U.S. Department of Transportation
Federal Highway Administration

Missouri Department Of Transportation

Environmental Assessment

Interstate 70
St. Louis City, Missouri

Jefferson National Expansion Memorial Park Over the Highway

July 2012

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Project Background:

The purchase of the Louisiana Territory from France in 1803 opened a gateway to settlement in the United States west of the Mississippi River. To symbolize this milestone, a National Memorial was created in the City of St. Louis in 1935, known as Jefferson National Expansion Memorial (JNEM), which includes the Gateway Arch and the nearby Old Courthouse. The Gateway Arch is now a world-class tourist destination, visited by more than 2.5 million visitors annually. Flanked by the Mississippi River on the east and Interstate 70 on the west, the Eads Bridge to the north, and the Poplar Street Bridge on the south, pedestrian access to the park is limited and connectivity of the park to the rest of downtown St. Louis is less than desirable.

In 2009, the National Park Service (NPS) finished preparing a general management plan for the JNEM. This plan called for an international design competition that would spark a wide variety of ideas for improved connectivity between the park and downtown St. Louis as well as improved experiences for people visiting the park. The competition produced multiple proposals for improving the downtown area and the JNEM grounds; a winner was selected in September of 2010.

The resulting CityArchRiver 2015 (CAR2015) initiative proposed multiple alterations to the JNEM. Based on these proposed changes to the park grounds, the Federal Highway Administration (FHWA) and the Missouri Department of Transportation (MoDOT) have determined changes are needed to the downtown roadways, access to the park, and ramp configuration on I-70. The alterations in the CAR2015 proposal that affect Interstate 70 include:

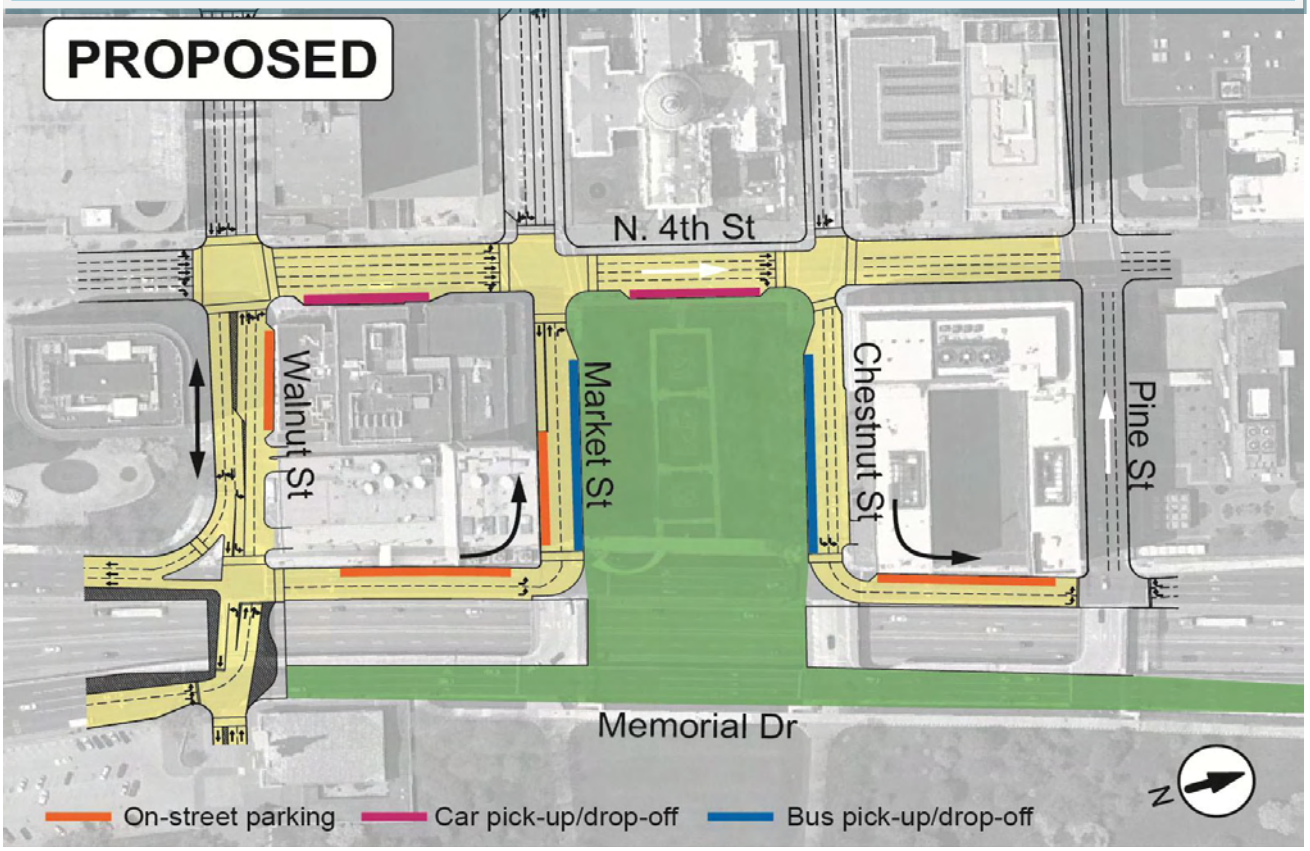
1) Construction of a "park over the interstate" located between Market and Chestnut Streets.

Currently, there is an issue of safety with pedestrians trying to cross from downtown to the park. Many pedestrians park downtown and cross four to six lanes of traffic on Memorial Drive to access the park. Because of this, a deck is proposed for construction over I-70 to provide safe, unrestricted access for visitors. Construction of the deck will require portions of northbound Memorial Drive from Walnut Street to just north of Pine Street and southbound Memorial Drive from Chestnut Street to Market Street to be closed permanently.

Associated with the closure of portions of Memorial Drive, there is a need for changes to downtown roadways (Figure 1) to better handle the additional traffic that would be re-routed through the downtown area. Changes proposed to the downtown area are:

- A one way northbound movement and roadway narrowing to two through lanes and one parking lane on Memorial Drive between Walnut and Market;
- The removal of the angled parking area and concrete islands along the north side of Walnut Street and the addition of three westbound lanes with reconstruction of the north curb and sidewalk;
- Full reconstruction of the Walnut Street Bridge with the elimination of one eastbound lane and addition of three westbound lanes;
- One lane removal from the Memorial Drive northbound approach to Walnut and removal of the cantilever over the depressed section of I-70;
- Re-striping of 4th Street to handle additional traffic from Memorial Drive.

Figure 1: Proposed Changes to City Grid



With the closure of the Memorial Drive Ramp from eastbound I-70, the City of St. Louis loses a connection to its downtown area. In order to accommodate traffic into the downtown area, additional access will be added at Tucker Boulevard near the new Mississippi River Bridge (MRB). The Tucker Boulevard access ramp will be constructed as a component of the new MRB. Once this is in place, travelers heading east on I-70 will be able to access downtown from the north, conveniently opening a new gateway to the city while the JNEM is upgraded to the south. A reevaluation of the MRB environmental document has been completed to update the NEPA documentation for this project.

Serving as a landmark of the westward expansion of the United States, Jefferson National Expansion Memorial has been a tourist destination for decades. Because of traffic patterns at the time of its completion, largely affected by the Gateway Arch and the affiliated rise of tourism in the areas, Interstate 70 was designed with the fact in mind that much of the incoming traffic movement of the day came to downtown from the north. Changing traffic patterns over the decades have now resulted in traffic entering the downtown area from the south, suggesting that the ramp configuration in the area around JNEM is in need of an update. Current traffic patterns from the south erect circulation barriers (accessing Interstate 70 off the Poplar Street Bridge and Memorial Drive) integrating regional and local traffic and creating a barrier for pedestrians moving to and from the park and downtown.

