluate the potential impacts of its actions on floodplains;
- Ensure that programs consider floodplain hazards and management; and
- Assess whether a proposed action will occur in a floodplain prior to taking any action.

In the event that an action will occur in a floodplain, the agency shall consider practicable alternatives to the proposed action to "avoid adverse effects and incompatible development."

### a. No-Build Alternative

The No-Build Alternative would have no impact on existing or future floodplains or floodways.

### b. Build Alternatives

As indicated in Chapter III, there are no Federal Emergency Management Agency (FEMA) or State Emergency Management Agency (SEMA) buyout properties located within the SIU 1 Project Area. Therefore, there would be no impacts to these properties.

The Build Alternatives would require construction in areas where floodplains have not been identified, in areas within approximate floodplain, or in areas within detailed floodplains and regulatory floodways. Encroachments on the 100-year floodplains would not increase the flood levels by more than one foot (0.3 meters), which is the threshold set by FEMA. Additionally, proposed roadway profile elevations and proposed structure low chord elevations would be designed to satisfy the FEMA requirement of less than a one foot (0.3 meters) rise. Encroachments on the regulatory floodway would not be expected to increase the flood levels by any amount. Any regulatory floodway encroachment will require a "no-rise" certification. The risk to human safety and property loss from the Build Alternatives would be kept to a minimum by using standard stream crossing design criteria.

Existing culverts at locations of approximate floodplains would be extended if necessary. Culvert extensions generally increase headwater elevations depending on the nature of the extension. Because the amount of impacted floodplain areas is relatively small and the existing floodplain is predominantly undeveloped, no significant new flooding risks would result.

Table IV-11 describes and compares the approximate floodplain crossings for the No-Build and Build Alternatives. All of the floodplain encroachments associated with the Build Alternatives are transverse in nature.

**Table IV-11: Summary of Impacts to Floodplains and Floodways**

| Alternative | Stream | Floodplain Impacts | | Floodplain Crossing | | Comments |
|---|---|---|---|---|---|---|
| | | acres | hectares | feet | meters | |
| No-Build | | 0.0 | 0.0 | 0.0 | 0.0 | Not impacted |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | |
| 1-1 & 1-2 | Little Blue River | 2.6 | 1.0 | 1700.0 | 518.2 | Zone AE with no Floodway |
| | East Fork Little Blue River | 5.4 | 2.2 | 2060.0 | 627.9 | Zone AE with no Floodway |
| | **Subsection 1 Total** | **8.0** | **3.2** | **3760.0** | **1146.1** | |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | |
| 2-1 & 2-2 | Blue Branch Creek Trib No. 2 | 0.3 | 0.1 | 180.0 | 54.9 | 0.12 acres (0.05 hectares) and 85 feet (25.9 meters) of Floodway impacted and crossed |
| | **Subsection 2 Total** | **0.3** | **0.1** | **180.0** | **54.9** | |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | |
| 3-1 & 3-2 | Sni-A-Bar Creek | 2.3 | 0.9 | 60.0 | 140.2 | No Floodway impacted or crossed |
| | Swiney Branch | 9.5 | 3.8 | 3060.0 | 932.7 | 2.1 acres (0.8 hectares) and 850 feet (259 meters) of Floodway impacted and crossed |
| | **Subsection 3 Total** | **11.8** | **4.7** | **3120.0** | **1072.9** | |

| Alternative | Stream | Floodplain Impacts | | Floodplain Crossing | | Comments |
|---|---|---|---|---|---|---|
| | | acres | hectares | feet | meters | |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | |
| 4-1 | Sni-A-Bar Creek | 17.0 | 6.9 | 2700.0 | 823.0 | 5.4 acres (2.2 hectares) and 800 feet (243.8 meters) of Floodway impacted and crossed |
| | Sni-A-Bar Creek Trib No. 3 | 0.7 | 0.3 | 85.0 | 25.9 | 0.7 acres (0.3 hectares) and 70 feet (21.3 meters) of Floodway impacted and crossed |
| **Alternative 4-1 Total** | | **17.7** | **7.2** | **2785.0** | **848.9** | |
| 4-2 & **4-3** | Sni-A-Bar Creek | 17.0 | 6.9 | 2700.0 | 823.0 | 5.4 acres (2.2 hectares) and 800 feet (243.8 meters) of Floodway impacted and crossed |
| | Sni-A-Bar Creek Trib No. 3 | 0.6 | 0.2 | 85.0 | 25.9 | 0.6 acres (0.2 hectares) and 70 feet (21.3 meters) of Floodway impacted and crossed |
| **Alternative 4-2, 4-3 Total** | | **17.6** | **7.1** | **2785.0** | **848.9** | |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | |
| 5-1 & 5-3 | Horseshoe Creek/Little Horseshoe Creek | 20.5 | 8.3 | 2100.0 | 640.1 | Approximate A Zone |
| | Unnamed Tributary to Little Horseshoe Creek | 3.1 | 1.3 | 300.0 | 91.4 | Approximate A Zone |
| | East Fork Sni-A-Bar Creek | 24.5 | 9.9 | 2600.0 | 792.5 | Approximate A Zone |
| | Owl Creek | 5.2 | 2.1 | 370.0 | 112.8 | Approximate A Zone |
| | Tribs to Davis Creek | 11.8 | 4.8 | 570.0 | 173.7 | Approximate A Zone |
| **Alternative 5-1, 5-3 Total** | | **65.1** | **26.4** | **5940.0** | **1810.5** | |
| 5-2 & **5-4** | Horseshoe Creek/Little Horseshoe Creek | 20.5 | 8.3 | 2100.0 | 640.1 | Approximate A Zone |
| | Unnamed Tributary to Little Horseshoe Creek | 3.1 | 1.3 | 300.0 | 91.4 | Approximate A Zone |
| | East Fork Sni-A-Bar Creek | 24.5 | 9.9 | 2600.0 | 792.5 | Approximate A Zone |
| | Owl Creek | 5.2 | 2.1 | 370.0 | 112.8 | Approximate A Zone |
| | Tribs to Davis Creek | 11.1 | 4.5 | 570.0 | 173.7 | Approximate A Zone |
| **Alternative 5-2, 5-4 Total** | | **64.4** | **26.1** | **5940.0** | **1810.5** | |

**5-4** - Indicates the Recommended Preferred Alternative.

Based upon impacts to floodplains, none of the alternatives, with the exception of Build Alternatives 4-2 or 4-3 and 5-2 or 5-4, would be preferred over another. Build Alternative 4-2 or 4-3 would have slightly less floodplain impacts (0.1 acres [0.1 hectares]) to Sni-A-Bar Creek Tributary No. 3 than Alternative 4-1. Build Alternative 5-2 or 5-4 would have slightly less floodplain impacts (0.7 acres [0.3 hectares]) to tributaries of Davis Creek than Alternative 5-1 or 5-3.

Based upon impacts to regulatory floodways, none of the alternatives would be preferred over another. The regulatory floodway encroachments from the RPA would not be expected to increase the flood levels by any amount and would likely receive a "no-rise" certification.

**Construction Impacts**
The time, length and height of temporary obstructions within the floodplain would be minimized through effective construction sequencing. Most of the crossings would be short enough that fills added to the floodplains for road embankments and bridges would be kept to a minimum.

**Mitigation**
New development within the approximate and detailed floodplains, including the regulatory floodways, would be regulated by National Flood Insurance Program (NFIP) criteria and would be in compliance with Executive Order 11988, Floodplain Management. The Missouri Executive Orders 97-09 and 98-03, which indicate how the state complies with the requirements of NFIP, would also be adhered to for all floodplain crossings. These executive orders require a floodplain development permit for any encroachment into the floodplain, and a "no-rise" certification for any encroachment into the regulatory floodway. A broad and unified effort would be made to ensure that developments in floodplains, including regulatory floodways, would be adequately analyzed and coordinated with FEMA and SEMA to lessen the risk of flood losses. There would be minimal impact on natural and beneficial floodplain values where the Build Alternatives cross the floodplain. Where possible, channels would be preserved in their natural state, and stream relocations would be minimized. Increases in channel velocities would be restricted, and control measures to prevent channel erosion and scour would be implemented. Erosion and scour protection would likely be required at bridge foundations, typically in the form of rock rip-rap.

## 7. Wetlands and Waters of the United States

The following discussions summarize stream crossing, wetland and pond impacts.

### a. Stream Crossings

**No-Build Alternative**
The No-Build Alternative would have no impact to existing stream crossings, as it would not entail any construction activities.

