



Chapter 3 - Effects of Alternatives

What is in Chapter 3?

This chapter summarizes how the reasonable alternatives identified in Chapter 2 would affect, in either a positive or a negative way, the community’s environment. The analysis includes an evaluation of the Whitton Expressway Mainline Alternatives and Prison Access Alternatives compared with the No Build Alternative. **Exhibit 3-6** provides an evaluation matrix that summarizes the findings. Plan plates of the alternative alignments are included in **Appendix C**, and the Environmental Investigations Tech Memo in **Appendix F** contains more detailed information on each of the topics in this chapter.

How would the project alternatives affect travel in the study area?

Forecasted Traffic

The downtown section of Whitton Expressway from Missouri Boulevard to Monroe Street is currently an arterial section with traffic signals at every intersection. The downtown-signalized section is operating near capacity today and some movements experience poor levels of service during the peak periods. The signalized intersections at Jefferson, Madison and Monroe are the key chokepoints in the downtown section. This is due to their close proximity to one another and the high traffic volumes that the signals are serving.

The eastern half of the study corridor, from Jackson Street eastward through the Clark Avenue interchange to the end of the study corridor, is expected to operate with good levels of traffic service in the future.

Appendix D contains more information on traffic.

As shown in **Table 3-1**, the downtown section of Whitton

How do we measure traffic levels of service?

Planners and engineers rate traffic congestion on a scale of “A” to “F.” “A” represents free flow conditions with no congestion and “F” represents gridlock conditions. As we look into the future, a level of service from “A” to “C” is considered excellent to good, level of service “D” or “E” is poor, and level of service “F” is unacceptable.

Table 3-1: Existing and Forecasted Traffic Demand and Mainline Level of Service (LOS) – PM Peak Hour

Location	Existing 2006				Forecasted 2035		
	Two-way Daily Traffic	AM Peak Hour Volume Range	PM Peak Hour Volume Range	PM Peak Hour LOS	Two-way Daily Traffic	PM Peak Hour Volume Range	PM Peak Hour LOS
Mainline between Bolivar & Missouri Blvd.	33,780	WB/EB 1331/1961	WB/EB 2038/1584	WB/EB E / E	75,000	WB/EB 3712 / 2017	WB/EB F/F
Missouri Blvd. & Broadway	*	1470/1584	2038/1584	B/E	**	3847/2514	D/D
Broadway & Jefferson	*	1684/1536	1806/1581	C/B	**	3351/2548	F/E
Jefferson & Madison	*	1727/1467	1726/1661	C/D	**	3274/2554	F/F
Madison & Monroe	*	1742/1403	1494/1596	E/E	**	2972/2366	F/F
Monroe & Clark	30,140	1865/1200	1386/1738	B / B	70,000	2616 / 2527	D / D
Clark & Eastland	*	2052/936	990/1618	B / B	**	1527 / 2771	B / C

WB = West Bound; EB = East Bound
Numbers reflect vehicles per hour.

* 2006 daily traffic volume data not available

** No daily traffic volume data available

Note: The study team used the PM peak hour in the forecasted analysis because Whitton experiences heavier traffic flows in the PM than it does in the AM peak. PM peak hour is 4:30 p.m. and 5:30 p.m.

Source: Final Report, Problem Definition Study for the Rex Whitton Expressway, April 2006

Table 3-2: Existing and Forecasted Intersection/Interchange Level of Service (LOS) – PM Peak Hour

Location	Existing 2006		Forecasted 2035	
	PM Peak Hour LOS			
	WB/EB	Overall	WB/EB	Overall
Missouri Blvd.	C / D	C	F / D	F
Broadway St.	B / A	B	D / E	E
Jefferson St.	A / A	C	F / F	F
Madison St.	A / C	C	F / F	F
Monroe St.	C / A	C	F / F	F
Clark Ave.	A / B	A	B / C	B

* Level of Service information not available

Note: The study team used the PM peak hour in the forecasted analysis because Whitton experiences heavier traffic flows in the PM than it does in the AM peak. PM peak hour is 4:30 p.m. and 5:30 p.m.

Source: Final Report, Problem Definition Study for the Rex Whitton Expressway, April 2006

Expressway, currently operating at good to poor levels of service from Bolivar to Monroe, will worsen in the future. Traffic forecasts indicate that the total volume of cars on this portion of the study area will increase from 35,000 vehicles per day to a range of 70,000 to 75,000 per day in 2035.

How would the alternatives affect mainline traffic on Whitton Expressway?

The primary focus of Mainline Alternatives was on operations at Jefferson, Madison, and Monroe streets. Each of the three Mainline Alternatives (from Bolivar Street to Jackson Street) made minor improvements at Missouri Boulevard and Broadway. Doing anything more complex at those intersections required changes to the Tri-Level interchange, which was not a part of the study area.

As traffic volumes grow over time:

- Alternative 4 (Viaduct) would separate through traffic from local traffic by using an elevated structure through the area and would address the long-term traffic operation needs. The intersections at Jefferson, Madison and Monroe Streets would remain in their current configuration below the viaduct.
- Alternative 5 (Parkway) delayed the construction of a viaduct. The initial phase would not resolve the forecasted traffic problems expected in the future, but would delay the need for the more expensive viaduct by ten to fifteen years.
- Alternative 6 (Madison) provides sufficient additional capacity to address the forecasted traffic needs. The existing two-way street configuration at Jefferson and Monroe would last for a period of about ten years but would eventually need to be modified to resolve operational issues. At that point, the streets could be converted to function as a one-way couplet. This alternative also improves the mobility of those drivers wanting to go to and from the south side of town by replacing the intersection at Madison with an overpass.

Each of the three alternatives would improve traffic operations on Whitton Expressway. Table 3-3 displays the anticipated service levels at Jefferson, Madison and Monroe for each alternative, as well as some key findings. Each alternative is neutral toward or improves long-term capacity, safety and emergency access along the corridor. The Madison Overpass would affect the local street system the most because of the new overpass and the changing of the

Table 3-3: Effect of Mainline Alternatives on Whitton and Local Street Network

Alternative	Level of Service in 2035*	Remarks
No-Build	F / F / F	This alternative does not address the long-term need for additional capacity in the corridor. Congestion problems on Whitton would spill over onto the local street network.
Alt 4 – Viaduct	D / C / C	Separation of through trips from local trips improves the operations through the existing signalized intersections. Access to the downtown area would be maintained underneath the proposed viaduct.
Alt 5 – Parkway - Interim	F / E / F	The interim parkway improvement would improve traffic operations in the short-term, but would not solve the long-term capacity need.
Alt 5 – Parkway - Final	D / B / C	The final configuration of the parkway alternative would solve the long-term traffic needs in the corridor.
Alt 6 – Madison Overpass	B / N.A. / D**	This alternative would eventually create the need for modifications at both Jefferson and Monroe. The proposed improvement at these two intersections includes restricting the ability to cross Whitton in either the northbound or southbound direction.

* Level of service shown in the order of Jefferson/Madison/Monroe where they intersect with Whitton

** Level of service for Madison and Whitton is not available due to the free flow of traffic on the overpass.

intersection configuration at Jefferson and Monroe. Table 3-4 displays the forecasted traffic on Lafayette and its cross streets with and without an interchange at Whitton Expressway. To see the traffic diagrams illustrating the information in Table 3-4, see Exhibits D-1 and D-2 in **Appendix D**. By adding the Lafayette interchange, traffic traveling between Whitton Expressway and the MSP or Lincoln University is forecasted to reduce traffic on local cross streets and to increase traffic on Lafayette because of the improved access.

Table 3-4: Effect of Lafayette Interchange on Local Traffic in 2035*

Location	Without Lafayette Interchange PM Peak Hour	Location	With Lafayette Interchange PM Peak Hour
On Lafayette	SB/NB	On Lafayette	SB/NB
Capitol Ave. to High St.	315/145	Capitol Ave. to High St.	1811/536
High St. to McCarty St.	316/353	High St. to McCarty St.	1799/691
McCarty St. to Miller St.	829/375	McCarty St. to Miller St.	2025/868
Miller St. to Elm St.	1001/452	Miller St. to Lafayette Ramp Terminals	888/891
Elm St. to Dunklin St.	997/453	Lafayette Ramp Terminals to Dunklin St.	884/678
Dunklin St. to Franklin St.	634/605	Dunklin St. to Franklin St.	700/686
Local Cross Streets	WB/EB	Local Cross Streets	WB/EB
Capitol Ave.		Capitol Ave.	
E. of Lafayette	747/206	E. of Lafayette	2054/659
W. of Lafayette	881/177	W. of Lafayette	849/324
High St.		High St.	
E. of Lafayette	742/869	E. of Lafayette	70/456
W. of Lafayette	739/455	W. of Lafayette	185/400
McCarty St.		McCarty St.	
E. of Lafayette	814/669	E. of Lafayette	515/657
W. of Lafayette	164/706	W. of Lafayette	184/373
Miller St.		Miller St.	
E. of Lafayette	67/200	E. of Lafayette	53/61
W. of Lafayette	49/285	W. of Lafayette	10/117
Elm St.**			
E. of Lafayette	2/5		
W. of Lafayette	8/10		
Dunklin St.		Dunklin St.	
E. of Lafayette	172/285	E. of Lafayette	244/176
W. of Lafayette	816/215	W. of Lafayette	363/105

* These numbers do not take into account any of the Clark Avenue improvements, including the Realignment.

** Elm Street remains open in the future without the Lafayette Interchange. With the Lafayette Interchange Elm Street would be closed.

Note: The study team used the PM peak hour in the forecasted analysis because Whitton experiences heavier traffic flows in the PM than it does in the AM peak. PM peak hour is 4:30 p.m. and 5:30 p.m.

Source: Final Report, Problem Definition Study for the Rex Whitton Expressway, April 2006

How would the Prison Access Alternatives affect traffic in the neighborhoods?

Some of the residential and commercial properties in the Whitton Expressway study area have been, or have the potential to be developed/redeveloped as the need for new businesses and housing arises in accordance with the future land use plan. The downtown section and State Capitol complex have the greatest potential for social and economic impacts, given the proximity of neighborhoods and businesses in those areas to the Whitton Expressway and the Prison Access Alternatives. The redevelopment of the MSP will play a major role in future development. The Redevelopment Authority's Framework Plan anticipates that the project will include the MSP Historic Area, Public Service Campus, Public Assembly Campus, Office Campus and Natural Resources Area. Access from Whitton Expressway is a key to the success of the prison redevelopment and led the study team to consider alternatives for new access to the site. Each alternative affects traffic in the surrounding neighborhoods, particularly the Central East Side neighborhood.