The Purpose of the Proposed Project

The primary purpose of the project is to improve vehicular access to downtown St. Louis from the south and provide unrestricted access for pedestrians to and from the park grounds and downtown.

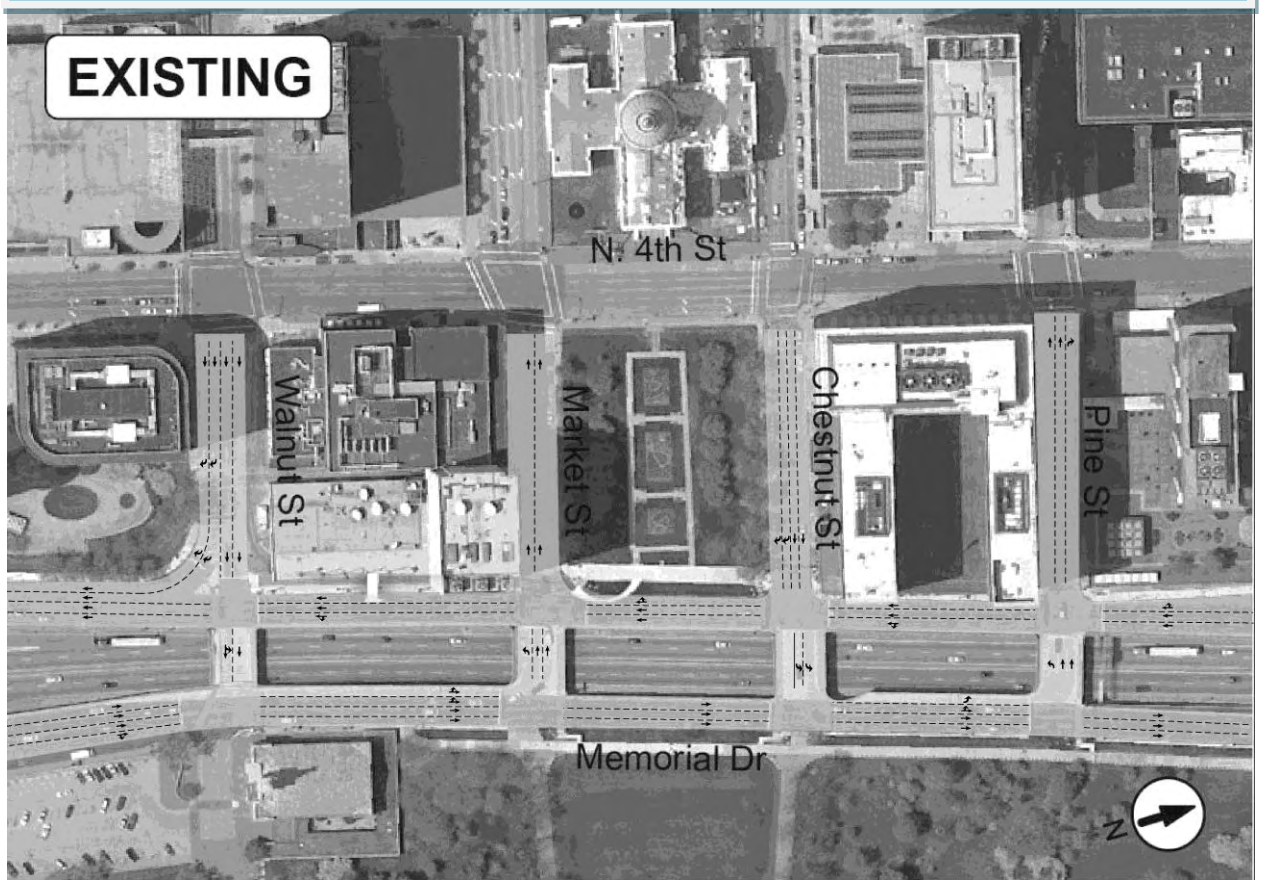
Project Needs

1) Regional redistribution of population and travel demands has shifted in the decades since the JNEM was created, rendering the current configuration of the downtown ramps inadequate. The downtown ramps are currently configured to handle the majority of incoming traffic moving from the north to the south. Traffic numbers, as shown on the Traffic Volume Maps on the Missouri Department of Transportation website at the following address: http://www.modot.mo.gov/safety/trafficvolumemaps.htm, show the movement of traffic in the area has now shifted to more of a south to north orientation. A reconfiguration of the ramps is needed to facilitate this change in traffic movement.

2) Pedestrians and bicyclists wanting to access the park grounds or downtown are currently restricted by Memorial Drive. These travelers must cross 4 to 6 lanes of traffic on Memorial Drive to get from one destination to the other. Safe, unimpeded access is needed to and from the park.

Description of the Existing Facilities

Figure 2: Existing City Grid

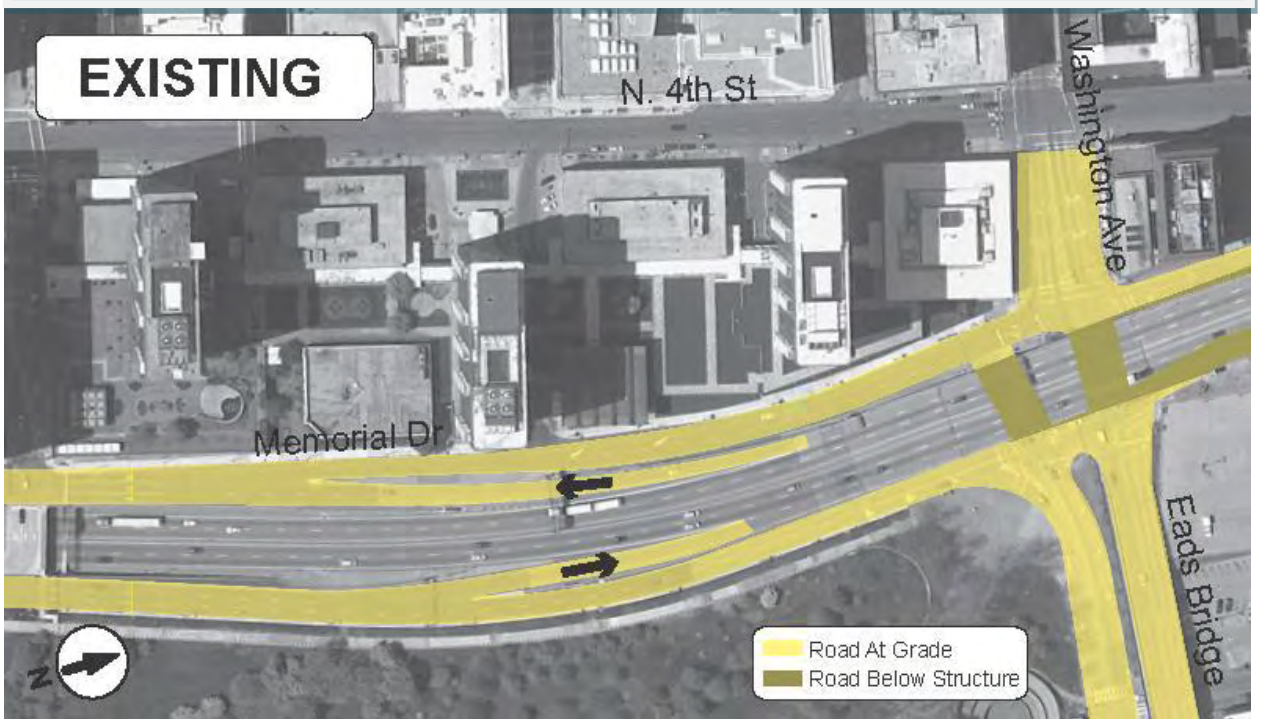


Interstate 70 Ramps

The existing I-70 eastbound exit to Memorial Drive is currently a one-lane, parallel ramp that operates between the elevated and depressed sections of I-70. As it leaves the elevated mainline highway, it descends to the grade of Memorial Drive and expands to three lanes.