**Build Alternatives**
Impacts to streams from the Build Alternatives would occur as a result of bridging, piping (extending culverts or concrete box culverts) or relocations. Most streams currently are piped or flow in box culverts under existing I-70. With the widening of I-70, these pipes/culverts would be extended to a new discharge headwall location. A total of 40 jurisdictional stream crossings would be impacted with the various Build Alternatives for a total distance of approximately 15,900 to 18,300 feet (4,846 to 5,577 meters). Among these, 14 streams would require channel relocation and restoration. The direct impacts to the stream crossings are summarized in Table IV-12.

**Table IV-12: Stream Crossing Impacts**

| Alternative | Stream Crossing Number | Impact Type | OHWM Width (ft) | Impact Length | | Impact Area | |
|---|---|---|---|---|---|---|---|
| | | | | feet | meters | acres | ha |
| No-Build | - | - | - | 0 | 0 | 0 | 0 |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | | |
| 1-1 & 1-2 | 1 | Bridge | 35 | 0 | 0.0 | 0.000 | 0.000 |
| | 2 | Culvert | 30 | 66 | 20.1 | 0.045 | 0.018 |
| | 3 | Culvert/ Relocation | 6 | 310 | 94.5 | 0.043 | 0.017 |
| | 4 | Culvert | 6 | 55 | 16.8 | 0.008 | 0.003 |
| | | | **Total** | **431** | **131.4** | **0.096** | **0.039** |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | | |
| 2-1 & 2-2 | None | - | - | 0 | 0 | 0 | 0 |
| | | | **Total** | **0** | **0** | **0** | **0** |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | | |
| 3-1 & 3-2 | 5 | Culvert | 5 | 0 | 0.0 | 0.000 | 0.000 |
| | 6 | Culvert | 4.5 | 115 | 35.1 | 0.012 | 0.005 |
| | 29 | Culvert | 3 | 50 | 15.0 | 0.005 | 0.002 |
| | 7 | Culvert/ Relocation | 9 | 210 | 64.0 | 0.043 | 0.018 |
| | 8 | Culvert | 8 | 9 | 2.6 | 0.002 | 0.001 |
| | 30 | Culvert | 3 | 1000 | 305.0 | 0.138 | 0.056 |
| | 9 | Culvert/ Relocation | 15 | 4245 | 1293.9 | 1.462 | 0.592 |
| | | | **Total** | **5629** | **1715.6** | **1.662** | **0.674** |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | | |
| 4-1 | 10 | Bridge | 30 | 0 | 0.0 | 0.000 | 0.000 |
| | 11 | Culvert/ Relocation | 9 | 495 | 150.9 | 0.102 | 0.041 |
| | 12 | Culvert/ Relocation | 3 | 867 | 264.3 | 0.060 | 0.024 |
| | 13 | Culvert | 27.5 | 244 | 74.4 | 0.154 | 0.062 |
| | 14 | Culvert | 20 | 242 | 73.8 | 0.111 | 0.045 |
| | 15 | Culvert | 10 | 172 | 52.4 | 0.039 | 0.016 |
| | 16 | Culvert/ Relocation | 5 | 667 | 203.3 | 0.077 | 0.031 |
| | 17 | Culvert | 3 | 180 | 54.9 | 0.012 | 0.005 |
| | 18 | Culvert/ Relocation | 22.5 | 494 | 150.6 | 0.255 | 0.103 |
| | 19 | Culvert | 25 | 244 | 74.4 | 0.140 | 0.057 |
| | 31 | Culvert | 3 | 220 | 76.6 | 0.015 | 0.006 |
| | | | **Total** | **3825** | **1165.9** | **0.965** | **0.294** |
| 4-2 & 4-3 | 10 | Bridge | 30 | 0 | 0.0 | 0.000 | 0.000 |
| | 11 | Culvert/ Relocation | 9 | 445 | 135.6 | 0.092 | 0.028 |
| | 12 | Culvert/ Relocation | 3 | 857 | 261.2 | 0.059 | 0.018 |
| | 13 | Culvert | 27.5 | 114 | 34.7 | 0.072 | 0.022 |
| | 14 | Culvert | 20 | 152 | 46.3 | 0.070 | 0.021 |
| | 15 | Culvert | 10 | 54 | 16.5 | 0.012 | 0.004 |
| | 16 | Culvert/ Relocation | 5 | 667 | 203.3 | 0.076 | 0.023 |
| | 17 | Culvert | 3 | 180 | 54.9 | 0.012 | 0.004 |
| | 18 | Culvert/ Relocation | 22.5 | 394 | 120.1 | 0.203 | 0.062 |
| | 19 | Culvert | 25 | 152 | 46.3 | 0.087 | 0.027 |
| | 31 | Culvert | 3 | 140 | 42.7 | 0.010 | 0.003 |
| | | | **Total** | **3155** | **961.6** | **0.693** | **0.211** |

| Alternative | Stream Crossing Number | Impact Type | OHWM Width (ft) | Impact Length | | Impact Area | |
|---|---|---|---|---|---|---|---|
| | | | | feet | meters | acres | ha |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | | |
| 5-1 & 5-2 | 32 | Culvert | 3 | 307 | 93.6 | 0.021 | 0.009 |
| | 20 | Bridge/ Relocation | 40 | 1271 | 387.4 | 1.167 | 0.472 |
| | 21 | Bridge | 30 | 0 | 0.0 | 0.000 | 0.000 |
| | 33 | Culvert | 2.5 | 325 | 99.0 | 0.019 | 0.008 |
| | 22 | Culvert | 8 | 244 | 74.4 | 0.045 | 0.018 |
| | 23 | Culvert | 5 | 64 | 19.5 | 0.007 | 0.003 |
| | 24 | Culvert/ Relocation | 3 | 299 | 91.1 | 0.021 | 0.008 |
| | 25 | Bridge | 25 | 0 | 0.0 | 0.000 | 0.000 |
| | 34 | Culvert | 2 | 246 | 75.0 | 0.011 | 0.005 |
| | 26 | Culvert | 4 | 273 | 83.2 | 0.025 | 0.010 |
| | 35 | Culvert/ Relocation | 4 | 698 | 212.8 | 0.064 | 0.026 |
| | 40 | Culvert/ Relocation | 4 | 34 | 10.4 | 0.003 | 0.001 |
| | 36 | Culvert | 4 | 244 | 74.4 | 0.022 | 0.009 |
| | 37 | Culvert/ Relocation | 2 | 350 | 106.7 | 0.016 | 0.005 |
| | 38[1] | - | 3 | 0 | 0.0 | 0.000 | 0.000 |
| | 27 | Culvert/ Relocation | 10 | 1135 | 345.9 | 0.260 | 0.079 |
| | 39 | Culvert | 6 | 157 | 47.9 | 0.022 | 0.009 |
| | 28 | Culvert/ Relocation | 8 | 1047 | 319.1 | 0.192 | 0.078 |
| | | | **Total** | **6694** | **2040.3** | **1.895** | **0.578** |
| 5-3 & **5-4** | 32 | Culvert | 3 | 307 | 93.6 | 0.021 | 0.009 |
| | 20 | Bridge/ Relocation | 40 | 1271 | 387.4 | 1.167 | 0.472 |
| | 21 | Bridge | 30 | 0 | 0.0 | 0.000 | 0.000 |
| | 33 | Culvert | 2.5 | 325 | 99.0 | 0.019 | 0.008 |
| | 22 | Culvert | 8 | 244 | 74.4 | 0.045 | 0.018 |
| | 23 | Culvert | 5 | 64 | 19.5 | 0.007 | 0.003 |
| | 24 | Culvert/ Relocation | 3 | 299 | 91.1 | 0.021 | 0.008 |
| | 25 | Bridge | 25 | 0 | 0.0 | 0.000 | 0.000 |
| | 34 | Culvert | 2 | 246 | 75.0 | 0.011 | 0.005 |
| | 26 | Culvert | 4 | 273 | 83.2 | 0.025 | 0.010 |
| | 35 | Culvert/ Relocation | 4 | 698 | 212.8 | 0.064 | 0.026 |
| | 40 | - | 4 | 0 | 0.0 | 0.000 | 0.000 |
| | 36 | Culvert | 4 | 244 | 74.4 | 0.022 | 0.009 |
| | 37 | Culvert/ Relocation | 2 | 1545 | 471.0 | 0.071 | 0.029 |
| | 38[1] | Culvert/ Relocation | 3 | 1075 | 327.7 | 0.074 | 0.030 |
| | 27 | Culvert/ Relocation | 10 | 640 | 195.1 | 0.147 | 0.045 |
| | 39 | Culvert | 6 | 157 | 47.9 | 0.022 | 0.009 |
| | 28 | Culvert/ Relocation | 8 | 1047 | 319.1 | 0.192 | 0.078 |
| | | | **Total** | **8435** | **2571.0** | **1.908** | **0.581** |

**5-4** - Indicates the Recommended Preferred Alternative.
1 - Access to property was not granted, therefore the OHWM width is estimated.