In terms of traffic operations, each of the alternatives address long-term capacity needs and provides better direct access to the site than the No-Build alternative. Alternative A (Lafayette) would require widening Lafayette Street to five lanes—two lanes of travel each direction with a central turn lane.

Making Lafayette five lanes would have the greatest effect on the Central East Side neighborhood's local street system. It would also cause problems for residents who park on the street or would lose driveway access because of widening Lafayette.

A benefit of Alternatives D and G (Lafayette and Clark) is that neither Lafayette nor Clark would require widening to five lanes. By utilizing both streets for prison access, each street would provide one lane of travel in each direction with a center turn lane. It would also minimize the loss of on-street parking and driveway access.

With the alternatives that include the Lafayette interchange the use of signals and stop-sign controlled intersections will need to be considered during the design phase of the project. It is anticipated that the cross streets like Miller would be controlled with a two-way stop. Traffic would move freely along Lafayette from the interchange north into the MSP site. As traffic grows along with increased development there will likely be a need to re-examine the need for any additional stop signs or signals along Lafayette. However, these streets are under the City of Jefferson's jurisdiction and any traffic flow issues would have to be looked at by the city staff.

Does the project affect any farmland?

The study team found no agricultural uses within the study area designated as having prime farmland soils.

Land Use

The study corridor is located in the heart of Jefferson City, Missouri. It is characteristically an urban environment with very little vacant or undeveloped land. As displayed in Exhibit 3-1,

the majority of the existing land uses within the study corridor fall within one of six general categories, including:

- Single-family homes, not including vacant properties—a large portion of single-family homes are located just west of Lincoln University in the Old Munichburg neighborhood at the south edge of the study corridor. There are also several pockets of single-family homes beginning near Lafayette Street and continuing to the east.
- Multi-family homes including apartments, townhouses, condos, etc., are located throughout the city and the study area.
- Commercial uses run along or near the Whitton Expressway corridor, especially in the downtown, Old Munichburg and along Lafayette Street.
- Light-industrial uses including the Central Dairy and Coca-Cola bottling plant are located near Jefferson and Madison streets.
- Institutional uses within the study corridor include schools, churches, the Miller Performing Arts Center and governmental facilities, as well as three cemeteries.
- Parks and recreation areas include East Miller Park, which is located directly adjacent to Whitton Expressway at Chestnut and East Miller; Park Place located at Pine Street and Olive Street just south of Park Avenue; Myrtle, Smith & Livingston Park located at Dunklin and Lafayette streets, and Keith Major Field located north of Miller Street between Adams and Jackson streets.

Jefferson City adopted a Comprehensive Plan Update in March 1996. Contained in the update are a community analysis, goals and objectives and the development plan. The development plan looks at the proposed future land uses and major streets within the Jefferson City planning area. The City included three sub-area plans in the Comprehensive Plan Update including the High/Chestnut Street Area, East McCarty Street Area and the downtown Area. Of the three, the High/Chestnut Street area is relevant to the project. In anticipation of the prison redevelopment, the sub-area plan proposes the eventual transition to higher land uses, for instance from residential to commercial. In other cases, the plan reflects the prevailing land use pattern of medium density residential.

In addition to the Comprehensive Plan Update, the project considered two other relevant planning efforts. The Central East Side Neighborhood Plan was prepared in August of 2005 and included recommendations and guidelines for land use and transportation improvements for the area east and southeast of the downtown area, to “foster economic development, promote historic preservation, and enhance the quality of life consistent with the comprehensive plan of the City of Jefferson.” The neighborhood plan recommended addressing the traffic capacity and operational concerns of Whitton Expressway in a separate study as these impact traffic operations throughout the neighborhood.

As identified in the MSP Redevelopment Project: Framework Plan, the prison redevelopment project will consist of uses such as offices, restaurants, retail shops, museums, interpretive centers, a performing arts center, and a natural resource area. The comprehensive study of the MSP project was prepared in October of 2003. The plan calls for the prison site to redevelop as a major office park and visitor destination over the next decade, and will most likely bring new residents for the neighborhood and customers for local businesses. The redevelopment plan provided the impetus for the study team to consider Prison Access Alternatives as part of this project.

The Central East Side plan identified new infrastructure, including new interchanges at Lafayette Street and/or Chestnut Street with Whitton Expressway, and intersection modifications. These potential improvements were expected to not only satisfy the demands of neighborhood traffic, but also to manage the traffic volumes associated with the proposed prison redevelopment project located adjacent to the northeast side of the Central East Side Neighborhood.

Evaluation of land use involved determining the project's effect on existing land use patterns and consistency with local development plans. The No-Build Alternative would not affect existing land use patterns. Development projects that are proposed, planned or underway would likely continue in their present form, and changes to existing land uses would occur according to the City's comprehensive plan as deemed necessary and appropriate by local authorities.

Each of the mainline build alternatives would have the same general impacts to existing land use patterns. Since all of these alternatives involve widening of the existing roadway, rather than a new alignment, the majority of improvements would occur within existing right-of-way. Regarding the areas within the study corridor and the areas adjacent to the corridor, there would be no anticipated major land use changes from those identified on the future land use plan, due to the project.

The Prison Access Alternatives are not expected to affect major land use changes that would vary greatly from the City's future plans. The main purpose of these alternatives is to provide better access to the planned development. These alternatives include mainly residential areas and the study team does not expect the project to affect major changes outside of what is anticipated in the prison redevelopment master plan or the Central East Side plan. Although the Prison Access Alternatives could facilitate the conversion of land use from residential to commercial, the Central East Side Neighborhood Plan allows for "corner retail" (or mixed use residential/commercial) which includes ground level retail stores with residential units above.

Access from Whitton Expressway is a key to the success of the MSP redevelopment. Without improvements, travelers to the MSP site would overwhelm the local street network. The MSP Redevelopment Plan identified Lafayette and Chestnut streets as the main access points into the development from the local street network. The plan also discussed creating an additional interchange with Whitton Expressway and one of the area's local streets. The Central East

Side Neighborhood Plan indicated that the redevelopment pressures of the MSP site and the Central East Side Neighborhood, and associated traffic projections, would necessitate roadway and traffic improvements including the north/south corridors of Lafayette Street, Chestnut Street and Clark Avenue; and several east/west corridors, one of which is the Whitton Expressway.

As discussed in **Chapter 1**, if the project is not built, the additional 40,000 vehicles per day would cause the expressway to worsen as a traffic chokepoint. Likewise, increased traffic and limited access points could hinder future development and redevelopment opportunities in the MSP site, as well as in the downtown and Capitol areas. Therefore, the proposed expressway improvements are consistent with the City’s planned development.

Who lives in the Whitton Expressway project area?

Population

The study area has a population of approximately 10,000 while the study corridor includes over 2,100 persons. While we are unable to calculate the population change at the block group or block level, we know that between 1990 and 2000 the state of Missouri, Cole County and Jefferson City all experienced growth anywhere from nine to 11 percent. See **Table 3-5**.

Table 3-5: Population

Population	Missouri	Cole County	City of Jefferson	Study Area	Study Corridor
Total Population	5,595,211	71,397	39,636	10,052	2,193
Change from 1990	478,138	7,818	4,155	NA*	NA*
% Change from 1990	9.3%	11.0%	10.5%	NA*	NA*

Source: U.S. Census Bureau, Census 2000

* Census block groups and blocks have changed since the 1990 census making the comparison inaccurate.

Minority populations

The percentage of non-white individuals is much higher in the study area and study corridor than in the city, county or state. Approximately 28 percent of the study area residents and 37 percent of the study corridor residents are non-white. The range of minority population for the west alternatives is 28 to 34 percent, with the Parkway alternative having the lowest percentage of minorities and the Madison Overpass being at the high end of the range. The east alternatives have minority populations ranging from 32 to 38 percent. All of the alternatives that include improvements at Lafayette are at the higher end of the range while the Clark alternatives without Lafayette improvements are at the lower end of the range. See **Exhibit 3-6**.

There are 14 blocks within the study corridor where more than 50 percent of the population is minority (**Exhibit 3-2B**). One block is located at Jackson Street and McCarty Street. Five of these blocks are located along Lafayette Street. One block is located at Riviera Street and Capitol Avenue. Six of the blocks are located along Elm Street between Lafayette Street and Clark Avenue. The final block is located on Dunklin between Madison and Monroe Streets.

How is census data collected?

The census is the procedure for acquiring information about every member of a given population usually through a door-to-door questionnaire. The census is taken every 10 years with the last census completed in 2000.

Every questionnaire includes basic information such as number of individuals in the household, their age and race. Some households are asked to fill out longer questionnaires that include information about income, vehicle and home ownership and education. This sample of longer questionnaires is then used to estimate what is happening with the population as a whole.

The census data is broken in to geographic areas, including the nation, state, county, city, census tracts, block groups and blocks. Not all data is available at all levels so the information is presented at the lowest level possible.

The quality of the census data is dependent on the individuals filling out the information. It is particularly difficult in areas like Jefferson City with high numbers of renters to get an accurate picture of the population since renters tend to move more frequently than home owners.

Table 3-6: Study Area Minority Populations

Racial Characteristics	Missouri	Cole County	City of Jefferson	Study Area	Study Corridor
Total 2000	5,595,211	71,397	39,636	10,052	2,139
White	4,748,083 (84.9%)	62,158 (87.1%)	32,303 (81.5%)	7,276 (72.4%)	1,376 (64.3%)
Black or African American	629,391 (11.2%)	7,084 (9.9%)	5,828 (14.7%)	2,316 (23.0%)	639 (29.9%)
American Indian & Alaskan native	25,076 (0.4%)	239 (0.3%)	150 (0.4%)	46 (0.5%)	11 (0.5%)
Asian	61,595 (1.1%)	625 (0.9%)	488 (1.2%)	73 (0.7%)	24 (1.1%)
Native Hawaiian or other Pacific Islander	3,178 (0.1%)	26 (0.0%)	20 (0.0%)	2 (0.0%)	0 (0.0%)
Other race	45,827 (0.8%)	384 (0.5%)	246 (0.6%)	85 (0.8%)	20 (1.0%)
Two or more races	82,061 (1.5%)	881 (1.2%)	601 (1.5%)	254 (2.5%)	69 (3.2%)
Hispanic or Latino (of any race)	118,592 (2.1%)	915 (1.6%)	616 (1.6%)	198 (2.0%)	68 (3.2%)
% minority (non-white)	16.2%	13.6%	19.3%	28.4%	37.2%

Source: U.S. Census Bureau, Census 2000

How is the community defined for analysis?