The existing I-70 westbound on-ramp from Memorial Drive northbound, just north of Pine Street, is currently a one-lane ramp that operates between the elevated and depressed sections on I-70. This ramp is a parallel acceleration lane that departs Memorial Drive northbound at grade, and then rises to the level of I-70 on the elevated portion. The existing on-ramp adds a lane to the elevated portion of I-70 westbound.

Figure 3: Existing Ramp Configuration



Interstate 70 Depressed Section

I-70 is depressed below grade from approximately Spruce Street on the south end to approximately one block south of Washington Avenue. The roadway is approximately 72 to 76 feet wide between the inside faces of the walls and is comprised of four travel lanes, two eastbound and two westbound. This depressed section of I-70 is currently crossed by four bridges at Walnut Street, Market Street, Pine Street, and Chestnut Street. Contained in the section of I-70 between Spruce and Walnut Streets is a parallel, single lane off-ramp and deceleration lane from I-70 eastbound towards the Poplar Street Bridge, and the northbound section contains a single lane, tapered style on-ramp from the Poplar Street Bridge.

Memorial Drive Northbound from Walnut Street to Washington Avenue

Memorial Drive northbound from Walnut to Washington is a generally straight, asphalt roadway that currently operates as a one-way facility. It begins at the confluence of the I-70 off-ramp to Memorial Drive, and is situated between I-70 and the Gateway Arch grounds. The number of lanes varies to accommodate dedicated left-turning and through traffic. The northbound section of Memorial Drive between Walnut and Market Street is four lanes with a dedicated concrete left-turn lane that is cantilevered over I-70, a shared left/through lane, and two through lanes.

Memorial Drive between Market and Chestnut Street is comprised of three through lanes. Between Chestnut and Pine Street, Memorial expands once again to accommodate a dedicated left-turn lane, similarly cantilevered over I-70, a shared left/through lane, and two through lanes. From Pine Street going north, Memorial consists of three through lanes. About one block north of Pine the westernmost lane diverges from the roadway to begin the on-ramp to I-70 westbound. The two remaining lanes continue to Washington Avenue where the left lane acts as a shared left/through lane and the right lane acts as a shared left/through/right lane. The right turn lane joins Washington Avenue.

Memorial Drive Southbound between Washington Avenue and Spruce Street

Memorial Drive southbound is a three lane section of roadway from one block north of Pine Street to Spruce Street. Along this stretch it is intersected by Pine, Chestnut, Market, and Walnut Streets. Walnut and Chestnut Streets are one way streets heading east out of downtown while Pine and Market Streets are one way streets heading into the downtown area. From Washington Avenue to one block north of Pine, Memorial Drive is a two lane street at Washington Avenue and narrows down to a one lane street when it meets up with the existing I-70 exit ramp to Pine Street.

North Third Street

Currently, North Third Street consists of two segments which run along the eastern side of I-70. The southern section runs from Lacledes Landing Boulevard at the north end to the parking lot at Lucas Avenue. This section of roadway forms the westernmost border of the Laclede's Landing neighborhood. North Third Street in this area is a straight, two-lane local street with parallel parking along its eastern curb.

The northern section of Third Street runs from the western landing of the Martin Luther King (MLK) Bridge to just south of Biddle Street. The western terminus of the MLK Bridge is a one-lane section which widens to two lanes with a left hand exit to a parallel type on-ramp to I-70 westbound. Just beyond the exit, north Third Street widens to four at-grade lanes along the Lumiere Place Casino's west side.

Figure 4: Existing Third Street Configuration

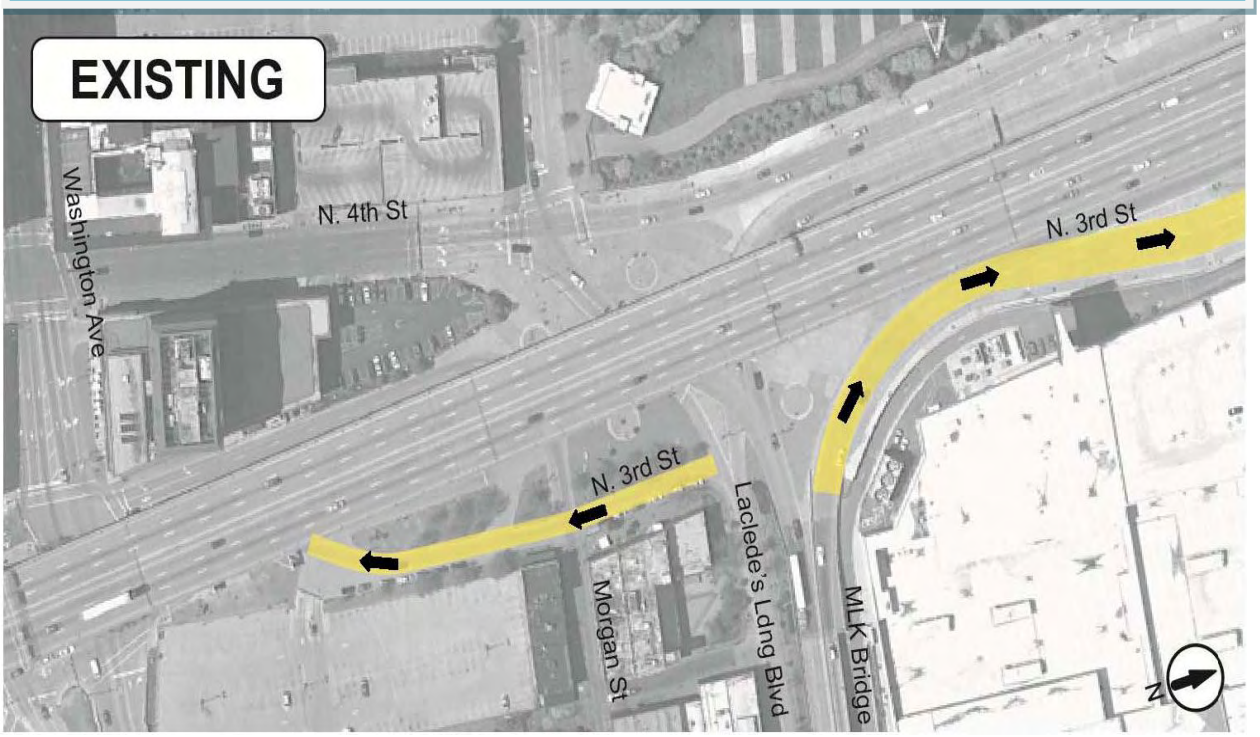
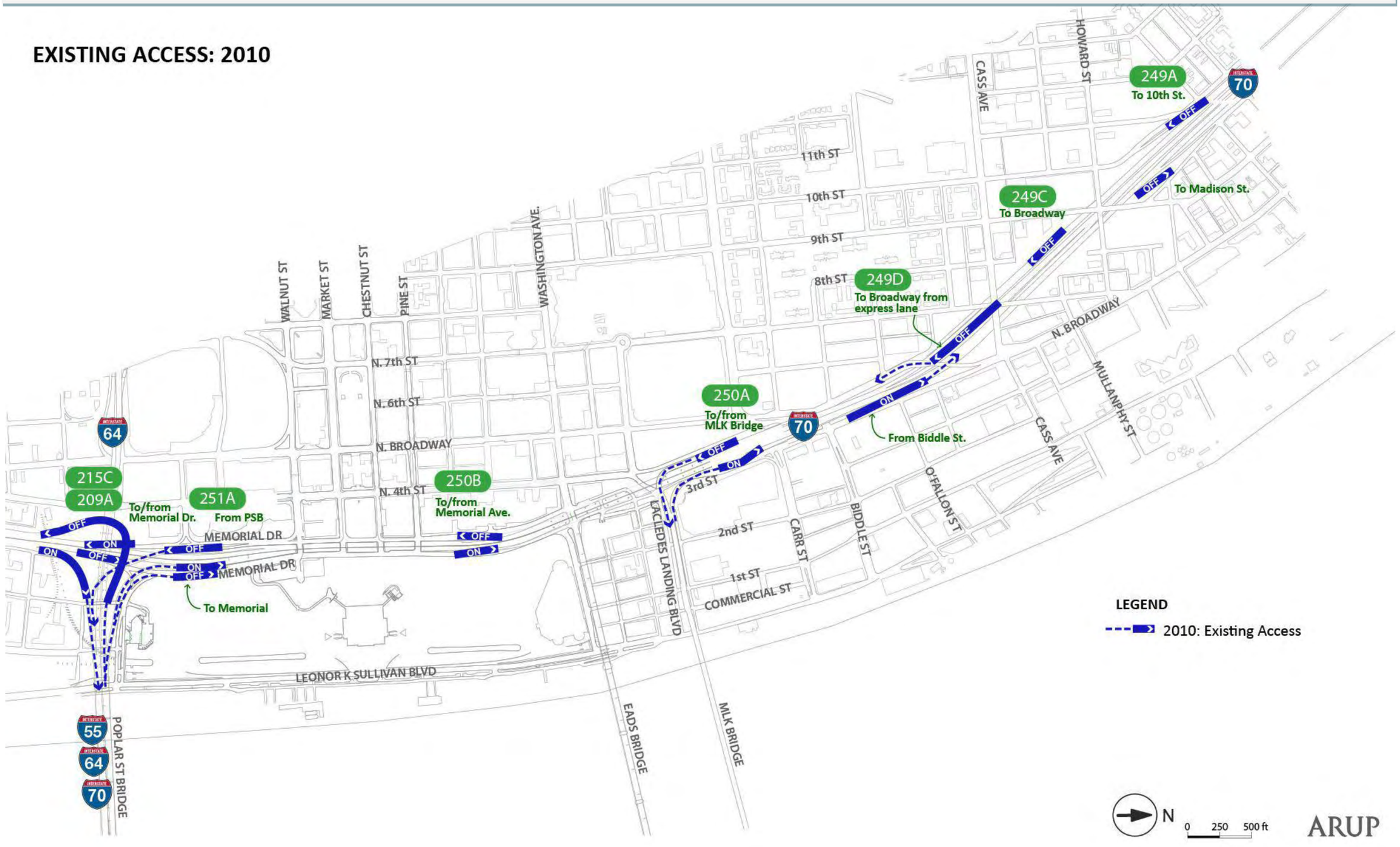