With regard to stream crossing impacts none of the alternatives in Subsections 1, 2 and 3 would be preferred over another. In Subsection 4, Alternative 4-2 or 4-3 would have 670 feet (204 meters) and 0.27 acres (0.08 hectares) less of an impact on stream crossings than Alternative 4-1. In Subsection 5, Alternative 5-1 or 5-2 would have 1,741 feet (531 meters) and 0.01 acres (0.003 hectares) less of an impact on stream crossings than Alternative 5-3 or 5-4.

### Mitigation

A meeting was held on June 24, 2004 to discuss stream mitigation options and to gather feedback and comments regarding stream mitigation preferences. The following agencies were represented: MDNR, Missouri Department of Conservation (MDC), NRCS, United States Army Corps of Engineers (USACE), FHWA and MoDOT. The initial concept was to use the Missouri Conservation Heritage Foundation's Stream Stewardship Trust Fund program, which is administered by the MDC for stream mitigation. The program is usually for USACE Nationwide Permit projects and the scale of the I-70 impacts could exceed the limits of the program. During the meeting, it was suggested that there could be other stream development programs, with the USACE for example, that could be funded by MoDOT. The Missouri Department of Transportation will continue to explore the Stream Stewardship Trust Fund to determine if there are any priority projects that are in need of funding, to which MoDOT could contribute and receive credits.

## b. Wetlands

Wetlands within the SIU 1 Project Area were delineated in accordance with the USACE 1987 Wetland Delineation Manual and are described in Chapter III. The results of the detailed wetland delineations are presented in the *I-70 SIU 1 Draft Waters of the U.S. and Wetland Determinations Summary Report (*available upon request). This section provides an evaluation of the potential impact to wetlands due to the proposed alternatives under consideration. This evaluation includes field observations to determine direct impacts. Direct impacts would result from the acquisition of land for the proposed I-70 improvements.

### No-Build Alternative

The No-Build Alternative would result in no direct impacts to existing wetlands, as it does not include any construction activities.

### Build Alternatives

The Build Alternatives include the widening of I-70 and the reconstruction of interchanges as described in Chapter II. Potential impacts of the SIU 1 Build Alternatives to wetlands are summarized in Table IV-13.

**Table IV-13: Direct Wetland Impacts**

| Alternative | Wetland Number | NWI / NRCS | Impact Type | Wetland Type | Impact Area | |
|---|---|---|---|---|---|---|
| | | | | | acres | hectares |
| No-Build | - | - | - | - | 0 | 0 |
| ***Subsection 1** – I-470 to Mile Marker 19* | | | | | | |
| **1-1** & 1-2 | 15-1 | PF01A | Fill TL | PFO | 0.077 | 0.031 |
| | 16-2 | - | Fill TL | PEM | 0.298 | 0.121 |
| | 16-3 | PEMCx | Fill TL | PEM | 0.538 | 0.218 |
| | 16-4 | - | Fill TL | PEM | 0.166 | 0.067 |
| | | | | **Total** | **1.079** | **0.437** |
| ***Subsection 2** – Mile Marker 19 to Mile Marker 22* | | | | | | |
| 2-1 & **2-2** | None | - | - | - | 0 | 0 |
| | | | | **Total** | **0** | **0** |
| ***Subsection 3** – Mile Marker 22 to Mile Marker 25* | | | | | | |

| Alternative | Wetland Number | NWI / NRCS | Impact Type | Wetland Type | Impact Area | |
|---|---|---|---|---|---|---|
| | | | | | acres | hectares |
| 3-1 & 3-2 | 24-1 | PF01A | Fill | PFO | 0.018 | 0.007 |
| | 24-5 | PF01Ch, PEMCh, PEMAh | Fill | PFO | 0.761 | 0.308 |
| | 24-8 | PSS1A, PSS1C | Fill TL | PSS | 1.227 | 0.497 |
| | 24-10 | - | Fill | PSS | 0.108 | 0.044 |
| | | | | **Total** | **2.114** | **0.856** |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | |
| 4-1, 4-2 & 4-3 | 25-6 | PEMCx, PF01A | Fill | PEM, PFO | 1.243 | 0.503 |
| | 25-7 | - | Fill TL | PEM | 0.084 | 0.034 |
| | 25-8 | - | Fill | PEM, PFO | 2.826 | 1.146 |
| | 25-9 | PF01A | Fill | PFO | 3.326 | 1.346 |
| | 25-10 | PF01A | Fill | PFO | 0.599 | 0.242 |
| | | | | **Total** | **8.078** | **3.271** |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | |
| 5-1, 5-2, 5-3 & 5-4 | 29-3 | PUBGh, PSS1Ch | Fill | PUB, PFO | 0.648 | 0.262 |
| | 30-3 | PUBGh | Fill | PUB, PEM | 0.606 | 0.245 |
| | 32-2 | - | Fill | PFO | 0.148 | 0.06 |
| | 33-1 | PSS1A | Fill | PFO, PSS | 1.175 | 0.475 |
| | 34-2 | - | Fill | PEM | 0.447 | 0.181 |
| | 35-2 | - | Fill TL | PUB, PEM | 0.041 | 0.017 |
| | 35-3 | - | Fill TL | PUB, PFO | 0.015 | 0.004 |
| | 36-2 | PEM/SS1Ch | Fill | PEM | 0.001 | 0.0004 |
| | 37-1 | - | Fill | PEM | 0.254 | 0.103 |
| | 38-2 | PUBGh | Fill | FW | 0.137 | 0.055 |
| | | | | **Total** | **3.472** | **1.4024** |

5-4 – Indicates the Recommended Preferred Alternative.

With regard to wetland impacts, none of the Build Alternatives would be preferred over another. The total area of wetland impacts would be 14.743 acres (5.966 ha), regardless of the Build Alternative chosen.

**Mitigation**

While the United States Army Corps of Engineers Kansas City District will review a Section 404 Clean Water Act application for the RPA as part of their review of the I-70 improvements for SIUs 4 and 7, it is not anticipated that an application will be necessary for SIU 1. Measures included in USACE approvals and related permits that may result are expected to include a wide range of wetland mitigation and avoidance measures and specifications for constructed wetlands and/or wetland banking concepts and plans. The merged National Environmental Policy Act (NEPA)/Section 404 Process is not being used for SIU 1 since the construction of I-70 improvements would not occur in the immediate future. The Missouri Department of Transportation will continue to work with the USACE and other commenting agencies after completion of the Second Tier Studies to avoid and minimize wetland impacts within SIU 1 and also to develop plans and specifications for compensatory mitigation. The Missouri Department of Transportation would mitigate wetland losses by creating or restoring wetlands in sufficient quantity and quality such that there would be no net loss of area or function in accordance with state and federal wetland executive orders. Wetlands lost due to construction of I-70 improvements would be replaced in-kind based on the standard wetland classes through

mitigation activities in the project area or offsite. Potential wetland mitigation sites could include suitable construction borrow sites within the vicinity of the project.

In a report prepared for MoDOT titled I-70 Corridor – Potential Wetland Mitigation Sites (August 2002), it was determined that the floodplains of Davis Creek, the Blackwater River, the Loutre River, the Lamine River and Sni-A-Bar Creek contained areas that had the most potential to serve as wetland mitigation sites. A meeting was held on June 24, 2004 to discuss these potential sites and other mitigation options, and to gather feedback and comments regarding wetland mitigation preferences. The following agencies were represented: MDNR, MDC, NRCS, USACE, FHWA and MoDOT. There was a discussion regarding a memo that addressed the following three mitigation options:

- On-Site Mitigation – Concentrated (occurring at one site) or dispersed (occurring at several sites)
- Off-Site Mitigation – Mitigation being handled through the use of a wetlands bank. This could be the use of an existing MoDOT wetlands mitigation bank or at a privately owned mitigation bank.
- Off-System Mitigation – MoDOT would fund the development of wetlands at a site or sites identified by another agency that have been designated as a very high priority for acquisition and development as wetlands, or to develop wetlands on an agency owned site that is currently lacking funding.

The Missouri Department of Transportation prefers to concentrate wetland mitigation in a large area, however, based on the discussion and preferences expressed by the resource agencies, it may be more realistic to utilize more than one site or option within the corridor. Although most of the agencies prefer on-site mitigation, or mitigation within the same watershed, they also realize that it may be more practical to develop a few larger, concentrated sites rather than several small dispersed sites for a long linear project such as this. There was also a consensus that the Loutre River valley was an excellent location for wetlands mitigation.