The analysis is done at the following levels where available: Missouri, Cole County, Jefferson City, the Study Area, the Study Corridor and the Impact Area.

The Study Area includes the block groups that fall within the study corridor. See **Exhibit 3-2A**.

The Study Corridor includes the census blocks that are adjacent to Whitton, as well as Lafayette Street and Clark Avenue. See **Exhibit 3-2B**.

The Impact Area reflects only those census blocks that are directly impacted by each alternative.

Low-income populations

Of the state, county and city levels, the state has the lowest median household income at \$38,934. As seen in **Table 3-7**, the Study Area has a range of median household income from \$12,800 - \$58,897. Cole County had the highest median household income at \$42,924 and the lowest number of persons below poverty level at eight percent. The study area has the highest percentage of persons below the poverty level at over 18 percent.

Table 3-7: Income and Poverty

Income and Poverty	Missouri	Cole County	City of Jefferson	Study Area
Total population	5,595,211	71,397	39,521	10,169
Median household income	\$38,934	\$42,924	\$39,628	\$12,800-\$58,897
Per capita income	\$19,936	\$20,739	\$21,268	\$7,196-\$23,667
Number of persons below poverty level	637,891	5,709	4,000	1,893
% of persons below poverty level	11.7%	8.0%	10.1%	18.6%

Source: Missouri Census Data Center, Census 2000

Would the project have environmental justice impacts?

Environmental Justice refers to the concept that minority and low-income populations should not suffer disproportionately high and adverse effects from the State's transportation program. On February 11, 1994, President Clinton issued Executive Order on Environmental

Justice 12898. This Executive Order requires all federal agencies to address the impact of their programs with respect to environmental justice. The Executive Order states that neither minority nor low-income populations may receive disproportionately high or adverse impacts resulting from a proposed project. It also requires that those representatives of any low-income or minority population that could be affected by the project be given the opportunity to be included in the impact assessment, provide input before decisions are made and receive the benefits of the project.

The study team evaluated the project for local effects. Local effects include impacts to low-income and/or minorities living adjacent or near the project area. The Year 2000 Census block data was utilized to better understand the general socio-economic situation of the area's residents and identify minority populations. As discussed above, block group and block data for minorities was available for the Whitton Expressway Corridor and the neighborhoods impacted by the Prison Access Alternatives (Exhibit 3-2A and 3-2B). Due to data limitations, the lowest level of low-income information available was for block groups. Based on the data, approximately 19 percent of the study area population lived below the poverty level. While the overall study area has a 37 percent minority population, the areas of actual impacts (right of way acquisition and/or construction) have a slightly higher minority population concentration. At the Lafayette interchange area, the minority population is at 75 – 100 percent and 50 – 75 percent in the census blocks to be directly impacted. The Clark extension includes two census blocks with minority populations of 75 – 100 percent.

When the census data is reviewed, it is shown that of the total population living on the census blocks impacted by the western alternatives, 22 to 31 percent are minority individuals. With the average minority percentage for those blocks, ranging from 7 to 14 percent. Out of the total population, the percentage of minorities that live on blocks impacted by the eastern alternatives is between 37 and 38 percent. The average percentage of minorities living on those blocks is between 38 and 42 percent. No Limited English Proficiency populations were identified within the study area.

Neither the No-build, nor the Mainline Alternatives would result in impacts to residential properties and, therefore, had no direct impacts to minority or low-income populations. For the Prison Access Alternatives the study team found the following:

- Populations along Lafayette Street and Clark Avenue have more diverse population characteristics than other parts of the study area with 37 to 38 percent minority populations. As part of the Central East Side Neighborhood, both Lafayette Street and the Clark Realignment have similar housing and small business characteristics;
- As of March 2, 2009 there are no Section 8 housing units that would be impacted by any of the alternatives.
- Alternatives involving the Lafayette Street full interchange would affect four-single

What is Environmental Justice?

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

To comply with Executive Order 12898, entitled Federal Actions to Address Environmental Justice in Minority Populations, the USDOT developed policies and procedures for all projects that want to remain eligible for federal funding to follow.

MoDOT adheres to these orders on all federal-aid projects. This EIS reviews the project alternatives in light of E.O. 12898, DOT Order 5680.1 "Final Order to Address Environmental Justice in Minority Populations and Low-income Populations" and DOT Order 6640.23. "FHWA Actions to Address Environmental Justice in Minority Populations and Low-income Populations"

family homes and one multi-family property, as well as requiring the purchase of Quinn Chapel AME Church property;

- The Clark Avenue alternatives would impact a multi-family property with four, attached units located within the triangular block at Capitol Avenue and Riviera Street, the only property on that block—a block containing over 76 percent minority population. Two out of four units would be impacted;
- The block groups containing residential impacts have between 37 and 41 percent low-income population, although specific impacts are difficult to determine because of the level of detail in the census data.
- Access to Lincoln University, Jefferson City High School, the businesses along Lafayette and the MSP site will be direct with the Lafayette alternatives.
- The only location where access will not be maintained is at Elm and Lafayette Streets, as Elm will no longer have access to Lafayette Street. However, the ability to travel north and south of Whitton Expressway is provided by various city streets which may be accessed from Elm.
- The improvements associated with this project will not create any additional barriers to movement north and south across the expressway. The current bicycle and pedestrian access will be maintained, including the recent addition to the Greenway Trail that goes under Whitton Expressway at Lafayette Street. Although the trail is considered public parkland and protected from permanent roadway impacts (without proper evaluation and mitigation), permanent impacts will be avoided by bridging the trail and by temporarily re-routing it during construction.
- There would be some impacts to commercial properties as a result of the various Lafayette Street and Clark Avenue alternatives. These commercial properties include small businesses such as a sign shop, drug store, barbershops and a pizza place. Of these properties, Express Sign and Banner at Lafayette and McCarty Streets and Johnson's Barbershop at Lafayette and Elm Streets are known to be minority owned. Whether these businesses would relocate in the study corridor is unknown, although commercial space is known to be available in the area. This could affect the availability of certain services within the neighborhoods.

As part of the public and stakeholder meetings that have taken place, the neighborhoods have been involved in discussions to help identify opportunities for further communication with any special population. The study team provided numerous opportunities for project input through a public involvement process, the details of which are provided in Chapter 4. The concerns heard from residents included property impacts, traffic on residential streets, and impacts to the City's historic districts, sites and landmarks. Quinn Chapel members expressed concerns about acquisition and relocation since a large segment of their congregation lives within a couple of miles of the church.

The impacts that will occur with the various project alternatives are based on roadway layout and additional right-of-way required for each of those alternatives. During the course of the Whitton Expressway EIS process, there was a concerted effort to minimize residential and commercial displacements and to minimize other impacts to adjacent neighborhoods as discussed above. The project will have impacts of a similar nature regardless of the alternative chosen. The minority and low-income populations are similar for each of the alternatives.

The impacts that will occur with the various project alternatives are based on roadway layout and additional right-of-way required for each of those alternatives. During the course of the Whitton Expressway EIS process, there was a concerted effort to minimize residential and commercial displacements and to minimize other impacts to adjacent neighborhoods as discussed above. The project will have impacts of a similar nature regardless of the alternative chosen. The minority and low-income populations are similar for each of the alternatives.

The actual impacts (right of way acquisition and construction) of the project have the potential to impact a population that includes 38 percent minority individuals and take an historic district associated with the historical African American Foot neighborhood. The original construction of Rex Whitton divided the Foot Neighborhood to the north and south of the alignment. These factors have led FHWA to determine that the project has a disproportionately high and adverse effect on minority and low-income populations. FHWA also has acknowledged that due to the nature of this project and its location, other than selecting the No-Build Alternative, there was no possibility of avoiding disproportionately high and adverse effects on minority and low-income populations.

MoDOT and FHWA have looked at opportunities to minimize impacts to the minority populations by evaluating alternate interchange designs at the Lafayette Street location. In the future as the project moves into the design phase, MoDOT and FHWA will look at ways to continue to reduce right of way acquisition.

MoDOT and FHWA will take the following steps, once the project has received funding, to mitigate impacts to minority populations through:

- 1) Expanded assistance in the relocation of any businesses within the project boundaries.
MoDOT will assist displaced businesses in the search for a comparable business location.
- 2) MoDOT will work beyond the Uniform Act in assisting relocated residential tenants to become homeowners, as desired, by providing educational sources of information for preparing to become a homeowner.
- 3) MoDOT will work with the community to determine aesthetically pleasing treatments to retaining walls, bridge wings and bridge facings.
- 4) MoDOT will be conducting additional research and providing context on the historical African American community in relation to the Lincoln University President's Home

property and the Craftsman/Monastery Historic District per the Memorandum of Agreement signed by MoDOT, FHWA and the Missouri State Historic Preservation Office. The final product will be a report that will be made available to SHPO, Lincoln University and the Missouri River Regional Library. Additional copies shall be provided to the appropriate local historical societies and retained by MoDOT. MoDOT will prepare a pamphlet and presentation based on the Architectural and Archaeological surveys and the report prepared above. These materials can be used by Lincoln University, the Cole County Historical Society, other local organizations and residents in order to preserve and share the history of the area.

- 5) MoDOT will incorporate an OJT (On the Job Training) program into the construction contract for this project, with a concentration on prompting OJT for African Americans within the project area.
- 6) MoDOT will take all steps reasonable and necessary to ensure that Quinn Chapel is relocated within this community, as is its desire.

How would the project affect surrounding neighborhoods?

The project has the potential to affect Jefferson City neighborhoods in several ways. The potential effects on neighborhoods include changes in the physical character of its structures; interruptions in bicycle, pedestrian, and trail access; and potential changes to how the land is used. The neighborhoods and the potential project effects on neighborhoods are discussed below.

Community Cohesion

Whitton Expressway is an existing roadway through the heart of Jefferson City. The original construction of Whitton Expressway created a barrier that separated the neighborhoods, including Old Munichburg and the Central East Side.

Old Munichburg comprises approximately 14 blocks south of Whitton Expressway; west of Monroe Street; north of Franklin Street and east of US 54 West. German immigrants settled the neighborhood in the Nineteenth Century. The neighborhood has a mix of commercial, residential and public uses. The original construction of Whitton Expressway eliminated the northern portion of the community.