Figure 5: Existing Access 2010



Congestion and Capacity (Traffic Operation)

The term "Level of Service" (LOS) is given to the measure used to describe roadway congestion. Using LOS is a way to describe what a driver would encounter while traveling through an intersection, interchange, or open section of roadway at any given time of day.

Level of service classifies the traffic operation on a roadway with an A to F rating system. LOS A is defined as the ideal traffic operation with free flow of traffic; LOS F is defined as the poorest traffic operation with severe congestion.

Level of Service (LOS)

A characterization of the performance of the highway relating to speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. A level of service of 'A' means the highway is least congested, whereas an "F" is the most congested. (*American Association of State Highway and Transportation Officials Geometric Design of Highways and Streets – 2004*, Chapter 2 Design Controls and Criteria)

Table 1. Level of Service (LOS) Descriptions

Level of Service	Description	Delay (Seconds/Vehicle)
A	Free flow. Low volumes and no delays.	0.0-5.0
B	Stable flow. Speeds restricted by travel conditions. Minor Delays	5.1-15.0
C	Stable flow. Speeds and maneuverability closely controlled due to higher volumes.	15.1-25.0
D	Stable flow. Speeds affected by change in operating conditions. High-density traffic restricts maneuverability.	25.1-40.0
E	Unstable flow. Low speeds, considerable delay, volumes at or near capacity.	40.1-60.0
F	Forced flow. Very low speeds, volumes exceed capacity, long delays with stop-and-go traffic.	60.1 and above

With the changes to roadway design in the project area additional traffic will be thrust upon city streets. Adding traffic to these roadways will cause changes in the level of service that the road will be able to provide over time. The tables below illustrate the existing, construction, and design year level of service that the existing roadways will be able to provide with the improvements made at the Gateway Arch grounds and to Interstate 70.

Table 2. AM (PM) Peak Hour LOS (State Roadways)			
Location	**Existing**	**2015**	**2035**
NB Memorial*	C (B)	A (A)	A
SB Memorial*	C (E)	A (A)	A (A)
EB I-70 Ramp to Memorial	B (B)	Ramp Removed	Ramp Removed
WB I-70 Ramp from Memorial	C (D)	Ramp Removed	Ramp Removed
EB I-70 to 10th Street/Tucker Blvd	B (C)	B (B)	B (B)
***All remaining portions of Memorial Drive were used to determine LOS for 2015 & 2035.**			

Table 3. AM (PM) Peak Hour LOS (City Street Intersections)			
Location	**Existing**	**2015**	**2035**
Walnut and 4th	A (C)	C (C)	C (C)
Market and 4th	C (C)	C (C)	C (C)
Chestnut and 4th	A (B)	A (B)	A (B)
Pine and 4th	B (A)	B (B)	B (B)
Washington and 4th	B (B)	B (C)	B (C)

Safety

A good indicator of roadway safety is the crash rate. To get an idea of the safety of the roadway, the crash rate for the section of roadway in question is compared against the statewide average for similar types of roadways over the same period of time. In the five-year time period from 2006 to 2010, numerous crashes occurred on major roadways in the project area. Rear-end type accidents were the most common crash type on major roadways in the study area with out of control accidents being the second most common type. Table 4 shows the crash rates for the two major roadways in the project area, Interstate 70 and Interstate 55. Crash statistics and safety data summarized or presented in this Environmental Assessment (EA) are protected under federal law. See Appendix A.

Table 4. Crash Statistics I-70/I-55 (2006-2010)			
Location	**Accident Rate (5-yr avg)**	**Statewide Rate (5-yr avg)**	**Most Common Type**
I-70 Westbound	346.95	104.50	Rear End
I-70 Eastbound	368.18	104.50	Rear End
I-55 Southbound	275.93	104.50	Out of Control
I-55 Northbound	435.54	104.50	Rear End

As depicted in Table 4, the crash rate in the project area is well above the statewide rate for similar types of roadways. This increase in crashes can be attributed to the reoccurring (and increasing) congestion near and around the Poplar Street Bridge (PSB) connector ramps. A separate project is under consideration to address the congestion issue at the PSB ramps. This project consists of the removal of the eastbound I-70 ramp and converting the two southbound ramps into dual lane ramps. These improvements combined with the completion of the New Mississippi River Bridge will reduce congestion and improve safety at the PSB.