The Missouri Department of Transportation also noted that the Environmental Protection Agency (EPA), the USACE, and the FHWA have joint guidance where it is stated that banking is the preferred option for wetland impacts along linear transportation projects. In addition, a statewide wetlands mitigation plan for Section 404 impact mitigation has been developed. The State has been divided by MoDOT into “Service Areas” and most of the I-70 corridor would fall within the Missouri River Service Area. The Missouri Department of Transportation statewide wetlands mitigation would include wetland areas along the Loutre River, the Little Blue River Reservoir, the Lexington Bridge and the Black River. The Missouri Department of Transportation will continue to coordinate with the USACE and other agencies in the process of developing an appropriate I-70 wetland mitigation plan.

### c. Ponds

**No-Build Alternative**
The No-Build Alternative would result in no direct impacts to existing ponds, as it does not include any construction activities.

## Build Alternatives

The Build Alternatives include the widening of I-70 and reconstruction of interchanges as described in Chapter II. Potential impacts from the SIU 1 Build Alternatives to ponds are illustrated in detail in the *I-70 SIU 1 Draft Waters of the U.S. and Wetland Determinations Summary Report* (available upon request) and are summarized in Table IV-14.

**Table IV-14: Direct Pond Impacts**

| Alternative | Pond Number | NWI/NRCS | Impact Type | Wetland Type | Jurisdictional | Jurisdictional Pond Impact Area | | Non-Jurisdictional Pond Impact Area | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | acre | ha | acre | ha |
| No-Build | None | - | - | - | | | | | |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | | | | | | | | | |
| 1-1 & 1-2 | None | - | - | - | | | | | |
| | | | | **Total for Subsection 1** | | **0** | **0** | **0** | **0** |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | | | | | | | | | |
| 2-1 & 2-2 | None | - | - | - | | | | | |
| | | | | **Total for Subsection 2** | | **0** | **0** | **0** | **0** |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | | | | | | | | | |
| 3-1 & 3-2 | 24-6 | PUBFh | Fill | PUB | Yes | 0.249 | 0.101 | | |
| | | | | **Total for Subsection 3** | | **0.249** | **0.101** | **0** | **0** |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | | | | | | | | | |
| 4-1, 4-2 & 4-3 | 25-4 | PUBGh | Fill | PUB | | | | 0.061 | 0.025 |
| | 25-5 | PUBGh | Fill | PUB | | | | 0.003 | 0.001 |
| | 26-1 | - | Fill | PUB | Yes | 0.273 | 0.110 | | |
| | 26-2 | PUBFh | Fill | PUB | | | | 0.331 | 0.134 |
| | 26-5 | - | Fill | PUB | | | | 0.238 | 0.096 |
| | | | | **Total for Subsection 4** | | **0.273** | **0.110** | **0.633** | **0.256** |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | | | | | | | | | |
| 5-1 & 5-2 | 29-3 | PUBGh, PSS1Ch | Fill | PUB, PFO | | | | 0.648 | 0.262 |
| | 30-3 | PUBGh | Fill | PUB, PEM | | | | 0.606 | 0.245 |
| | 30-4 | PUBGh | Fill | PUB | Yes | 0.211 | 0.085 | | |
| | 31-1 | PUBGh, PEMCh | Fill | PUB | | | | 0.891 | 0.361 |
| | 31-2 | PUBGh | Fill | PUB | | | | 0.340 | 0.137 |
| | 33-3 | PUBGh | Fill | PUB | | | | 0.119 | 0.048 |
| | 34-3 | PUBGh | Fill | PUB | | | | 1.439 | 0.582 |
| | 35-1 | PUBGh | Fill TL | PUB | Yes | 0* | 0* | | |
| | 35-2 | - | Fill TL | PUB, PEM | Yes | 0.041 | 0.017 | | |
| | 36-4 | PUBGh | Fill TL | PUB | | | | 0* | 0* |
| | 37-1 | - | Fill | PEM | | | | 0.254 | 0.103 |
| | 38-1 | PUBGh | Fill | PUB | | | | 1.933 | 0.782 |
| | 38-2 | PUBGh | Fill | FW | | | | 0.137 | 0.055 |

| Alternative | Pond Number | NWI/NRCS | Impact Type | Wetland Type | Jurisdictional | Jurisdictional Pond Impact Area | | Non-Jurisdictional Pond Impact Area | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | acre | ha | acre | ha |
| | 38-4 | PUBGh | Fill TL | PUB | | | | 0.226 | 0.091 |
| | 38-5 | PUBFh | Fill | PUB | | | | 0.252 | 0.102 |
| | 39-4 | PUBGh | Fill | PUB | | | | 0.428 | 0.173 |
| **Total for Subsection 5 (Alts. 5-1 & 5-2)** | | | | | | **0.252** | **0.102** | **7.273** | **2.943** |
| 5-3 & **5-4** | 29-3 | PUBGh, PSS1Ch | Fill | PUB, PFO | | | | 0.648 | 0.262 |
| | 30-3 | PUBGh | Fill | PUB, PEM | | | | 0.606 | 0.245 |
| | 30-4 | PUBGh | Fill | PUB | Yes | 0.211 | 0.085 | | |
| | 31-1 | PUBGh, PEMCh | Fill | PUB | | | | 0.891 | 0.361 |
| | 31-2 | PUBGh | Fill | PUB | | | | 0.340 | 0.137 |
| | 33-3 | PUBGh | Fill | PUB | | | | 0.119 | 0.048 |
| | 34-3 | PUBGh | Fill | PUB | | | | 1.439 | 0.582 |
| | 35-1 | PUBGh | Fill TL | PUB | Yes | 0.394 | 0.160 | | |
| | 35-2 | - | Fill TL | PUB, PEM | Yes | 0.041 | 0.017 | | |
| | 36-4 | PUBGh | Fill TL | PUB | | | | 0.089 | 0.036 |
| | 37-1 | - | Fill | PEM | | | | 0.254 | 0.103 |
| | 38-1 | PUBGh | Fill | PUB | | | | 1.933 | 0.782 |
| | 38-2 | PUBGh | Fill | FW | | | | 0.137 | 0.055 |
| | 38-4 | PUBGh | Fill TL | PUB | | | | 0.226 | 0.091 |
| | 38-5 | PUBFh | Fill | PUB | | | | 0.252 | 0.102 |
| | 39-4 | PUBGh | Fill | PUB | | | | 0.428 | 0.173 |
| **Total for Subsection 5 (Alts. 5-3 & 5-4)** | | | | | | **0.646** | **0.261** | **7.362** | **2.979** |

**5-4** - Indicates the Recommended Preferred Alternative.
* - Ponds 35-1 and 36-4 are not impacted by Alternatives 5-1 or 5-2

With regard to jurisdictional pond impacts, none of the alternatives, with the exception of Alternative 5-1 or 5-2, would be preferred over another. Alternative 5-1 or 5-2 would have 0.5 acres (0.2 hectares) less of an impact to jurisdictional ponds than Alternative 5-3 or 5-4.

**Mitigation**

While the United States Army Corps of Engineers Kansas City District will review a Section 404 Clean Water Act application for the RPA as part of their review of the I-70 Improvements for SIUs 4 and 7, it is not anticipated that an application will be necessary for SIU 1. Measures included in USACE approvals and related permits that may result are expected to include a wide range of wetland mitigation and avoidance measures and specifications for constructed wetlands and/or wetland banking concepts and plans. The merged NEPA/Section 404 Process is not being used for SIU 1 since the construction of I-70 improvements would not occur in the immediate future. The Missouri Department of Transportation will continue to work with the USACE and other commenting agencies after completion of the Second Tier Studies to avoid and minimize impacts to jurisdictional ponds within SIU 1 and also to develop plans and

specifications for compensatory mitigation. The Missouri Department of Transportation would mitigate jurisdictional pond losses by creating or restoring ponds in sufficient quantity and quality such that there would be no net loss of area or function in accordance with state and federal wetland executive orders. Jurisdictional ponds lost due to construction of I-70 improvements would be replaced in-kind based on the standard wetland classes through mitigation activities in the project area or offsite. Potential jurisdictional pond mitigation sites could include suitable construction borrow sites within the vicinity of the project.

## 8. Physiography and Topography

The physiographic and topographic conditions within the SIU 1 Project Area are described in Chapter III.

### a. No-Build Alternative

The No-Build Alternative does not include any construction activities. Therefore, physiographic or topographic factors would not be a factor in terms of the No-Build Alternative.

### b. Build Alternatives

There are no significant physiographic or topographic factors that would adversely affect any of the Build Alternatives. The bedrock geology in the SIU 1 Project Area is free of karst features such as sinkholes and caves, and appears to be relatively stable with the exception of some possible slope stability problems related to expansive shales. Any seismic activity related to the New Madrid seismic zone is not expected to significantly affect roadway structures such as bridges. A concern within the SIU 1 Project Area is the suitably of native soils for road construction. The soils within the SIU Project Area range from fair to severely limited for roadway construction based on low strength, frost action, shrink-swell potential, flooding or poor drainage. The severe rating implies that soil properties and features are such that special design considerations and increases in construction and maintenance costs would be required.