The Central East Side neighborhood is bounded by the MSP site on the north; an area slightly east of Clark Avenue on the east; Whitton Expressway on the south and Adams Street on the west. The neighborhood has a mix of commercial, residential and public uses. A neighborhood planning study provided guidance for the neighborhood's redevelopment. The neighborhood includes what was once the "Foot", a traditionally African-American neighborhood centered near Lincoln University.

Each of the alternatives has the potential to impact the three neighborhoods in different ways:

- The No-Build alternative would not affect existing neighborhoods in the study corridor.
- The Mainline Alternatives on the western end of the corridor (Alternatives 4, 5 and 6) would not directly affect existing buildings in the Old Munichburg neighborhood. The potential viaduct proposed for Alternatives 4 and 5 could create additional barriers between this neighborhood and the downtown. The Madison alternative would potentially change how drivers access or travel through the neighborhood. These alternatives are not expected to create barriers or change the character of the neighborhood.
- The Lafayette alternative (Alternative A) would impact Quinn Chapel and four properties in the northwest corner of the Lafayette interchange. The Lincoln University President's home property would also be impacted by the Lafayette interchange. This alternative also includes widening of Lafayette from Whitton Expressway to the prison and would impact several properties of a historic nature within the Central East Side neighborhood. The widening of Lafayette while providing the desired prison access would create a new barrier within the neighborhood as well as changing the physical character of the neighborhood.
- The combined Lafayette and Clark alternatives (Alternative D and G) would impact the same properties as alternative A at the Lafayette Street interchange but would not have the same impacts to the Lafayette Street because the alternative avoids widening the street north of the proposed interchange. This alternative would avoid creating an additional barrier within the Central East Side neighborhood and impacting some of the historic properties that give the neighborhood its identity while still providing access to the prison. The Clark alternatives would also provide the opportunity for the planned redevelopment of some of the properties identified in the Central East Side Neighborhood plan.

Housing Characteristics

The housing characteristics of the study area are compared with the city, county and state characteristics in **Table 3-8**. The study area has the lowest percentage of occupied housing units at approximately 87 percent. This leaves about 13 percent of the homes in the study area vacant. Rental units/homes dominate the 87 percent of occupied units. Of all of the occupied homes in the study area, only 38 percent are owned by the individuals that live there. This is compared with the State of Missouri where 70 percent of the homes are occupied by the owner. High renter numbers do make getting an accurate picture of the community population more difficult due to the more transient nature of renters as a whole. The study area is likely to experience high rates of occupancy turnover in the individuals who live in these neighborhoods where the renter populations are high. As of March 2, 2009 there are

Table 3-8: Housing Characteristics

Housing Characteristics	Missouri	Cole County	City of Jefferson	Study Area
Total units	2,442,017	28,915	17,004	4,526
Total vacant units	247,423	1,874	1,197	593
Total occupied units	2,194,594	27,030	15,855	3,941
% occupied	89.9%	93.5%	93.2%	87.1%
Owner occupied	1,542,310	18,341	9,294	1,517
Renter occupied	652,284	8,699	6,521	2,424
Percent owner occupied	70.3%	67.8%	58.6%	38.5%
Avg household size	2.48	2.43	2.20	2.15
Avg family size	3.02	3.00	2.90	2.94
Median home value	\$89,900	\$97,200	\$98,700	\$46,900- \$133,000*
Median gross rent	\$484	\$441	\$434	\$256-\$513**

Source: Missouri Census Data Center, Census 2000

* Range of Median Home Values

** Range of Gross Rent

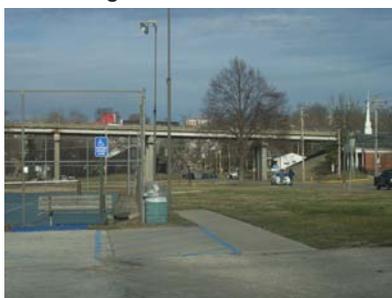
no Section 8 housing units that would be impacted by any of the alternatives. If any units were to become occupied by Section 8 assistance recipients and were ultimately impacted by the project those individuals would not lose their assistance but would be able to apply that to another unit in Jefferson City and would be subject to MoDOT's relocation policies.

Bicycle, Pedestrian and Trails

In the western segment of the study area, the original construction of the Whitton Expressway created, to some extent, a barrier between the neighborhood of Old Munichburg, located south of the expressway, and downtown, located north of the expressway. However, sidewalks and crosswalks accommodate bicycle/pedestrian access across the expressway at the intersections, with grade-separations of through traffic and local traffic occurring at Bolivar Street and Jackson Street. The Mainline Alternatives do not make access worse. Alternative 4 (Viaduct) and Alternative 6 (Madison Overpass) would improve access across Whitton Expressway. The viaduct alternative would separate through from local traffic, lessening the traffic volumes pedestrians and bicyclists would encounter. The Madison Overpass would also provide bicyclists and pedestrians with a grade-separated crossing of the expressway. It is anticipated that during construction of the project, work at the street crossing areas would be phased in order to allow for temporary detours or re-routing of vehicular and bicycle/pedestrian traffic to other nearby crossings.

In the eastern segment of the study area (east of Jackson Street), the street crossings of the expressway (Lafayette Street, Chestnut Avenue, Clark Avenue and Vetter Lane) are grade-separated and include sidewalks, thereby providing easier and safer bicycle/pedestrian access across the expressway. All of the project access alternatives would result in temporary impacts to the sidewalks, but would retain grade-separations and sidewalks at these crossings upon

East Branch Trail at Myrtle, Smith and Livingston Park



project completion. During construction of the project at these locations, temporary lane closures, phasing, and temporary detours or re-routing of vehicular and bicycle/pedestrian traffic would most likely be necessary.

In 2007, Jefferson City developed an Area Greenway Master Plan. The East Branch Trail parallels Wears Creek and connects Elm and McCarty streets. The existing trail runs underneath Whitton Expressway near Lafayette Street and runs north to McCarty Street. In addition to general bicycle and pedestrian use, Lincoln University uses the trail as an educational/fitness resource. One purpose of the trail is to help eliminate the perceived barriers between the neighborhoods and parks on opposite sides of Whitton Expressway. The trail is a Section 4(f) resource.

Any prison access alternative that includes a full or partial interchange at Lafayette would necessitate temporary detours of the trail during construction. The project would not alter the trail long-term. None of the other alternatives would disrupt use of the trail. Due to its status as a Section 4(f) resource, the study team will have to assess temporary and permanent construction impacts to determine if impacts to the trail can be avoided. If avoidance is not feasible or prudent, impacts will need to be minimized and mitigated. The evaluation is included in the project's Section 4(f) document. See **Chapter 6**.

The 2007 Greenway Master Plan also shows future trail locations. In the western segment of the study area, a future extension of the East Branch Trail would parallel Whitton Expressway, in the right-of-way, from Adams Street to Missouri Boulevard on the north side of the expressway. The Mainline Alternatives would not directly impact the future trail because the trail alignment is dependent upon the expressway alignment. However, coordination with the Parks and Recreation Department will be necessary in order to determine how the expressway and intersections can be designed to accommodate a future trail and its connections to sidewalks.

Another portion of the future trail has two options. It would either parallel Bolivar Street in the right-of-way or travel along Wears Creek under the Missouri Blvd./Whitton Expressway intersection. The Bolivar Street option would not be impacted by the Mainline Alternatives since the future trail would travel over the expressway on the Bolivar Street bridge. The Wears Creek option would travel under the expressway, most likely through the existing box culvert. If the City chooses to implement this option, and if the future trail is in place at the time of construction, temporary impacts to the trail could occur on the south side of the expressway. However, this is dependent upon the City choosing the Wears Creek option, and if so, coordination with the Parks and Recreation Department will be necessary.

In the eastern segment of the study area, the Greenway Master Plan indicates Clark Avenue as having either a parallel trail along the street in the right-of-way or an on-street bike route. The plan also shows East McCarty Street at Clark Avenue as having either a parallel trail along the

What is a Section 4(f) resource?

Section 4(f) refers to legislation established under the U. S. Department of Transportation Act of 1966 (49 USC 303, 23 USC 138). The legislation provides protection for publicly owned parks, recreation areas, or wildlife and/or waterfowl refuges of national, state or local significance or land of an historic site of national, state, or local significance from conversion to transportation usage. Section 4(f) resources are properties protected by the act.

street in the right-of-way or a sidewalk that is shared by pedestrians and bicyclists. All of the Prison Access Alternatives would require coordination with the Parks and Recreation Department to determine the type of trail that is needed at those locations and how the expressway and intersections can be designed to accommodate a trail and its connections to sidewalks.

Plans for suitable pedestrian and bicycle access upon streets crossing the Whitton Expressway will be considered during the design of interchanges and bridges where warranted by land use. Any accommodations for bicycle/pedestrian access that are a part of this project will comply with the requirements of the American Disabilities Act of 1990.

Would the project affect parks and community facilities?

The project's effect on parks and community facilities is discussed below. **Exhibit 3-3** displays the various parks and facilities.

Parks

There are three Section 4(f) eligible parks located within the study area.

East Miller Park is a 2.5-acre park located between Whitton Expressway and East Miller Street and east of Chestnut Street. Amenities include a fitness area, basketball court, playground, horseshoe pits and a parking lot.

Park Place Park consists of two parcels located south of Park Avenue, east of Pine Street, west of Olive Street and separated by Center Street. There is a half-basketball court on the western end of the east portion. There is a playground on the west portion of the park. The recreation areas include a running track and practice sports field located just west of Simonson 9th Grade Center on the northwest corner of Jackson and Miller Streets.

The Myrtle, Smith and Livingston Park is located at Lafayette and Elm Streets. The park includes three Lincoln University tennis courts. The park is Section 4(f) eligible and the tennis courts were built using Land and Water Conservation Funds, making them a 6(f) resource.

Neither the No-build nor Mainline Alternatives would affect the above-mentioned parks and recreation areas. Prison Access Alternatives D and G would acquire less than 0.1 acre of Park Place. Park Place, being a publicly-owned park, is a Section 4(f) resource. It is therefore protected from permanent roadway impacts unless it is determined that there is no feasible and prudent alternative to those impacts, and that all planning to minimize harm has been undertaken. The study team has prepared an evaluation of the project's acquisition, which is included in the Section 4(f) Evaluation provided in **Chapter 6**.