Alternatives Considered

The alternatives initially considered include the No-Build Alternative and three build alternatives.

No-Build Alternative

The No-Build Alternative would make no improvements to I-70 in the project area other than normal highway maintenance. Normal maintenance includes pothole patching, pavement replacement, striping, and overlays. No new major construction would be included with this alternative.

The No-Build Alternative **does not**:

- ☑ Account for the shift in traffic movement
- ☑ Provide unrestricted pedestrian access from the park and downtown
- ☑ Provide additional access to downtown St. Louis from the north

The No-Build Alternative does not meet the project needs cited earlier in the "Project Needs" section. This alternative will still be carried forward and will be used as a comparison to other alternatives and to justify the improvements needed to existing I-70.

Alternative 1

Alternative 1 consists of the closure of Memorial Drive northbound between Walnut Street and Washington Avenue and southbound between Chestnut Street and Market Street, the construction of a deck spanning the geographically depressed section of I-70 between Market Street and Chestnut Street and the "flipping" of the ramps on I-70 at Washington Avenue. Also included in this alternative is the connection of two sections of Third Street by "punching" through the existing concrete island barrier at the MLK Bridge and a new ramp connection to downtown from eastbound I-70 at Tucker Boulevard near the new Mississippi River Bridge. This alternative also calls for the removal of the bridges at Walnut, Market, Chestnut, and Pine Street. A new bridge will be constructed at Walnut Street and a park over the highway will be constructed from Market to Chestnut Street.

Figure 6: Alternative 1

The closure of Memorial Drive will result in northbound traffic from the Poplar Street Bridge shifting to adjacent city streets; therefore the on-ramp to I-70 from Memorial Drive will no longer be needed. This will create the need for a new connection to the Gateway Arch grounds and downtown, resulting in the "flipping" of the ramps at Washington Avenue. The present on-ramp to westbound I-70 from Memorial Drive will be an off ramp from westbound I-70 on to the remaining section of Memorial Drive at Washington Avenue. The ramp that now allows traffic to exit off of eastbound I-70 on to southbound Memorial Drive will be converted so that traffic will now be able to get on to eastbound I-70 from southbound Memorial Drive.

Figure 7: Proposed Ramp Configuration

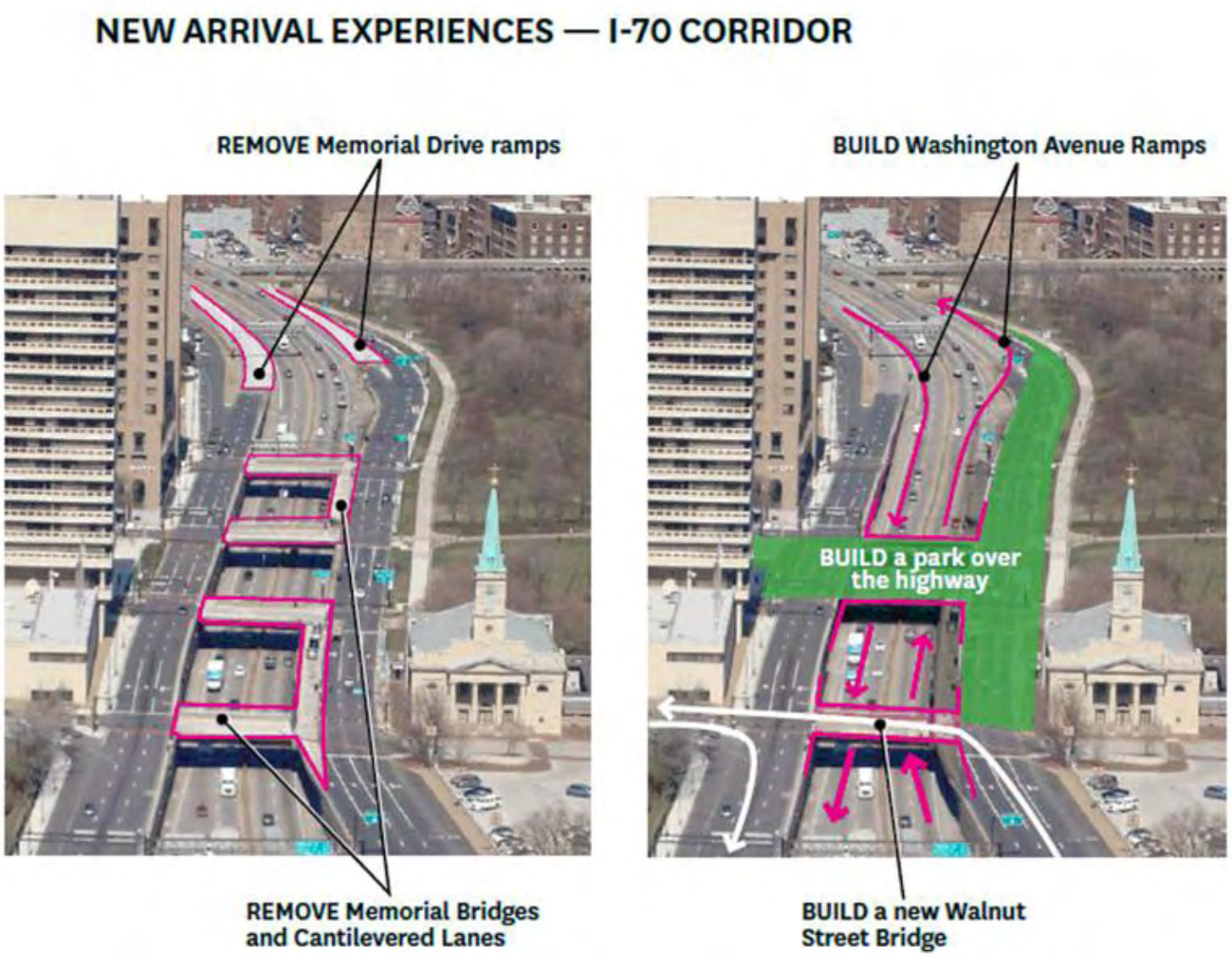
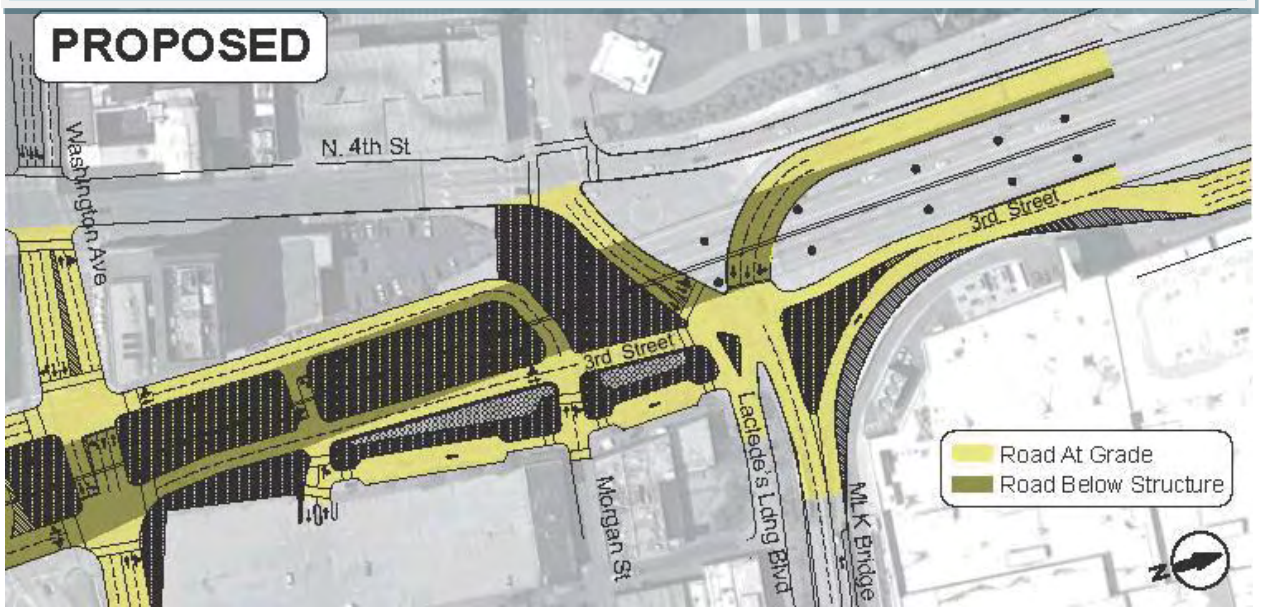