During subsequent design phases, detailed soil properties along the RPA would be reviewed to provide a summary of the baseline engineering conditions. This information would be supplemented with additional investigation of the engineering properties of soils where warranted, such as along new alignments and where load bearing structures such as overpasses and bridges would be located.

## 9. Terrestrial and Aquatic Communities

### a. Terrestrial Communities

**No-Build Alternative**
The No-Build Alternative would result in no environmental consequences for existing terrestrial communities, as it does not entail any construction activities.

### Build Alternatives

Most terrestrial vegetation disruption associated with the Build Alternatives would impact agricultural plant communities (i.e., cropland, pasture, etc.), which have limited value as habitat due to the intensive and continued disturbance associated with agricultural activities. The loss of vegetation in these areas would not affect the viability of regional plant populations of any species and would not impact wildlife habitat beyond the immediate area of disturbance.

Many of the native plant communities throughout the project area have been lost or severely fragmented through agricultural activities and development. The most extensive native community or sensitive habitats within the project area are wetlands and narrow strips of riparian forest found along streams throughout the project area. Impacts to wetlands are discussed in Chapter IV.7. Riparian forest areas are important to wildlife and impacts to these areas are provided in Table IV-15.

**Table IV-15: Riparian Corridor Impacts**

| Alternative | Riparian Corridor Impacts (acres/hectares) |
|---|---|
| No-Build | 0 |
| ***Subsection 1*** *– I-470 to Mile Marker 19* | |
| 1-1 | 0 |
| 1-2 | 0 |
| ***Subsection 2*** *– Mile Marker 19 to Mile Marker 22* | |
| 2-1 | 0 |
| 2-2 | 0 |
| ***Subsection 3*** *– Mile Marker 22 to Mile Marker 25* | |
| 3-1 | 0 |
| 3-2 | 0 |
| ***Subsection 4*** *– Mile Marker 25 to Mile Marker 29* | |
| 4-1 | 0 |
| 4-2 | 0 |
| 4-3 | 0 |
| ***Subsection 5*** *– Mile Marker 29 to Mile Marker 39* | |
| 5-1 | 12.8/5.2 |
| 5-2 | 12.8/5.2 |
| 5-3 | 31.3/12.7 |
| 5-4 | 31.3/12.7 |

- Indicates the Recommended Preferred Alternative.

With regards to riparian corridor impacts none of the alternatives, with the exception of Alternative 5-1 or 5-2, would be preferred over another. Alternative 5-1 or 5-2 would impact approximately 18.5 acres (7.5 hectares) less riparian corridor habitat than Alternative 5-3 or 5-4.

Wildlife impacts associated with the Build Alternatives can be both short and long-term. These impacts consist of individual disruption, habitat avoidance, habitat disruption and mortality (direct and indirect). Wildlife species that would be impacted by the Build Alternatives are common to rural environments of Missouri, so although some individual wildlife would be impacted or in some cases lost, it would not affect the viability of regional populations.

## b. Aquatic Communities

**No-Build Alternative**
The No-Build Alternative would result in no direct impacts to existing aquatic communities, as it does not include any construction activities.

**Build Alternatives**
Potential impacts to the water quality and aquatic communities resulting from roadway construction may be short or long term. Short-term impacts are primarily related to the construction phase, whereas long-term impacts could be associated with both the construction, operational and maintenance phases. Impacts to water quality and aquatic communities during construction typically result from elevated turbidity levels and the deposition of sediment into neighboring surface waters. Long-term water quality would likely not be adversely affected by the proposed improvements.

A total of 40 jurisdictional stream crossings would be impacted by the various Build Alternatives (Table IV-12). Among these, a total of 14 streams would require channel relocation and restoration for a total distance of approximately 15,900 to 18,300 feet (4,846 to 5,577 meters). Potential impacts associated with these relocations include direct mortality of aquatic biota, localized impacts to water quality and loss of riparian habitat. In many cases, existing culverts would be extended to construct the additional highway lanes.

**Construction Impacts**
Increased sedimentation and turbidity can adversely affect aquatic primary production as well as feeding rates and reproductive success of aquatic organisms. However, fish and benthic macroinvertebrate communities will likely recover quickly after the cessation of construction activities. The Missouri Department of Transportation would implement its Sedimentation and Erosion Control Program to reduce the severity of impact to aquatic habitats resulting from sedimentation and erosion. Any localized sedimentation and erosion would likely be short-term due to the dynamic nature of the streams in this area. Increased stream flow resulting from heavy precipitation events scour stream channels and redistribute any additional sediment downstream to larger, slower-flowing rivers. Water column turbidity and sedimentation rates associated with construction activities generally return to baseline levels upon the completion of project construction and the establishment of good vegetative cover.

With regard to aquatic community impacts none of the alternatives in Subsections 1, 2 and 3 would be preferred over another. In Subsection 4, Alternative 4-2 or 4-3 would have 670 feet (204 meters) and 0.27 acres (0.08 hectares) less of an impact on stream crossings than Alternative 4-1. In Subsection 5, Alternative 5-1 or 5-2 would have 1,741 feet (531 meters) and 0.01 acres (0.003 hectares) less of an impact on stream crossings than Alternative 5-3 or 5-4.

**Mitigation**
The Missouri Department of Transportation would implement the stream mitigation and enhancement plan for major creek crossings and would also implement its Sedimentation and Erosion Control Program to reduce the severity of impact to aquatic habitats.

In most situations, crossings would be designed at right angles to minimize impacts. Culverts would be installed at grade and the discharge channel equipped with energy dissipation

features to protect against bed degradation. Additional discussion related to the mitigation of aquatic communities can be found in Chapter IV.7 of this report (Wetlands and Waters of the United States).

## 10. Threatened and Endangered Species

### a. No-Build Alternative

The No-Build Alternative does not include any construction activities and therefore would result in no direct impacts to threatened and endangered species.

### b. Build Alternatives

The Missouri Department of Transportation queried the Missouri Natural Heritage Database and determined that no federal or state listed species are known to occur in or within the vicinity of (i.e., within one mile of the proposed right of way) the SIU 1 Project Area (Wren [MoDOT], personal communication). Therefore, no impacts to threatened and endangered species are anticipated with any of the Build Alternatives.

## 11. Cultural Resources

### a. No-Build Alternative

The No-Build Alternative does not include any construction activities and therefore would result in no direct impacts to Cultural Resources.

### b. Build Alternatives

**Architecture**
As stated in Chapter III, one property within SIU 1 was identified as being eligible for listing on the National Register of Historic Places (NRHP), The Rice House (1JA107) (Subsection 4, Exhibit IV-9). The Build Alternatives in this area include rebuilding the existing interchange and widening South Broadway Street (Route F). However, none of the Build Alternatives would include the permanent incorporation, temporary occupancy or any constructive use of 4(f) lands with regard to the Rice House (1JA107). It was also determined that the Build Alternatives would have no adverse effect on the NRHP eligible property. The State Historic Preservation Office (SHPO) concurred with this effect recommendation in a letter dated January 4, 2005. A copy of the correspondence from the SHPO is included in Appendix E.

**Archaeology**
As stated in Chapter III, no archaeological sites within SIU 1 were identified as being eligible for listing on the NRHP. Therefore, no known NRHP eligible archaeological sites would be impacted by any of the Build Alternatives. If any archaeological sites were encountered during the construction process, MoDOT would avoid further impacts and would have a qualified archeologist assess the site.

### c. Summary

A Memorandum of Agreement (MOA) would not be necessary since there are no adverse impacts to NRHP eligible properties.

## 12. Hazardous Waste Sites

### a. No-Build Alternative

The No-Build Alternative does not include any construction activities. Therefore, the No-Build Alternative would not affect potential hazardous waste sites.

### b. Build Alternatives

Hazardous waste sites located within the SIU 1 Project Area were inventoried and reviewed based on the results of a search of federal and state environmental databases. The inventory in Chapter III includes a ranking of the sites to determine those with a "None-to-Low", a "Low-to-Moderate", or a "Moderate-to-High" potential for impact. This discussion provides an assessment of the "Moderate-to-High" ranked sites for each SIU 1 subsection. The "Moderate-to-High" ranked sites and their potential for impacts are listed in Table IV-16.