Churches and Cemeteries

There are three cemeteries and five churches located within the study corridor. All three cemeteries are adjacent to the other and each is one block long and one block wide. They are located between Chestnut and Locust St. and McCarthy and Miller St. Fairview and Woodland

What is a Section 6(f) resource?

Section 6(f) resources are outdoor recreation properties that were acquired or developed with Land and Water Conservation Fund Act grants. Section 6(f) of this Act prohibits the conversion of property acquired or developed with these grants to a non recreational purpose without the approval of Department of Interior's (DOI) National Park Service.

Cemeteries are local cemeteries. The third cemetery is the Jefferson City National Cemetery. The National Cemetery is a National Register of Historic Places (NRHP) listed site.

Neither the No-Build, nor any of the Build Alternatives affect the three cemeteries. The project's Prison Access Alternatives would affect two churches. The interchange associated with Alternatives A and G would require the acquisition of the Quinn Chapel and its surrounding property. Alternatives D and G would acquire a small amount of property from the Immaculate Conception Church grounds adjacent to the relocated Clark Avenue.

Schools

Two Jefferson City School District properties lie within the Whitton Expressway study corridor. The Miller Performing Arts Center is located at 501 Madison Street, immediately north of the expressway. The center originally served as the Jefferson City Junior College. Since its opening in 1926, the center was home to the junior college, Jefferson City's high school, junior high and instructional resource center. The building now houses a theater and the Railton Art Gallery. The Simonsen 9th Grade Center is located at 501 East Miller. The school property includes a parking lot south of East Miller Street, overlooking the expressway.

Neither the No-build nor Mainline Alternatives would affect the Simonson 9th Grade Center. The Madison Overpass Alternative would affect the Performing Arts Center. The overpass requires placing a retaining wall at the front entrance and drive for the center. This would eliminate access to the performing art center's front drive and parking from Madison.

How much new right of way would the project require?

The right of way acquisition impacts include land acquired for highway construction and operation purposes. Right of way impacts include both total acquisition (i.e. the entire tract, parcel or lot is acquired) and partial acquisition (only a portion of the tract parcel or lot is acquired for right of way). With a partial acquisition, a habitable residence or viable commercial business would remain and the primary structure is not acquired. There is the potential for permanent and temporary construction easements.

The impact summary matrix, Exhibit 3-7, shows total and partial impacts for each of the build alternatives. The right of way impacts are also illustrated on the Plates in **Appendix C**.

The project's effect on residential and commercial properties are summarized in **Table 3-9**. These acquisitions are based on conceptual engineering completed as part of the environmental decision-making process. The number of partial or full acquisitions may decrease or increase as design details are developed. The No-Build Alternative would not require additional right of way, and therefore there would be no residential acquisitions. More detail on the specific properties impacted can be found in the Environmental Investigations Tech Memo in **Appendix F**.

According to the City's parcel database, the single-family residences that the project would acquire for right of way range in value from \$18,000 to \$82,000. An internet real estate search (performed May 15, 2008) of available residential properties in the Jefferson City area indicated that, at the time, there were 84 residential properties on the market from \$25,000 to \$75,000; 135 from \$75,000 to \$125,000 and 293 from \$125,000 and up.

There is a wide variety of commercial property available in the Jefferson City area. The displaced commercial properties vary in size. The structures have been there for many years and are in variable condition from poor to average. There is significant development of new commercial space at the MSP site. Additionally there is vacant land and property in the study area. One listing showed ten properties ranging in size from 1,000 square feet to 13,000 square feet. In order to find adequate commercial space within a specific area of the study corridor, displaced businesses may need to purchase multiple properties.

There are adequate replacement sites available within the study area for displaced residential and commercial land owners.

Table 3-9: Partial and Full Property Acquisitions for Project Right of Way

Alternative	Description of Acquisition
Mainline	
Alternative 4 (Viaduct)	<ul style="list-style-type: none"> Residential – No acquisitions, Commercial – 1 full business, 1 vacant commercial lot, Parking – 7 partial acquisitions of parking areas.
Alternative 5 (Parkway)	<ul style="list-style-type: none"> Multi-family – 1 full property acquisition, Commercial – 1 vacant lot, Parking – 7 partial acquisitions of parking areas.
Alternative 6 (Madison Overpass)	<ul style="list-style-type: none"> Single-family residences – 2 full acquisitions, Commercial – 3 partial acquisitions, Parking – 7 partial acquisitions of parking areas.
Prison Access	
Alternative A (Lafayette)	<ul style="list-style-type: none"> Single-family residences – 10 partial, 9 full, Multi-family – 3 partial, 2 full property acquisitions, Commercial – 2 partial, 9 full acquisitions, Institutional – 1 partial, 1 full acquisition.
Alternative D (Lafayette Half and Clark)	<ul style="list-style-type: none"> Single-family residences – 8 partial, 21 full acquisitions, Multi-family – 3 partial, 1 full property acquisitions, Commercial – 4 full acquisitions, Institutional – 2 partial acquisitions.
Alternative G (Lafayette Full and Clark)	<ul style="list-style-type: none"> Single-family residences – 12 partial, 22 full, Multi-family – 4 partial, 1 full property acquisitions, Commercial – 1 partial and 4 full acquisitions, Institutional – 2 partial, 1 full acquisition.

What are MoDOT's relocation policies?

The Missouri Department of Transportation offers a relocation assistance program to individuals, families, business owners, farm operators, and non-profit organizations that are partially or totally displaced by a state highway project. This program conforms to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601). Relocation assistance under this program will be made available to all relocated persons without discrimination.

The Uniform Act, as well as Missouri state laws, 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 the owner for the property to be acquired. An Appraisal is defined in the Uniform 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, supported by the presentation and analysis of relevant market information.

It is the policy of FHWA and MoDOT that no person be requested to move from their dwelling until at least one comparable replacement dwelling has been made available to that person. A comparable, replacement dwelling is safe, decent, sanitary and functionally similar to the present dwelling and within the financial means of the displaced person. The replacement housing must also be open to persons regardless of race, color, religion or national origin.

A representative of MoDOT will assist each displaced person in securing comparable replacement housing and be sensitive to the special needs of any special group of residents. The relocation coordination office would maintain liaison activities with other agencies rendering services useful to persons who must relocate. The occupants of residences are entitled to receive reasonable and necessary moving costs and related expenses in relocating their personal property.

Displacement and relocation of residences and businesses are often necessary parts of undertaking a transportation improvement when sufficient right-of-way has not been provided to accommodate future needs. In an effort to make the property acquisition process as equitable as possible, the FHWA has established standards to ensure adequate consideration and compensation.

The program is designed to make actual payments available to offset some of the expenses experienced by those who are displaced. The program also provides advisory assistance to owners and tenants who are displaced.

The Missouri Department of Transportation's relocation program is designed to provide uniform and equitable treatment for those persons who are displaced from their residences, businesses, or farms. The relocation advisory assistance program satisfies the requirements of Title VI of the Civil Rights Act of 1964. The program provides advisory assistance to:

- 1) Owners and tenants who are displaced;
- 2) Persons occupying real property adjacent to that being acquired who are caused substantial economic injury by the acquisition;
- 3) Persons who, as a result of the project, move personal property from real property not being acquired for the project; and
- 4) Persons who move into property after acquisition and are aware that they would have to move due to the project.

Relocation assistance payments are designed to compensate displaced persons for costs that have been imposed on them by a MoDOT project. 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 is eligible to receive up to \$22,500 for a replacement housing payment. This 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 tenant who has occupied a displacement dwelling is entitled to a payment not to exceed \$5,250 for either a rental or down payment assistance.

The Uniform 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 statutory payment limits (\$22,500 or \$5,250), the MoDOT's relocation policy commits to utilizing housing of last resort. Housing of last resort involves the use of payments of statutory maximums or the use of other unusual methods of providing comparable housing.

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 nonprofit organization may be eligible to receive a payment, not to exceed \$10,000, for expenses incurred in reestablishing their business, farm operation, or nonprofit 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 for 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.

Relocation resources are available to all residents and business relocated without discrimination. A general information notice in the form of a brochure entitled "Relocation and Assistance and Payments Program" will be provided to persons who may be displaced. This relocation brochure provides general information about the MoDOT's relocation program.

A copy of the MoDOT Relocation Assistance Program brochure is available at the MoDOT District Offices.

Visual Quality

Key visual effects from the project include:
 A wider Whitton Expressway.
 A new interchange at Lafayette Street
 and new roundabouts at the Clark Street
 interchange.

What would the economic impacts of the project be to the study area?

The number of persons employed in an area provides a direct measure of economic activity. Because Jefferson City is the state capitol and many state and federal agencies have offices in this location the highest ranking employment category for Cole County and Jefferson City is

public administration. Educational, health and social services are the second highest percentage of employed persons for Cole County and Jefferson City.

There are commercial impacts for each of the alternatives of this project which are discussed in the previous section on right of way. Many of the Mainline alternative impacts are to parking areas or will require changes in access. All of the Prison Access alternatives require the full acquisition of some commercial properties. Each of the occupied commercial properties contains one or two neighborhood/small businesses. None of the impacted properties are major employers within the study area. Prison Access Alternative A impacts the largest number of commercial displacements, while Alternative C has the fewest.

What would the study area look like after the project is completed?

The study area is already a highly developed urban area. Since most of the area is already developed, Wears Creek and its tributaries, as well as the State Capitol Building provide visual relief from the built environment. In Jefferson City, there would be some change in views for roadway users and for persons looking at the expressway or the new access corridors to the prison.

The Mainline Alternatives would have varying affects for users of the road and viewers of the road. Each mainline alternative would affect Wears Creek to varying degrees, but the general impact would be low. Wears Creek and its tributaries are mainly mowed or concrete lined in the study area. Each of the Mainline Alternatives includes some type of elevated structure—whether a mainline viaduct or an overpass near or on Madison, Jefferson, and Monroe streets. The Viaduct and Parkway alternatives would each create a new structure on the mainline, and the new overpass associated with the Madison Overpass creates a high degree of change between Jefferson and Monroe streets. Each of these creates an additional intrusion of the built environment, but the area is void of sensitive receptors. The visual change from the rest of the expressway would be minimal since there is already an existing roadway in place.