Figure 8: Proposed 3rd Street Changes



Alternative 1 **does**:

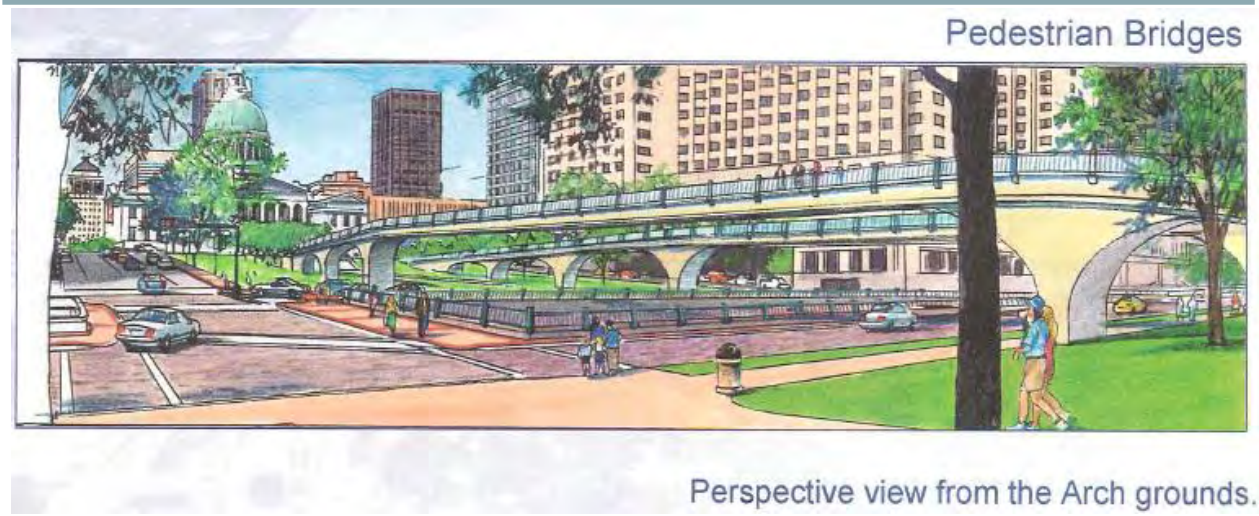
- ☑ Account for the shift in traffic movement
- ☑ Provide unrestricted pedestrian access from the park to downtown
- ☑ Provide additional access to downtown St. Louis from the north

Alternative 1 would satisfy the purpose and need for action stated earlier in this document. It would provide better southern access from I-70 into downtown and the JNEM area, as well as provide an unrestricted access point for pedestrians and cyclists to and from the downtown area and the park. Because of this, Alternative 1 will be retained for detailed analysis in the document.

Alternative 2

Alternative 2 includes the construction of a pedestrian bridge extending from Luther Ely Smith Square Park over to the JNEM grounds, which was Eero Saarinen's original vision of the pedestrian access into Jefferson National Expansion Memorial. This alternative was evaluated in several capacities with the overall challenge being to raise the new pedestrian bridges over the top of northbound and southbound Memorial Drive and still meet the American with Disabilities Act (ADA) requirements. In order to get the proper amount of clearance over Memorial Drive, without using switchbacks, the pedestrian bridges would be at a grade of more than 2% which does not meet ADA compliance. No changes to existing state and city roadways are associated with this alternative.

Figure 9: Gateway Arch Grounds View of Alternative 2



In trying to achieve clearance over Memorial Drive in both directions, the grades of the pedestrian overpass were difficult to achieve and still meet ADA standards. This pedestrian bridge built with the proper switchbacks in order to meet ADA standards, would then obstruct the view shed of the JNEM from the Old Courthouse and Luther Ely smith Square Park. In addition, access to the entry point to these ramps was limited to a confined location. This option does not change the access for vehicular traffic or remove the conflict of pedestrians crossing Memorial Drive.

Figure 10: Aerial View of Alternative 2

*Artist rendering of Alternative 2 was prepared for the NPS GMP in 2009 when Old Busch Stadium was still in use.

Alternative 2 **does not**:

- ☑ Account for the shift in traffic movement
- ☑ Provide unrestricted pedestrian access from the park to downtown due to the inability to meet ADA standards without taking away from the view of the park.

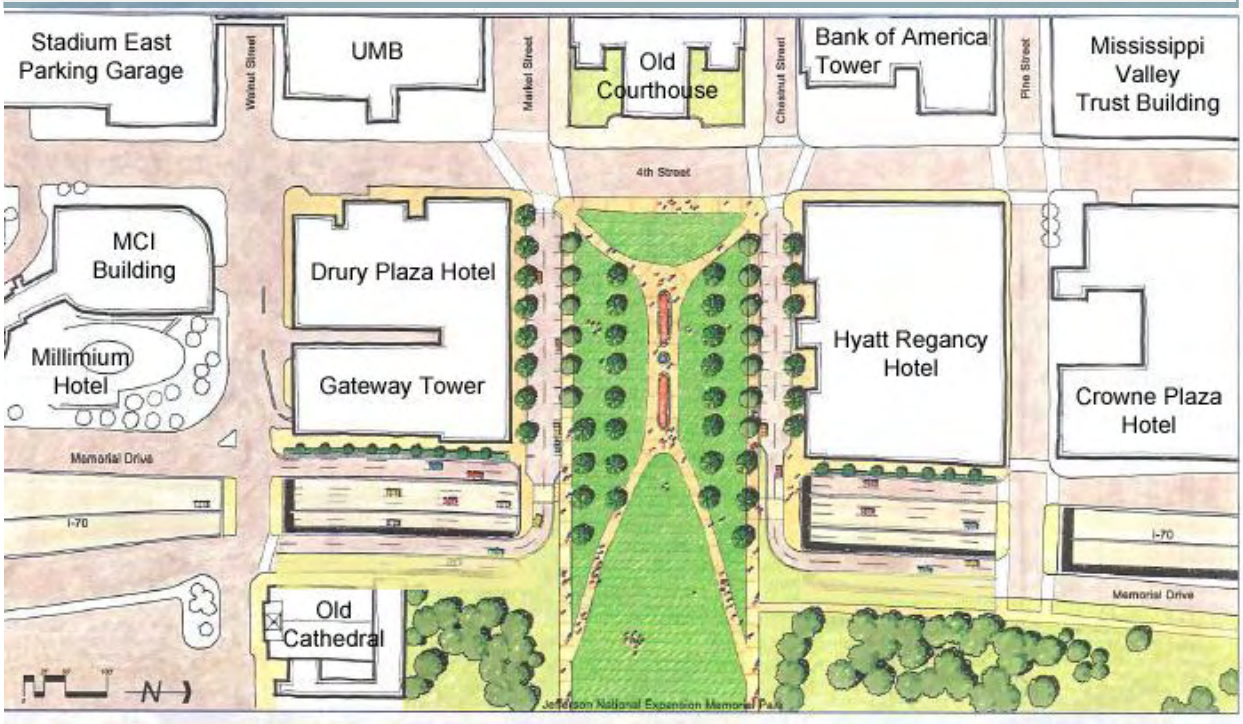
Alternative 2 would not satisfy the purpose and need for action stated earlier in this document. It would not provide better access from I-70 from the south into downtown and the JNEM area and would not provide an unrestricted access point for pedestrians and cyclists to and from the downtown area and the park. For these reasons, Alternative 2 will not be retained for detailed analysis in the document.