Among the Build Alternatives, there are five sites ranked "Moderate-to-High" whose past or present use indicates a potential for hazardous waste contamination of soils and possibly groundwater. Minor variation of alignments during final design could avoid some of these sites, however, many of them could require the removal of underground fuel storage tanks or further investigation to evaluate potential contamination of soils or groundwater. In addition, the possibility exists that additional sites with contamination may be encountered during actual construction, particularly given the number of service stations near each of the existing interchange locations within SIU 1. In the event contamination is encountered, MoDOT would develop an appropriate course of action and coordinate with the MDNR.

**Table IV-16: "Moderate-to-High" Rank Potential Hazardous Waste Sites**

| Site ID | Site Location | Federal/State Program List | Comments | Potential for Impact |
|---|---|---|---|---|
| ***Subsection 1 –*** *I-470 to Mile Marker 19* | | | | |
| BP Amoco Service Station | 1922 Woods Chapel Road Blue Springs, MO | LUST UST Spills | Former LUST site. LUST cleanup completed in 1999. Gasoline spill of unknown quantity reported in February 2002. | May be impacted by Alternative 1-1 or 1-2 |

| Site ID | Site Location | Federal/State Program List | Comments | Potential for Impact |
|---|---|---|---|---|
| ***Subsection 2 –*** *Mile Marker 19 to Mile Marker 22* | | | | |
| BP Amoco Service Station | I-70 and Route 7 (southeast corner of interchange) Blue Springs, MO | LUST UST FINDS RCRIS | Contamination related to diesel spill. Former service station, which may have been the source of contamination, reportedly encompassed area to north and south of site. The site is currently being addressed through risk-based corrective action (RBCA) through the MDNR. | May be impacted by Alternative 2-1 or 2-2 |
| Phillips Petroleum Company Service Station | 1202 North Route 7 (northeast corner of interchange) Blue Springs, MO | LUST UST | Groundwater contamination related to gasoline spill. Tanks were removed with 2,200 $yd^3$ of soil. Groundwater contamination appears to be on-site. The site is currently being addressed through RBCA through the MDNR. | May be impacted by Alternative 2-1 or 2-2 |
| ***Subsection 3 –*** *Mile Marker 22 to Mile Marker 25* | | | | |
| New Trail Travel Center | Interchange at Route AA/BB - 1103 N. Buckner Grain Valley, MO | LUST | Orphan site – no information available | May be impacted by widening of Route BB in association with Alternative 3-1 or 3-2 |
| ***Subsection 4 –*** *Mile Marker 25 to Mile Marker 29* | | | | |
| None | - | - | - | - |
| ***Subsection 5 –*** *Mile Marker 29 to Mile Marker 39* | | | | |
| Former City Dump | Northwest quadrant of current CR 96 / Johnson Road Interchange, Odessa, MO | Not reported | Reported by local officials | May be impacted by proposed mainline with Alternative 5-1, 5-2, 5-3 or 5-4. |

With regard to "Moderate-to-High" potential hazardous waste sites, none of the alternatives would be preferred over another.

**Mitigation**

The preferred mitigation measures for these sites would be avoidance. However, in the event that these sites could not be avoided and contamination was proven to be present, MoDOT would negotiate cleanup responsibility with the current owner. Negotiations with the current owner and any investigative or remedial activities would be coordinated with the MDNR's Hazardous Waste Management Program and would comply with all EPA requirements. If any hazardous waste sites are encountered during the construction process, they would be dealt with in accordance with appropriate state and federal regulations.

# 13. Visual Resources

This section analyzes and summarizes the impacts to the visual and aesthetic resources in the SIU 1 Project Area and compares the potential impacts of the proposed alternatives. Visual quality impacts are determined by the degree of "change" in the visual environment as related to viewer response. As described in Chapter III, there are two distinct categories of viewers to be considered in this project: viewers who are users of the project facility (views *from* the road); and viewers who can observe the roadway facility from an adjacent vantage point (views *of* the road).

## a. No-Build Alternative

The No-Build Alternative would not include any construction activities and therefore would not alter the existing visual environment. However, with little or no improvements, the increased traffic volumes and resulting congestion could be perceived as a degradation of the existing visual quality.

## b. Build Alternatives

Improvements and realignments to the existing I-70 facility would alter the viewsheds and impact local vantage points within the project area. In general, the improvements would increase the visual scale of the existing I-70 facility. However, the visual character changes of the corridor as a whole would be minimal since the scenic features would not be eliminated or substantially disrupted. No publicly defined scenic areas or vantage points would be impacted.

**Urban Subsections**
Within the subsections of SIU 1 with urban mainline alternatives (Subsections 1, 2, 3 and 4) construction would utilize a narrow median with a concrete barrier centered on the current I-70 and take place within the existing right of way; thus minimizing the degree of change to the existing visual environment. Since there is already an existing roadway in place and the new roadway would be constructed within the existing right of way, the "change" that would occur to the visual environment would be minimal. Existing bridges and interchanges would be reconstructed on a slightly larger scale to accommodate the new facility design. The larger scale of the interchanges and reconfigured access roads may bring the roadway closer to visual receptors. There would be a "change" that would occur to the visual environment in these areas that would be moderate but the adjacent visual receptors are accustomed to the proximity of an interstate highway facility. The existing visual quality rating for the urban subsections of SIU 1 is currently Moderate to Low and would not likely change due to any of the Build Alternatives. The views *from* the roadway of any of the Build Alternatives would essentially remain the same as the existing views.

**Rural Subsections**
Within the subsections of SIU 1 with rural mainline alternatives (Subsection 5) construction would utilize a 124-foot wide grassed median and would be offset slightly to the north of the existing I-70 centerline. The widening strategy in the rural subsections would require additional right of way to the north of the existing roadway to allow for the wide median and additional lanes. The larger scale of the mainline in the proposed rural alternatives may impact some

views of the roadway. However, since there is already an existing roadway in place and the expansive grassed median could serve to lessen the massing of the facility, the "change" that would occur to the visual environment would be minimal and the visual rating would remain the same. Existing bridges and interchanges would be reconstructed on a larger scale to accommodate the wider facility design and in some instances, the interchange would be located in an area where there was not an existing interchange. This and the addition of new access roads would cause a "change" to the visual environment in these areas. However, there are a limited number of sensitive visual receptors in this area and the visual rating for the area would remain the same. The views *from* the roadway of any of the Build Alternatives would essentially remain the same as the existing views.

**Construction Activities**

During the construction of any of the Build Alternatives, both views of and from the facility would be temporarily degraded due to the construction activities such as earth moving, building demolition and roadway construction. The length of duration and the severity of these temporary visual impacts would vary depending on the specific construction requirements for each area within SIU 1.

**Visual and Aesthetic Enhancement**

As part of the Second Tier Studies, MoDOT formed an Enhancement Subcommittee and developed the I-70 Corridor Enhancement Plan. Dependent upon the availability of funding and local partnerships, the proposed action would consider implementation of the Corridor Enhancement Plan that is intended to minimize potentially negative effects. The purpose of the plan is to "develop appropriate measures to address the visual characteristics of the I-70 improvements and design issues." The scope of the plan includes all seven SIUs from Kansas City to St. Louis. The goals of the plan are to create an enhancement concept for the corridor that:

- complements the existing natural environment,
- maintains sensitivity to the existing context of the corridor,
- provides a sense of consistency along the entire corridor,
- showcases Missouri through enhancements that highlight Missouri history, cultural resources and economy,
- establishes baseline enhancements for the entire corridor, and
- identifies opportunities for additional enhancements by local communities and other partnering agencies.

The enhancements proposed in the plan seek to visually blend and enhance the I-70 improvements into the existing landscape and natural features in the corridor while introducing design treatments to built elements that reduce their sense of scale. Each overpass and interchange along the corridor would receive integrated enhancements that would visually connect to each other while supporting the goals identified above.

**Mitigation**
Based on the impacts of the Preferred Alternative and proposed facility enhancements, no mitigation measures are required or recommended.

# C. Energy and Construction Impacts

## 1. No-Build Alternative

The No-Build Alternative, due to its very definition, requires no construction along I-70, and thus would have no increased energy or construction impacts.

However, over time, energy use – specifically gasoline and diesel fuel – would increase due to increased travel times along the corridor resulting from congestion.

## 2. Build Alternatives

For all of the Build Alternatives, measures would be taken to reduce energy consumption, including limiting the idling of construction equipment and employee vehicles, encouraging carpools and vanpools among construction workers and locating staging areas as close as possible to work sites.