The greatest change to the visual environment resulting from the Prison Access Alternatives occurs at or near Lafayette Street and along a realigned Clark Avenue. Although there would be new roundabouts at the Clark Avenue interchange with all of the alternatives, the views would be similar to what the community currently experiences. At Lafayette Street, a new full interchange with alternatives A and G would greatly change the visual landscape at Lafayette and the expressway. This is especially the case for the open space in the southwest corner of the new interchange. With the half-diamond interchange of AlternativeD, the new off-ramp would create a new three-way intersection at the front door of Quinn Chapel. Alternatives D and G, with the realignment of Clark would change the views of that portion of the Central East Side neighborhood with the construction of a new arterial.

What is Noise in this context?

Noise is a form of vibration that causes pressure variations in elastic media such as air and water. The ear is sensitive to this pressure variation and perceives it as sound. These pressure differences are most commonly measured in decibels (dB). In the natural environment people begin to notice a change with a three-dB increase.

At the time of final design, MoDOT, the City and the County can work together to incorporate aesthetics and urban design elements into the final design of the corridor. This would require the local community to obtain funding sources to pay for and maintain such enhancements, in an integrated fashion, to ensure the roadway and bridge improvements would visually complement the character of the study corridor.

Would the project create noise issues?

The FHWA Traffic Noise Model, or TNM 2.5, was used to model future design year 2035 noise levels and determine the effect of the project on noise receptors in the study area. The model considered inputs such as volume, speed, and truck percentages. The analysis considered the noise effects on eighty-one receiver locations which included residences, schools, churches, parks and commercial buildings. Complete details of the locations and the results of the noise analysis are included on **Exhibit 3-4** and in **Appendix F**. In accordance with MoDOT's federally approved Noise Policy (and Code of Federal Regulations, Title 23, Part 772), the study team will consider noise mitigation measures when the predicted traffic noise levels are equal to or greater than 66 dBA Leq(h) for Activity Category "B" land uses such as residences, churches, schools, libraries, hospitals, nursing homes, apartment buildings, condominiums, etc or 71 dBA Leq(h) for Activity Category "C" land uses. See Table 3-10. The study team will also consider noise mitigation at locations that experience an increase of 15 decibels. FHWA noise standards categorize an increase of 15 or more decibels as a substantial noise increase.

The analysis showed that noise levels would exceed the Noise Abatement Criteria at 21 of the 81 receptor locations. The 21 receptors included 9 residences, 19 apartments, the Capital City Boys and Girls Club, and one each of a school, church, park and commercial building. Future Leq(h) noise levels at these receptors would range from 66 to 73 decibels. The increase in noise levels at these locations would range from one to 13 decibels. The project would not expose any of the receptors to a substantial noise increase. The study area does not contain any Activity Category "A" noise receptors.

Various methods of noise mitigation were reviewed. Many of these methods would contradict the purpose and need for the project. These methods included restricting trucks and reducing speed limits. Likewise, the desire to minimize right of way takings prohibits the

**Table 3-10: NOISE ABATEMENT CRITERIA
HOURLY A-WEIGHTED SOUND LEVEL-DECIBELS (dBA)**

Activity Category	L _{eq} (h) (1 Hr)	Description of Activity Category / Land Uses
A	57 dBA (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the lands are to continue to serve their intended purpose
B	67 dBA (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals
C	72 dBA (Exterior)	Developed lands, properties or activities not included in Categories A or B above
D	---	Undeveloped lands
E	52 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums

Source: Code of Federal Regulations, Title 23 Part 772, Revised April 2005
MoDOT Traffic Noise Policy, September 1997

How do you measure noise?

An "A" weighting scale is used to measure noise in environmental work because it closely resembles human hearing. So the unit of measurement for an "A" weighted noise level is dBA.

A second metric for measurement is based on Equivalent Sound Level (Leq). This metric is widely applied to community noises created by motor vehicles, trains and airplanes. The Leq correlates reasonable well with the effects of noise on people. The time duration for highway noise is one hour with the metric defined as Leq(h).

acquisition of buffer zones or the construction of earthen berms. The construction of noise walls was the only method considered for mitigation. The analysis showed that one noise barrier, located south of Whitton Expressway and east and west of Chestnut Street, would meet MoDOT's definition for feasible and reasonable noise mitigation. The noise barrier would be a wall, 1686 feet in length, ranging in height from 9 to 18 feet, and costing \$404,445. It would provide a 5 to 7 decibel noise reduction for 18 apartment units and the Capital City Boys and Girls Club, and would cost \$21,287 per residence/unit, thereby meeting MoDOT's noise policy criteria for mitigation. As the project continues through design stages, the study team will work with the community to determine if residents would desire a noise wall.

How would the project affect cultural and historic resources?

In planning and developing projects that could affect historic resources, the study team must comply with Section 106 of the National Historic Preservation Act and Section 4(f) of the U.S. Department of Transportation Act. Section 106 requires federal agencies to identify and assess the effects of federally assisted undertakings on historic resources, archaeological sites and traditional cultural properties. Section 106 also requires that the study team consult with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation. The Old Munichberg Association, Eastside Neighborhood Development Association and the City of Jefferson Historic Preservation Commission are also consulting parties. This coordination will continue to take place throughout the Whitton Expressway study process. Section 4(f) protections extend to National Register of Historic Places (NRHP)-eligible and listed properties. Section 4(f) emphasizes avoidance of the use of such sites and minimization of effects. **Chapter 6** of this Draft EIS describes Section 4(f) in greater detail, including a discussion of avoidance alternatives for this project.

The study team's cultural resource staff performed investigations according to MoDOT's specifications. The cultural resource investigations consisted of an archival search, an architectural survey, and an archaeological evaluation. Neither the No-Build, nor the Mainline Alternatives would affect historic or archaeological sites. The Prison Access Alternatives involving an interchange at Lafayette Street would have an effect on the NRHP eligible Craftsman/Monastery District and several individually eligible properties.

The cultural resource investigators began the process with an archival search of the study area, which was defined as 500 feet on either side of existing Whitton Expressway, and 50 feet on either side of Lafayette Street and the Clark Avenue realignment corridor for Prison Access Alternatives. They consulted several sources for the archival search. The records at the Missouri Department of Natural Resources (MDNR), State Historic Preservation Office (SHPO) were searched to locate previously recorded National Register properties and architecture previously determined to be eligible within the Whitton Expressway study area. The Historic Preservation Commission of the City of Jefferson was also consulted in order to identify any

What is a historic property?

"Historic properties" can include a site, building, structure, object or district that is significant either through its connection to local or national history, architecture, archaeology, engineering and/or culture. Historic properties can have local or national significance, but are significant under one of the NRHP criteria for eligibility.

previously recorded local historic districts and landmarks. MoDOT's Environmental and Historic Preservation Section provided a list of bridges and culverts within the study area.

At the time of the historic architecture archival search (March 2008), the study area contained eight individual properties listed on the NRHP and three historic districts listed on the NRHP. These include the Missouri State Capitol Historic District, the Broadway-Dunklin Historic District, and the Capitol Avenue Historic District. There are seven local historic landmarks within the study corridor that are not listed on the NRHP. The review of the MoDOT Transportation Management System database indicated that none of the bridges or culverts within the study area are listed on or recommended eligible for the NRHP. The records and literature search did not reveal any previously recorded archaeological sites.

What is an adverse effect?

An adverse effect is found when a project may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register.

The study team's historic architecture survey was completed to identify and document all architectural resources (i.e., buildings, structures, objects, bridges, and districts/landscapes) within the study area. The primary study area for the architectural survey (Area of Potential Effects – APE) represented an area approximately 200 feet on either side of the centerline of the existing Whitton Expressway with an additional 10-foot buffer on each side. The area for Lafayette Street was limited to properties that faced Lafayette, starting at Elm Street at the south to Capitol Avenue at the north, while the Clark Avenue realignment corridor was limited to an approximately 130-foot wide corridor that passed through properties between Elm Street at the south, to just north of Capitol Avenue. The interchange at Madison Street and Whitton Expressway extended slightly, starting with Dunklin Street to the south and Miller Street to the north. Survey methodology may be found in the Architectural Survey of the Proposed Improvements to the Rex Whitton Expressway which is available from MoDOT's Historic Preservation Section upon request. The locations of the individual NRHP properties and districts within the Whitton Expressway APE are found on the alternative plates in **Chapter 5** and **Appendix C**.

As summarized in **Table 3-11**, only the Prison Access Alternatives would adversely affect cultural resources that are on or eligible for listing in the National Register. Details and photographs of each of these cultural resources are included in **Appendix G**, as well as a correspondence letter from the SHPO indicating the results of their review of cultural resources, including determinations of eligibility and adverse effect.

Neither the No-Build nor the Mainline Alternatives would have an effect on cultural resources. The three Prison Access Alternatives would affect one eligible district and several individually listed or eligible sites. The Craftsman/Monastery District includes four homes on Lafayette Street, immediately north of Whitton Expressway. Among the individually listed or eligible sites, the Lincoln University President's House property on Jackson Street, immediately south of the expressway would be partially affected by the project.

The Craftsman/Monastery District contains four buildings that were constructed at the same time in an identical Craftsman style. This district contains buildings that possess both social

historical and architectural significance, being eligible under Criterion A (associated with events that have made a significant contribution to history), Criterion B (associated with the lives of persons significant in our past), and Criterion C (embody distinctive characteristics). These buildings are located in the Central East Side neighborhood. This area was once part of “The Foot” neighborhood, a traditionally African-American neighborhood centered near Lincoln University. The period of significance for this district would be from circa 1915 to the early 1960s, after the construction of Whitton Expressway. Prison Access Alternatives A, D and G affect all four of the homes that make up this district by the northwest ramp of the proposed Lafayette interchange. Construction of a half- or full-diamond interchange at Lafayette Street requires the total acquisition of all four properties.

Table 3-11: Effects of Build Alternatives on Historic Properties in the Study Area

Historic Property	NRHP Eligible? (Criterion)*	Effect of Alternatives
Individually Eligible Properties:		
601 Jackson - Lincoln University President's Home	Yes (B & C)	• Partial acquisition of property (Alternative A, C, D & G)
630 E. High St. – East End Drugs	NRHP Listed (A)	• Full acquisition of property (Alternative A)
700 E. High St. – vacant	Yes (A & C)	• Full acquisition of property (Alternative A)
700 E. Capitol Ave. – MSP Warden's House	NRHP Listed (A & C)	• Partial acquisition of property (Alternative A)
624 E. Capitol Ave. – Lester S. Parker & Missouri “Zue” Gordon House	NRHP Listed (B & C)	• Partial acquisition of property (Alternative A)
1130/1144 E. McCarty – residence	Yes (C)	• Partial acquisition of property (Alternatives C, D & G)
1206 E. McCarty – Immaculate Conception Church	Yes (C)	• Partial acquisition of property (Alternatives C, D & G)
Duke & Estella Diggs home site	May be eligible (B & D)	• Full acquisition of property (Alternatives A, D & G)
Craftsman/Monastery District	Yes (A , B & C)	Full acquisition of all 4 properties (Alternatives A, D, & G)

*NRHP Eligible Criteria:

- A – Properties that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B – Properties that are associated with the lives of persons significant in our past; or
- C – Properties that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D – Properties that have yielded, or may be likely to yield, information important in history or prehistory (Federal Register 1974).