Alternative 3

Alternative 3 will remove Memorial Drive east of I-70 between Market and Chestnut Streets and construction of a land bridge over the interstate to connect the park with Ely Smith Square Park. With the removal of this one block section of Memorial Drive motorists traveling north on Memorial Drive will be forced to turn left onto Market Street, right on to 4th Street, and then right onto Chestnut Street to access the portion of Memorial Drive on the north side of the land bridge. Memorial Drive north of the land bridge will operate as it does today.

Motorists using southbound Memorial Drive will not have access to either Chestnut or Market Streets. With this alternative, southbound Memorial Drive will be reconstructed to go under Chestnut Street, the "Park over the Highway", and Market Street. Motorists entering downtown onto southbound Memorial Drive will be required to either turn right onto Pine or Walnut Street to enter the downtown area.

Figure 11: Alternative 3



Alternative 3 **does**:

- ☑ Provide unrestricted pedestrian access from the park to downtown

Alternative 3 **does not:**

- ☑ Account for the shift in traffic movement

The traffic patterns are greatly affected when doing this alternative. Traffic enters northbound Memorial Drive from two access points: Westbound Poplar Street Bridge from Illinois and Northbound Interstate 55. The combination of these two traffic movements far exceeds the capacity causing traffic to back up onto both interstates in a stop condition posing a serious safety condition for motorists.

This exact option was auditioned during the 2009 Major League Baseball All Star Series. In order to alleviate the safety problems associated with this design, the northbound Interstate 55 ramp had to be closed in order to eliminate the backups occurring on the Poplar Street Bridge. No traffic model was needed to evaluate traffic conditions, since we were able to change field conditions to replicate this option for a true representation of how traffic would flow if this option was chosen.

Alternatives Dismissed from Further Evaluation

Alternatives 2 and 3 were dismissed from further evaluation for a variety of reasons. Alternative 2 was dismissed from further consideration due to its lack of compliance with ADA standards and disruption of the view shed of the memorial. Construction of the proper switchbacks to gain the clearance needed for the existing roadways would obstruct the view shed of the JNEM from the Old Courthouse and Luther Ely Square Park. Alternative 3 was determined not to be a reasonable alternative because traffic patterns are greatly affected when doing this alternative. Traffic enters northbound Memorial Drive from two access points: Westbound Poplar Street Bridge from Illinois and Northbound Interstate 55. The combination of these two traffic movements far exceeds the capacity causing traffic to back up onto both interstates in a stop condition posing a serious safety condition for motorists.

For the above mentioned reasons, Alternatives 2 and 3 will not be carried on in this EA for further evaluation.

Alternatives Retained in this EA

Alternative 1 will be retained and evaluated in detail for this EA along with the No-Build Alternative, which serves as a baseline for evaluating the proposed build alternative. Alternative 1 is being retained because it is the only alternative that meets the purpose and need established earlier in the document and preliminarily looks to have minimal environmental and socioeconomic impacts.

Preferred Alternative

MoDOT has designated Alternative 1 as the Preferred Alternative to address transportation needs associated with the CAR2015 initiative. The Preferred Alternative will include the closure of Memorial Drive northbound between Walnut Street and Washington Avenue and southbound between Chestnut Street and Market Street, the construction of a park over the highway spanning the geographically depressed section of I-70 between Market Street and Chestnut Street, and the "flipping" of the ramps on I-70 at Washington Avenue. Also included in Alternative 1 is the connection of two sections of Third Street by "punching" through the existing concrete island barrier at the MLK Bridge and a connection to downtown from eastbound I-70 at Tucker Boulevard. The bridges at Walnut, Market, Chestnut, and Pine Street will be removed and a new Walnut Street will be constructed and configured to handle the additional traffic from northbound Memorial Drive. A new land bridge will be constructed from Market to Chestnut Street.