Construction would occur in several manageable phases. Other construction impacts are described, where appropriate, in Chapter IV. The following discussion summarizes the key construction period impacts:

- Vehicle travel delays and detours will be required. Standard measures used by MoDOT in construction projects will apply. These measures relate to issues such as handling delays, signage to direct traffic and specific steps to address safety for construction workers and motorists.
- Construction noise would occur along the Build Alternatives and would most directly impact adjacent sensitive receptors. Noise level maximums at 15 meters (50 feet) from the source would be expected between 80 and 85 dBA Leq.
- Dust (particulate) emissions and exhaust emissions would be generated. Particulate emissions would result from wind and vehicle travel after soil-disturbing activities such as clearing, excavation, and grading. Standard MoDOT construction specifications and normal construction practices would be included in the construction contracts for the project. Examples of related measures include:
    - Watering or otherwise treating disturbed (graded or excavated) surfaces to form a protective layer, with treatment frequency increased when wind and ground surface conditions are problematic.
    - Limiting speeds of construction vehicles on unpaved roads, when necessary.
- Soil erosion, sedimentation and water quality impacts may occur as a result of excavation, earthmoving, grading and vegetation removal. All contractors will be required to follow the provisions of MoDOT's general stormwater permit

requirements. Because MoDOT's Standard Specifications call for erosion and sediment control during construction, it is expected that related impacts would be minor.

- Visual impacts from storage areas and construction disruption would be expected in natural viewsheds. Standard measures to maintain and limit storage areas would be implemented to reduce viewshed impacts in sensitive areas.
- Off-site borrow and disposal areas may cause additional impacts that cannot be addressed prior to final design. These impacts and related mitigation measures should be addressed when related details are available.

# D. Secondary and Cumulative Impacts

## 1. Introduction to Secondary and Cumulative Impacts

The assessment of secondary and cumulative impacts in this EA is required by Council on Environmental Quality (CEQ) regulations. Secondary and cumulative impacts result when the effects of an action or project are added to or interact with other effects in a particular place and within a particular time. The cumulative impacts of an action or project can be viewed as the total effects on a resource, ecosystem or human community of that action or project and all other activities affecting that resource no matter what entity is taking the actions. Secondary and cumulative impacts may occur outside the highway right of way and are generated as a result of changes in development patterns. Secondary or cumulative impacts may be the unintended consequences of roadway improvements. These impacts may include increases in traffic volumes; or changes in population, housing, employment, tax base or other land use changes in the SIU 1 Project Area.

Determining the boundaries and time period depends on the characteristics of the resources affected, the magnitude and scale of the projects' impacts and the environmental setting. To avoid extending data and analytical requirements beyond those relevant to decision-making, a practical delineation of the spatial and temporal factors is needed. For the Improve I-70 Project, the existing spatial factor is the I-70 Study Corridor from Kansas City to St. Louis and the time period will cover from approximately the 1950's through the year 2030. For the purpose of the overall secondary and cumulative impacts evaluation, the length of the I-70 Study Corridor is approximately 200 miles (322 kilometers), the width for evaluation is resource dependent and the time period will cover approximately 75 years. The secondary and cumulative impacts evaluation for SIU 1, from Independence to Odessa, will cover the same time period. This secondary and cumulative impact analysis will consider impacts that are due to past, present and reasonably foreseeable future actions within the SIU 1 Project Area.

## 2. Existing I-70 Study Corridor

### a. Land Use

Beginning in the 1910s and 1920s, Missouri improved and paved its first major cross-state highway. The route was designated Highway 40 and by the 1930s, the road was carrying cross-state and national traffic. A number of small communities arose along the highway to

provide basic services for travelers such as fuel, food and lodging. When the original I-70 Corridor was located and constructed during the 1950s and 1960s, the direct and secondary impacts included noticeable changes to land use.

Most of the former Highway 40 was either incorporated into the new interstate or changed into a local access road along the new I-70 Study Corridor. Local access was lost to the controlled access I-70 facility and as a result many of the unincorporated villages and their transportation related businesses disappeared along the corridor. Although the primary land use within the corridor is currently rural in character, the change from forested and agricultural lands to developed land was highly related to the selection of the new I-70 facility, as well as the locations of the current interchanges. Economic development generated new jobs, which in-turn increased the demand for housing, commercial and retail services, and fundamental community infrastructure such as schools, libraries, police and fire protection, and sewer and water service. The economic growth and the secondary growth that followed are considered cumulative impacts. The I-70 transportation corridor, past, now and in the future, will continue the economic development trend and hence, impacts to land use. Transportation contributes to and is one of several factors that help to facilitate economic development.

The existence or the creation of adequate utilities and other infrastructure was an attraction for development. Communities or areas with these types of facilities were and are able to attract development. Development is a generator of tax rate revenues that contribute to the initial investment in the utilities and infrastructure. Over time, the expansion of the population, households and employment took place with the accompanying increase in the tax base. The cumulative impacts of the corridor have continued with these development trends until the present and it is expected that these trends will continue with the reconstruction and widening associated with the Improve I-70 Project.

Agricultural uses, scattered residential and retail development, mining, forested and natural areas distinguish the rural areas. More dense and urbanized land uses occur within the cities located along the I-70 Study Corridor. Within SIU 1, these include some smaller urbanized areas found at Oak Grove, Grain Valley and Odessa. Eastern Jackson County is generally characterized by low density, suburban development and represents the outermost reaches of the Kansas City metropolitan area. The development trend within the entire I-70 Study Corridor is especially expected to continue on the fringe or edges of the urban areas of Kansas City, Columbia and St. Louis. The basic infrastructure is already in place, the typical level of traffic is high and the non-interstate roadways usually have unrestricted access. These three features are important factors to attract development. With the improvement of I-70, SIU 1 would realize some residential and business displacements along the existing roadway. It is likely that these displacements would relocate close to or within the SIU 1 Project Area, especially the transportation-dependent businesses. This, in turn, would cause an additional change in land use from non-developed to developed use.

### b. Air Quality

The proposed reconstruction and widening of the 200-mile long I-70 Corridor falls within the Metropolitan Kansas City Interstate Air Quality Control Region, the Southwest Missouri Intrastate Air Quality Control Region, the Northern Missouri Intrastate Air Quality Control Region and the Metropolitan St. Louis Interstate Air Quality Control Region. The Metropolitan Kansas

City Interstate Control Region that includes SIU 1 is classified as a maintenance area for Ozone. Corridor wide, emissions are projected to decrease in the next 20 to 30 years. These reductions in emission would offset the increase in free-flow traffic volumes along the entire I-70 Study Corridor as well as the SIU 1 Project Area. It is recognized that development trends are expected to continue throughout the foreseeable future. With the improved mobility and the access management guidelines implemented with the ultimately reconstructed I-70 corridor, this project is not anticipated to cause a violation of the NAAQS. Within SIU 1, conformity statements may be required from MARC, the metropolitan planning organization for the SIU 1 region.

### c. Parklands

Reconstructing and widening the existing I-70 Corridor could result in secondary and cumulative impacts from improved transportation access. As ensuing development expands around existing parkland facilities, particularly in urban areas, some encroachment could take place because of street widening or changes in land use/zoning. Increased development could also result in increased noise levels and visual impacts in some parklands that were previously somewhat isolated.

An additional secondary impact could occur in urban areas in the form of park system expansion. A trend of expanding development in an area can trigger the city with jurisdiction to purchase more property to be preserved as part of a parkland plan or open space corridor. This land use determination might have otherwise been at the discretion of private developers and individual property owners. Also, with the reconstruction of existing interchanges, there would be the opportunity to provide increased hiking trails plus provisions for bicyclists and pedestrians. Additionally, these areas could provide the opportunity for community initiated enhancement features.

### d. Prime Farmland

The proposed reconstruction and widening of I-70 may result in secondary impacts to prime farmland due to farmland conversion along the new required right of way. It is estimated that approximately 1,300 acres (526 hectares) of farmland would be directly impacted along the entire length of the I-70 Study Corridor and approximately 186.7 acres (75.6 hectares) within SIU 1. Farmers affected by the conversion of all or part of their land to the development of the roadway may choose to no longer farm or cultivate their land. As a result, more farmland soils could be taken out of production if farmers choose to sell their land for non-farm uses. If the farmland is sold, it may be subdivided and converted to commercial and residential land use.

The improved roadway may, at some time in the future, act as a catalyst for increased growth, relocated development and expansion in the region. Historically, this has taken place in the I-70 Corridor. New development would depend on the location, and such development would be expected to occur in areas already near the existing population centers. However, with the proposed reconstruction and widening of existing I-70, overall secondary and cumulative impacts to the prime farmland resource are expected to be minimal.

### e. Water Resources and Water Quality

Secondary impacts to water quality could result from increased development along new roadways, especially within urban areas. Many of the impacts would be similar to those during the construction and operational phases of a road project. In addition, the location of residential areas in close proximity to streams, drainages and impoundments could result in increased nutrient discharges to these surface waters. Impacts of increased nutrient loading include algal blooms and degradation of water quality and aquatic life.