The Lincoln University President’s House property, eligible under Criterion B (associated with the lives of persons significant in our past), and Criterion C (embodies distinctive characteristics), was constructed in the Williamsburg Style in 1913. There are three outbuildings and a limestone wall associated with this residence. One of these outbuildings, that was built at the same time as the residence, covers an old well that was used during the Civil War. With alternatives A, D and G, construction of a half- or full-diamond interchange at Lafayette Street could potentially impact the well house and wall due to construction. In the event that the well house and wall are impacted, the well house and remaining stone wall adjacent to it will be reconstructed.

The realignment of Clark Avenue, with alternatives D and G, would affect one property. A duplex, located at 1130/1144 E. McCarty, sits on a parcel that would require a partial acquisition of the property. There are three buildings on the property, but the duplex is the only building that is historic, being eligible under Criterion C (embodies distinctive characteristics). However, the duplex is not directly affected by the project. The project will require acquiring

a garage located at the rear of the property. The garage is actually associated with a single-family residence on the same parcel, but neither of these two buildings are eligible for the NRHP. The project's effect on other listed or eligible properties are shown in **Table 3-11**.

The study team investigators conducted an archaeological survey for the project in early April 2008. They examined the entire construction easement revealing that most of the Identified Preferred Alternative was within areas previously disturbed during the original construction of US 50. The investigation identified one prehistoric site and one historical site.

The study team surveyed one prehistoric site within the study corridor. Shovel tests recovered some artifacts. However, construction of past buildings and roadways, in particular Whitton Expressway, has destroyed the site. A few locations represented yard areas behind private homes that could not be surveyed due to lack of landowner permissions. Further archaeological investigations will be done on those properties when permission is granted or when the property is purchased through the right of way acquisition process in the design phase.

The archaeological survey also identified one historical site, which contains the remains of the Duke and Estella Diggs home. The study team recommends that this site may be eligible for listing on the National Register under Criterion B (associated with the lives of persons significant in our past) and Criterion D (may be likely to yield information important in history). This site would be impacted by Prison Access Alternatives A, D and G. The MoDOT cultural resources staff recommend avoiding this site or conducting further testing to better assess the potential for having intact significant remains. If as the project plans develop, the impact to the Duke Diggs site cannot be avoided, a Phase II investigation of the site will be conducted to determine if the site does contain evidence that should be considered significant and eligible for listing on the NRHP. The Phase II investigation may include additional archival research, remote testing, hand excavated test units, or mechanically excavated trenches (or some combination of these). Following the Phase II investigation, documentation containing the results and MoDOT's assessment of the site eligibility will be provided to the SHPO. If it is determined that the Duke Diggs site is significant and eligible for listing on the NRHP, appropriate mitigation measures will be discussed with the SHPO.

Detailed descriptions of individual NRHP properties and districts within the Whitton Expressway APE are provided in the Cultural Resource Archival Review and Architectural Survey of the Proposed Improvements to the Rex Whitton Expressway that are available upon request from the MoDOT Historic Preservation Section.

How would the project affect ecosystems in Jefferson City?

How could the project affect Wears Creek and overall Water Quality?

Not only do the streams in the study area serve as overflow and storage areas during storms or floods, they also provide habitat (breeding, nesting, feeding, and cover) for wildlife including

fish, amphibians, reptiles, mammals, and birds. Wears Creek is the primary stream within the study area, which also includes two unnamed tributaries of Wears Creek and four unnamed tributaries of Boggs Creek. All of the tributaries and a portion of Wears Creek are located west of Jackson Avenue and are displayed in Exhibit 3-5. From east of Jackson, the Wears Creek tributary is the only stream in the study area, located adjacent to Lafayette Street.

None of the Prison Access Alternatives would change Wears Creek, because the Lafayette Street interchange would bridge over the creek. The greatest changes to Wears Creek and other streams would result from the Mainline Alternatives. Alternative 5 (Parkway) would have the greatest effect on streams. The construction of the parkway would require placing Wears Creek tributaries in a box culvert between Broadway and Monroe and necessitate the extension of the Wears Creek culvert east of Missouri Boulevard. Alternative 4 (Viaduct) would also require the culvert extension east of Missouri Boulevard and east of Washington, one of the tributaries would require relocation or culverting. Alternative 6 (Madison) would require relocating 100 linear feet of stream for one of the Wears Creek tributaries and a 54 foot extension of the culvert west of Monroe Street.

To protect the environment from sedimentation and construction pollutants during the building phase, the control of water pollution will be accomplished by the use of the City's and MoDOT's Best Management Practices (BMPs). The BMPs can include measures such as the use of temporary berms, ditch checks, slope drains, sediment basins, straw bales, silt fences, seeding and mulching.

Potential roadway operation and maintenance related impacts to water quality could include pollutants such as petroleum products, coolants, rubber debris, metals, and de-icing minerals or chemicals. Collisions may also occur, which can contribute to pollutants, as chemicals spilled could run off or be flushed into streams and drainage channels. Vegetated slopes and swales, and detention systems in appropriate locations can provide treatment of potentially polluted run-off from the roadway, thereby avoiding or minimizing impacts to the water quality of streams and groundwater. Since this project involves widening of an existing roadway, there will be a minimal amount of impervious roadway surface added, relative to other urban land uses in the study area, and therefore is not expected to have a substantial impact on water quality.

The floodplains in the study area have beneficial values in that they provide temporary water storage during storms or floods, help to remove sediments, and provide erosion control. They can also provide wildlife habitat and wildlife movement corridors, varying from one location to another, depending on vegetation, stream hydrology, and distance from the stream. Since the project is in an urban area, the wooded areas of most of the floodplains tend to be few and narrow, and confined to mainly Wears Creek. However, some portions of the floodplain, such as the area west of Lafayette Street, also provide recreation opportunities as parks or greenway trails.

Stream Quality

Alternative 6 would result in a total of 202 linear feet of stream impacts, equating to less than 0.10 of an acre of impacts.

The impacts are to an intermittent stream. Intermittent streams only flow during wet periods and within a continuous well-defined channel.

What is the FEMA 100-year floodplain?

FEMA and FHWA guideline 23 CFR 650 has identified the base (100-year) flood as the flood having a one percent probability of being equaled or exceeded in any given year. The base floodplain is the area of 100-year flood hazard within a county or community. The regulatory floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the base flood elevation more than a predetermined volume. FEMA has mandated that projects can cause no rise in the regulatory floodway, and a one-foot cumulative rise for all projects in the base (100-year) floodplain.

What is a FEMA buyout property and does the project affect any of these properties?

Buyouts are one of many forms of flood hazard mitigation, and the most permanent. It removes people from harm's way forever. The community buys private property, acquires title to it and clears it. By law, that property, which is now public property, must forever remain open space land.

There is one FEMA buyout property within the study corridor, located in the eastern portion of the corridor north of Whitton and west of the Eastland Drive interchange. The project has no effect on the buyout property.

As this project is located in an urban area with development located within the floodplain, it is especially important that the flood elevations do not increase, as that may have an adverse effect on existing property. The streams within the study corridor that have a designated Federal Emergency Management Agency (FEMA) mapped floodplain include Wears Creek, North Branch Wears Creek, and East Branch Wears Creek as named in the Flood Insurance Rate Maps. Exhibit 3-5 shows the FEMA 100-year floodplain, as well as the regulatory floodway. The Mainline Alternatives would impact between 3.4 and 6.8 acres within the designated FEMA floodplain. The Prison Access Alternatives would impact between 0.1 and 0.6 acres within the designated FEMA floodplain. Alternative 5 (Parkway) and Alternatives A and G have the most floodplain impacts.

The proposed alternatives involve bridge and culvert elevations that are set well above 100-year flood elevations, based on studies prepared by FEMA. The modifications would be designed so as not to redirect or increase the flow. All improvements would be designed to not increase flood elevations, and to maintain the existing conditions. Consequently, risks of flooding to users of the roadway, and the potential for property loss and hazard to life due to this project is minimal. The footprint of the roadway fill placed in the floodplain is minimal when compared to the total floodplain area. The proposed bridge and culvert structures will be sized to accommodate the calculated 100-year flows and to maintain floodway crossings free of obstruction. Thus, impacts on natural and beneficial floodplain values are not significant.

The Federal Water Pollution Control Act, section 303(d), requires that each state identify those waters that are not meeting the state's water quality standards. There are no Outstanding National or State Resource Waters within the study corridor and none of the streams have been given a "classification" and "use designation" by the Missouri Department of Natural Resources (MDNR). During construction, the study team will need to comply with the National Pollutant Discharge Elimination System permit, Section 404 permit and specific conditions of Section 401 Water Quality Certification.

How would the project affect geology and soils?

The topography of the project area can be generally characterized with the northwestern area as the nearly level plain of Wears Creek near its connection to the Missouri River progressing to the steeper hills and bluffs adjacent to valley. The lowest and most level area of the study area is the Wears Creek/Missouri River plain near the intersection of Whitton Expressway and Missouri Boulevard. Bedrock of the Jefferson City Formation make up the outcrops and underlying rock of the study area. Eastward along US 50/63 the highest point is approximately at the crossing of Whitton Expressway and Chestnut Street. Cave forming is known to occur in the Jefferson City Formation, but no caves are known to exist in the study area. Springs have been noted in the area.

The project would not change geology and soil characteristics in the study area. There would be some topological changes along the realigned Clark Avenue due to cut and fill to construct the realigned avenue. There would be few changes along the mainline of Whitton Expressway itself, though there would be some new cut and fill at the new Lafayette Street Interchange and in the vicinity of the Jackson overpass.

Instances of mining and any seismic hazards were also checked as part of the review of geology and soils. There were no instances of any past or present mining in the study area. The study area is located and classified according to the American Association of State Highway and Transportation Officials as Seismic performance Category A which requires no special seismic design considerations.

Would the project change Jefferson City's air quality?