The location of industrial development along new roadways could increase the potential for hazardous materials and waste to be discharged into receiving waters from improper handling and accidental spills. The extent of groundwater contamination would be dependent upon local spill prevention and response plans.

Secondary development in the vicinity of surface water resources could result in increased stormwater runoff and higher flow rates in receiving streams during storm events. An impact of increased paved areas and stormwater runoff is a greater potential for flooding in areas that may not have been flooded in the past.

### f. Wetlands and Waters of the U.S.

There is the potential for the proposed reconstruction and widening of I-70 to contribute to secondary and cumulative impacts to wetlands and other waters of the U.S. During the construction phase, activities that impact these sites through sedimentation, changes in the nature of stream hydraulics, or clearing of vegetation in riparian habitat, are likely to have impacts on wetland functions and values of downstream or downslope waters of the U.S., including wetlands. It is estimated that approximately 80 acres (32.4 hectares) of wetlands would be directly impacted along the entire I-70 Corridor, including 14.7 acres (5.9 hectares) within SIU 1. It should be noted however, that there would be wetland mitigation planned within the corridor to ensure, at a minimum, no net loss of wetlands. Major floodplain and floodplain complexes across the 200-mile corridor include the Blackwater, Lamine, Missouri and Loutre Rivers; however, none of these are located in SIU 1. The Missouri River floodplain and Overton Bottoms wetlands complex, located outside the SIU 1 Project Area, is a special area within the I-70 Study Corridor.

### g. Terrestrial and Aquatic Communities

Although the direct loss of forest acreage can eliminate or reduce the size of habitats, secondary and cumulative impacts can also occur as a result of habitat fragmentation, which can have an adverse effect on species diversity and connectivity. It is estimated that approximately 31.3 acres (12.7 hectares) of forested land would be directly impacted within SIU 1. Habitat fragmentation in both terrestrial and aquatic areas can create variable-sized parcels or “islands” of viable habitats that become isolated. Secondary and cumulative impacts could also result by inducing more development within the corridor. The initial location and construction of the existing I-70 have impacted forested areas and watersheds. With the reconstruction and widening of I-70 and, as more land is encroached upon by private development, the potential for additional disturbance of terrestrial and aquatic areas increases.

### h. Threatened and Endangered Species

Much of the land near and adjacent to the I-70 Study Corridor already exhibits appreciable amounts of disturbance and/or development. Therefore, most of these areas are unlikely to harbor listed species that could be impacted by secondary development. Most of the recorded habitat locations are remote from the I-70 Study Corridor and would not be secondarily impacted by reconstructing and widening existing I-70. Because of this and since no threatened and endangered species were identified in a query of the Missouri Natural Heritage Database within or in the vicinity of the SIU 1 Project Area (Wren, [MoDOT] personal communication), the potential for cumulative impacts to listed threatened and endangered species is considered to be low.

### i. The Land and Visual Quality

The I-70 Corridor travels through several physiographic regions of north-central Missouri. The SIU 1 Project Area is located in the Western Glaciated Plains, consisting of gentle to moderate slopes with rolling hills. Much of this area has been cleared for use as agricultural cropland and pastureland.

The SIU 1 Project Area includes several perennial and intermittent stream valleys. Each of these provides a unique visual environment, which is composed of water, trees and rocks or bluffs.

The majority of the built environment in the I-70 Study Corridor is concentrated within the larger towns and cities such as those on the east side of the Kansas City metropolitan area, those on the west side of the St. Louis metropolitan area and the city of Columbia. In these areas, there is a sharp contrast between the built environment and the natural environment. In most cases, the edges of these urbanized or built-up areas tend to include highway corridors with adjacent commercial and industrial uses that lack harmonious or cohesive aesthetic relationships. In contrast, the smaller towns tend to be less delineated from their surrounding natural environment and can be more aesthetically pleasing, depending upon architectural styles and maintenance practices.

The proposed reconstruction and widening of existing I-70 within SIU 1 would secondarily and cumulatively impact the visual quality of the environment as increases in growth, development and traffic volumes occur as a result of the proposed improvement. However, the visual quality of SIU 1 would be enhanced in accord with the appropriate elements of the I-70 Corridor Enhancement Plan.

## 3. Mitigation and Enhancement of I-70 Study Corridor Cumulative Impacts

The First Tier EIS documented the commitments of MoDOT and the FHWA to provide corridor-wide impact coordination, impact mitigation and considerations of corridor enhancements. The document provided agencies and communities the assurance that an enhancement master plan would be developed and corridor-based considerations would be fulfilled and appropriate special considerations would be provided for each of the Second Tier Studies.

A Corridor Enhancement Subcommittee, one of three subcommittees for the Improve I-70 Project, is a consortium of the project team and local, state and federal agency technical staff. This subcommittee developed the proposed I-70 Corridor Enhancement Plan, which is available upon request. The goals of the enhancement plan include creating an approximately 200-mile I-70 transportation corridor that:

- Complements the existing natural environment.
- Maintains sensitivity to the existing context of the corridor.
- Provides a sense of consistency along the entire route.
- Showcases Missouri natural resources through enhancements that also highlight Missouri history, cultural resources and economy.
- Establishes baseline enhancements for the entire corridor and identifies opportunities for additional enhancements by local communities and other partnering agencies.

Included in the enhancement plan are: a program for aesthetic enhancements for the existing natural features in the corridor; visual design treatments to build elements that reduce their sense of scale; an overall design theme for enhancements to complement the visual context of the corridor (context sensitive solutions); corridor landscape enhancements for both the mainline and interchanges; and riparian habitat enhancement and wildlife corridors treatment.

Appropriate baseline enhancement features would be incorporated into the major reconstruction efforts for I-70, dependent upon the availability of adequate funding. This baseline enhancement concept includes bridge enhancement, landscaping using native grasses and flowers and habitat enhancement at major stream and river crossings. Additional "beyond-baseline" enhancements would be dependent upon the participation and funding by local communities and resource agencies within SIU 1.

# E. Relationship Between Local Short-Term Uses Versus Long-Term Productivity

All transportation projects require the investment or commitment of some resources found in the existing environment. Short-term refers to the immediate consequences of the project whereas long-term relates to its indirect or secondary effects on future generations.

### 1. No-Build Alternative

The No-Build Alternative would avoid all of the short-term and localized construction impacts. It would include the continued maintenance of existing I-70. The projected traffic growth for the length of the project would further reduce the operation of the existing roadway, resulting in reduced traffic safety, mobility, joint development opportunities and the possible loss of economic growth opportunities.

### 2. Build Alternatives

The Build Alternatives for the SIU 1 would involve some short-term consequences. These consequences would include: relocation of residences and businesses; removal of some private properties from the tax rolls; and conversion of agricultural land, woodland, floodplain, wetland and habitat to transportation use. An additional short-term consequence would be the inconvenience to residents, business owners and employees during construction. Some of the long-term benefits that may be realized from the Build Alternatives include: improved motorist safety, convenience and energy use; potential for new tax base; greater potential for area economic development because of improved transportation; and enhanced industrial development and associated employment growth for the region and state. Also there is the long-term potential for partnering with other resource agencies in providing joint development and enhancement opportunities within SIU 1.

Improvements to SIU 1 are based on comprehensive transportation planning that considers the need for present and future traffic movement within the context of present and future land use development and the environment. The local short-term impacts and use of resources by the proposed improvements is consistent with the maintenance and enhancement of long-term productivity.

## F. Irreversible and Irretrievable Commitment of Resources

The money, time and transportation user hardship related to the anticipated higher rate of crashes associated with the No-Build Alternative would be irretrievable. The cost and time associated with the decreasing level of service for both auto and truck traffic would also result in an irretrievable commitment of resources.

The Build Alternatives for SIU 1 involve committing a range of natural, physical, human and fiscal resources. Land acquired for constructing or reconstructing the SIU 1 project is considered to be an irreversible commitment during the time period the land is used for transportation purposes. Right of way requirements would convert land from residential, agricultural, commercial and natural environmental uses.

Large amounts of fossil fuel, labor and transportation construction materials such as steel, cement, aggregate and asphalt material would be required. Additionally, considerable labor and natural resources are used in fabricating and preparing construction materials. Those resources are generally not retrievable, but their use would not have a substantial adverse effect on continued availability. Labor and funds are not retrievable, once spent, they are gone regardless of their magnitude.

The commitment of all these resources is to a large part predicated on the basic concept that the transportation systems contribute to health, safety and welfare of local, county and state residents as well as those traveling from other parts of the country.

# G. Unavoidable Adverse Impacts

There would be no significant, unavoidable adverse impacts for the RPA. However, some minor adverse impacts would be expected. These impacts and corresponding mitigation measures are described throughout other sections of this chapter and are listed in the Summary of this EA.