The Federal Clean Air Act Amendments of 1970, 1977, and 1990 required the adoption of air quality standards, quality control regions, and state implementation plans. The federal government established these requirements to protect public health, safety and welfare from known or anticipated effects of sulfur dioxide, particulates, carbon monoxide, nitrogen dioxide, ozone, and lead. In addition to these pollutants, the State of Missouri established additional criteria for hydrogen sulfide and sulfuric acid. The Environmental Protection Agency (EPA) also lists several motor vehicle pollutants (Mobile Source Air Toxics – MSATs) that are classified as cancer-causing agents. Benzene is a known cancer-causing agent, while acetaldehyde, formaldehyde, 1,3-butadiene, and diesel particulate matter are probable cancer-causing agents.

The U.S. Environmental Protection Agency (USEPA) maintains a list identifying those air quality control regions, or portions thereof, which meet or exceed the air quality standards or those areas that cannot be classified because of insufficient data. Those portions of air quality control regions that are shown to exceed the air quality standards for any of the pollutants are designated “non-attainment” areas. The project is located in a non-classified area as defined by the USEPA through the Clean Air Act. Therefore, the conformity requirements of 40 CFR part 93 do not apply to this project.

The project improvements themselves will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. In a letter dated March 13, 2008 MDNR wrote a letter stating, “The construction-related activities associated with this project should not significantly affect local or regional air quality.” This project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has no link with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs.

Would the project affect wetlands or wildlife?

No wetlands or threatened and endangered species habitat occur within the study area, due to the urban nature of the environment. The majority of the study corridor is comprised

of urban built-up land. The only area where you might expect to find natural communities would be along Wears Creek or that of its tributary. However, in the study corridor much of Wears Creek has been channelized in order to conform with the urban landscape. There are no identified natural communities occurring in the study corridor. The research and fieldwork included a review of these aspects of the environment and in each case, it was found that the study area did not include these features.

Correspondence with the US Fish and Wildlife Service (USFWS) took place twice during the study regarding the possibility of federally listed threatened or endangered species occurring in or near the study corridor. The USFWS and study team review of the Natural Heritage Database indicated that no federally listed threatened or endangered species or critical habitats occurred within the project area. Review of the Natural Heritage Database indicated there were no rare species or rare natural communities known to occur in or near the study corridor.

What is a wetland?

Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Typical wildlife in the Jefferson City urban area is composed primarily of animals that have adapted to urban conditions and the relatively small natural habitats that remain in the urban area. Some of the animals include birds such as cardinals, sparrows, and robins; water fowl such as Canada geese and mallard ducks; and small mammals such as rabbits, squirrels, and chipmunks. The damper environments in the study area can provide habitat for amphibians and reptiles such as frogs, salamanders, and turtles. Wears Creek, being a perennial stream, can provide habitat for some common fish species such as channel catfish, sunfish, and minnows. The wildlife that occurs in the study area is already adapted to the conditions of the existing expressway and ongoing development, and the direct impact on wildlife is not anticipated to be greater than that caused by current land use development. Most wildlife will relocate to similar nearby habitats, and the natural habitats along Wears Creek and the Wears Creek tributary will continue to provide wildlife migration corridors under the expressway bridges.

Correspondence also took place with the US Army Corps of Engineers (USACE) regarding wetlands. Wetlands generally include swamps, bogs, and similar areas. Within the study corridor, there are no areas shown on the National Wetland Inventory maps and classified as vegetated wetlands. Through field investigations, it was discovered that one area adjacent to an unnamed tributary of Wears Creek, south of Whitton Expressway between Jefferson and Madison Streets, appeared to have the potential for meeting wetland criteria. However, preliminary fieldwork indicated that the area did not meet all three of the wetland criteria parameters in order to be a jurisdictional wetland. The USACE will make a final determination. The areas adjacent to the streams in the remainder of the study corridor were also checked for ponding or saturation.

Would the project affect hazardous materials or waste sites?

The study team conducted a Phase 1 hazardous waste assessment. This involved searching government databases and other information sources, and conducting a field reconnaissance

to learn whether the project might affect sites containing hazardous materials or wastes. In all, the study team identified 121 sites within the study corridor as having the potential for hazardous or solid waste contamination. State and federal agency lists document all of the sites. However, the project alternatives would not disturb or alter any of these sites and therefore would have no effects. More information on hazardous waste can be found in the Haz Mat Screening Report and Environmental Investigations Tech Memo in **Appendix F**.

What other considerations for the project are there?

What types of permits are needed?

Permits are categorized in two groups: regulatory permits and construction best management practices (BMPs). Regulatory permits assist government agencies in the administration and implementation of federal, state or local statutes or initiatives. Regulatory permits can include those for Sections 404 (USACE) and 401 (MDNR) of the Clean Water Act, National Pollutant Discharge Elimination System permit and a floodplain development permit. **Table 3-12** provides a listing of the regulatory permits that may be required for this project and agencies responsible for those permits. Construction BMPs serve as regulators of construction activities to protect the adjacent environs. For more specific information about these permits, see the Environmental Investigations Tech Memo in **Appendix F**.

Table 3-12: Regulatory Permits

Permit / Authorization	Authorizing Agency
Section 404, Individual or Nationwide	USACE
Section 401 Water Quality Certification	MDNR
National Pollution Discharge Elimination System (NPDES)	MDNR
Floodplain Development Permits	SEMA
Section 106	MO SHPO
Section 4(f)	FHWA

What are the Construction Impacts of the project?

The City’s and MoDOT’s standard specifications for street construction include, but are not limited to, air, noise, and water pollution control measures, and traffic control and safety measures to minimize construction impacts. MoDOT and the construction contractor would need to enact pollution control measures, both temporary and permanent, during construction of the project. All construction methods and operations must comply with MDNR regulations, particularly concerning batch plant operations, clearing and grubbing functions and asbestos inspections. It is also expected that some temporary lane closures and/or detours may be necessary during construction. Other issues and the regulations and construction methods guiding the study team during construction include the following:

- Waste Disposal – The MDNR Solid Waste Management Program provides specifications and procedures for the disposal of wastes resulting from construction activities.
- Water Quality – In addition to the guidelines specified in the water quality discussion the

Missouri Department of Conservation (MDC) Best Management Practices include conformance to the State Channel Modification Guidelines when altering channels or relocating streams. In addition, restoration work would include cleanup, shaping, replacement of topsoil, and establishment of vegetative cover on all disturbed bare areas, as appropriate.

- Air Quality - Contractors are required to comply with Missouri's statutory regulations regarding air pollution control, designed to minimize air quality impacts by reducing air pollutants during construction.
- Noise – In an effort to minimize the effects of noise during construction, contractors may be required to equip and maintain muffling equipment for trucks and other machinery in order to minimize noise emissions. Operations with high temporary noise levels such as pile driving may need to have abatement restrictions placed upon it such as work-hour controls and maintenance of muffler systems.
- Vibration – Due to the proximity of the alignment to residential areas, if drilling and blasting are necessary for construction, a carefully planned and executed drilling and blasting program would be prepared during the design development phase, which would place limits or controls on drilling and blasting activities.
- Utility Relocation – Utilities located within the study corridor include overhead power transmission lines, underground power lines, gas lines, storm sewer, sanitary sewer, underground telephone/fiber optic lines, and water lines. Although the project may require utility relocations, the effects of the project are expected to be minor and proper coordination with utility companies will take place.

What are the indirect and cumulative effects of the project?

When a project has direct impacts, they occur at the same time and place. The project also causes secondary or indirect impacts, but these usually occur later in time, removed in distance from the project, and are reasonably foreseeable. Cumulative effects are effects on the environment that result from the incremental impact of the project when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. In evaluating secondary and cumulative impacts of the proposed project, project activities by others within or near the study area merits consideration. Planning and construction of the MSP site within the study area has provided impetus for the proposed project, due to the need to provide access and connectivity for this new development.

The Whitton Expressway study corridor is home to many of the commercial and government centers within Jefferson City. The Whitton Expressway project would have a positive impact on the future development of these commercial and government centers. Development plans for the MSP site are expected to provide for future growth and enhancements to this part of Jefferson City. This growth may have the effect of changing the nature and character of the

development in the area and indirectly impact the community. Much of this is anticipated by the MSP Plan and the Central East Side Neighborhood Development Plan. Efficient and safe highway travel and access to these centers would be critical for current and future developments. Much of the indirect impacts normally associated with a major highway project have already occurred within the Whitton Expressway corridor. The neighborhoods will remain in their current configuration and will not face additional barriers due to this project. Some neighborhood small businesses and individual residences will be acquired due to the project. This could affect the availability of some services within the neighborhoods themselves.

As discussed in Chapter 1, there are several other plans and studies that are going on within the area. The purpose and need for this project addresses the infrastructure and capacity needs discussed in the Countywide Thoroughfare Study and the Central East Side Neighborhood Plan. Bicycle and pedestrian access is also important to the development of the neighborhoods and businesses and would help eliminate barriers. The existing access will be maintained as they currently exist through the Greenway Trails and sidewalks, with opportunities for future enhancements.

What are the project's effect on energy and commitment of resources?

The study team accounts for energy considerations when evaluating the various alternatives including the energy consumed during normal operation and maintenance. The project's direct effects include the energy consumed by vehicles using the facility. Indirect effects include construction energy and such items as the effects of any changes in automobile usage due to the construction of the facility. Over time, the No-Build Alternative would cause energy increases due to basic rehabilitation and increased travel times along the corridor due to congestion. Each build alternative would cause traffic delays during construction. Reductions in lane widths and shifts in traffic would reduce traffic speeds and cause delays during peak travel times. Delays to traffic on cross roads would occur due to reconstruction of interchanges. These various delays for traffic traveling through a construction zone would result in a temporary increased use of energy, in this case gasoline and diesel fuel. However, long term, the improvements made on Whitton Expressway would result in reduced idling. This would reduce the use of gasoline and diesel fuel required for travel on the highway.

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 levels of service for both auto and truck traffic would result in irretrievable commitment of resources. The impacts of each of the build alternatives are similar in magnitude. Land acquired for constructing or reconstructing Whitton Expressway is considered an irreversible commitment during the time the land is used for transportation purposes. Large amounts of fossil fuels, labor and transportation construction materials such as steel, cement, aggregate and asphalt material will be required to construct the build alternatives. The study team expects the benefits such as improved access to businesses and community services, increased safety, reduced travel times and increased economic development to outweigh the commitment of resources in the long term.