Figure 12: Aerial Rendering of Preferred Alternative

Figure 13: Future Access 2015

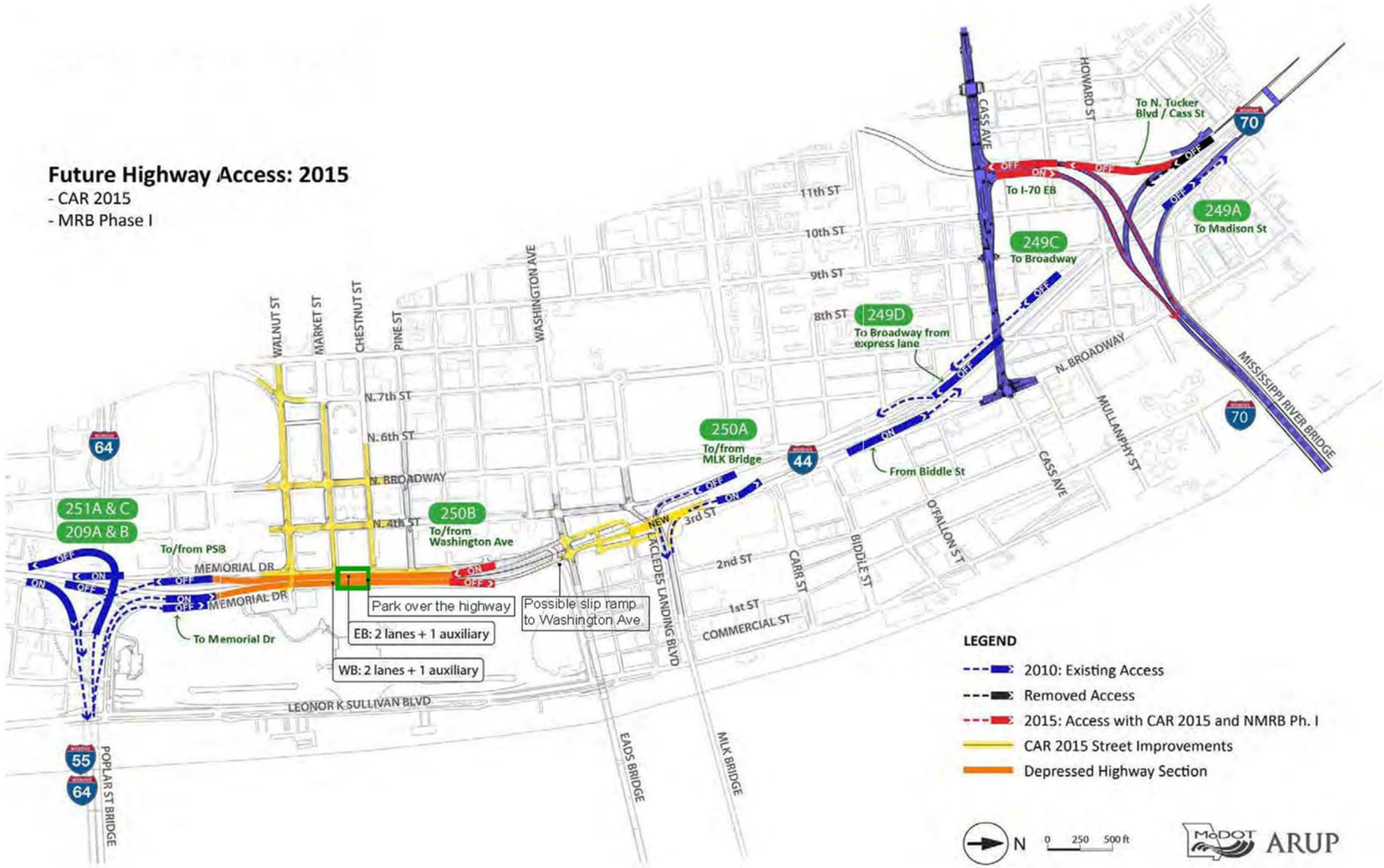


Table 5: Summary of Potential Environmental Impacts		
	No-Build Alternative	**Preferred Alternative**
Costs		
Construction (Millions)	**0**	**47.3**
Right of Way	**0**	**0**
Total	**0**	**47.3**
Right of Way Impacts		
Residential Relocations	**0**	**0**
Commercial Relocations	**0**	**0**
Right of Way (New)	**0**	**0**
Environmental Impacts		
Potential Section 4 (f) Properties (Parklands)	**0**	**0**
Wetlands	**0**	**0**
Creek/Stream/River Crossings	**0**	**0**
Farmland (acres)	**0**	**0**
Floodplain	**No**	**No**
Threatened and Endangered Species	**No**	**No**
Hazardous Waste	**0**	**0**
Cultural Resource Impacts		
Cemeteries	**0**	**0**
Previously Recorded Archaeological Sites	**0**	**0**
Potential Historic/4(f) Properties	**0**	**0**

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Proposed Projects Potential Effects on the Natural and Social Environment

Land Use

Interstate 70 has been located on park ground via a transportation easement since the construction of the highway. With the construction of the land bridge over the highway, the park regains this portion of its grounds for its intended use and a connection to Luther Ely Smith Square that was lost is now returned for a more completed visitor experience to the JNEM. Because this project has no new right of way, the rest of the surrounding areas land use and zoning will remain unchanged.

Prime and Unique Farmland

Recognizing the importance of protecting farmland from conversion to non-agricultural uses by minimizing the impacts to it from federally funded programs, Congress passed the Farmland Protection Policy Act (FPPA) in 1981. Before farmland can be used by a federal project, it must be determined if prime, unique, statewide, or locally important farmland would be converted to non-agricultural uses.

The project in its entirety falls within the city limits of St. Louis. Therefore, it meets the Farmland Protection Policy Act (FPPA) definition of "land committed to other uses," and farmland impact will not be further evaluated for this project.

Social/Economic Characteristics

Demographic Characteristics

This section provides insight into the population characteristics of the immediate project area and the region. Accordingly, demographic information was compiled for the City of St. Louis and the State of Missouri (U.S. Census Bureau, 2000 and 2005-2009).

Population statistics for the cities, county, and state from 2000 and 2005-2009 are provided in Table 6. The population has increased from 2000 through 2009 for the city and the state of Missouri, with a stronger increase in the census tracts directly surrounding the project area. The population for St. Louis County has decreased since the 2000 Census.

Census Tracts

Census Tracts are small, relatively permanent statistical subdivisions of a county or equivalent entity that are updated by local participants prior to each decennial census as part of the Census Bureau's Participant Statistical Areas Program

Table 6. Population				
Year	**Census Tracts**	**St. Louis City**	**St. Louis County**	**State**
2000	7,029	348,189	1,016,315	5,595,211
2005-2009	8,707	355,078	994,923	5,904,382
% Change 2000-2009	+19.27%	+1.94%	-2.15%	+5.24%

As detailed in Table 7, the population of persons 18 and under has decreased or remained relatively the same in all locations since the 2000 Census. The population of persons 18 and 64 has increased in the area while the population of persons aged 65 and older has decreased or remained relatively unchanged in the area from 2000 to the 2005-2009 Census.

Table 7. Age Characteristics % Change (2000-2009)				
Age	**Census Tracts**	**St. Louis City**	**St. Louis County**	**State**
Under 18	2,118 +2.22%	81,973 -9.18%	238,913 -7.13%	1,431,156 +0.35%
18-34	2,998 +35.36%	98,390 +7.89%	205,116 -2.93%	1,346,721 +5.73%
34-64	3,156 +23.16%	133,538 +9.91%	408,397 +0.66%	2,329,827 +8.00%
Over 65	435 -36.78%	41,177 -15.97%	142,497 -0.72%	769,678 +5.10%

In terms of racial characteristics for the area, the White population for St. Louis County varied from 76.9% in 2000 to 73.4% in 2005-2009 while the Black/African American population varied from 18.9% to 21.3% for the same location and times.

Table 8. Racial Characteristics % Change (2000-2009)				
Race	**Census Tracts**	**St. Louis City**	**St. Louis County**	**State**
White	2,215 +40.18%	165,597 +7.97%	729,980 -7.03%	4,955,606 +4.21%
Black/African American	6,307 +12.76%	171,272 -3.71%	211,464 +9.04%	658,633 +5.55%
American Indian	14 100.00%	1,042 -0.77%	1,548 -28.10%	23,624 -10.90%
Asian	62 +19.35%	7,384 +4.18%	31,041 +30.63%	85,215 +29.09%
Pacific Islander	0 0.00%	94 -9.57%	517 +15.47%	4,505 +31.83%
Other Race	76 +81.58%	2,913 +6.49%	6,485 +30.35%	60,948 +25.31%

Employment Impacts

Employment impacts are measured by jobs lost and jobs generated by the proposed project. Under the proposed action, no employers in the project area are displaced.

Positive economic effects may be realized during the construction period due to the expenditure of public funds within the project area. This includes direct income for construction workers which may be expended for goods and services within the area. Indirect economic benefits are expected due to multiplier effects of capital investments whereby local materials and suppliers may benefit from providing goods to the construction contractor for the project.

The construction of the pedestrian bridge has the potential to increase the amount of visitors to both the downtown area and the Gateway Arch. Both of these areas could see an increase in revenues due to the increase in visitors to the area.

Pedestrian and Bicycle Traffic

Currently pedestrians and cyclists are at risk trying to access the park grounds from downtown and vice versa. In order to get back and forth, they have to cross four to six lanes of traffic on Memorial Drive mixing everyday traffic with pedestrians and cyclists.

As part of the proposed project, the Pine Street Bridge will be removed therefore removing a connection from downtown to the north end of the park. Even though this connection is lost, a new more safe connection will be provided with the construction of the "lid" over I-70. With the closure of Memorial drive in this area; pedestrians, cyclists, and park visitors will now have an unimpeded means to travel from the downtown area to the park grounds, making the area safer for both pedestrians as well as motorists.

Environmental Justice

Title VI of the 1964 Civil Rights Act prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance. Title VI seeks to ensure that all groups and individuals have the right to access and participate in the transportation decision-making process. The 1994 Executive Order 12898 directs federal agencies to take steps to ensure that minority or low-income neighborhoods are not subjected to disproportionate impacts from projects.

Environmental justice seeks to:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on low-income populations
- Ensure full and fair treatment of all people and their involvement in the transportation decision-making process regardless of race, color, national origin, age, or income.
- Prevent the denial of, reduction in, or significant delay in benefits received by minority and low-income populations.

Impacts caused by the project such as health risks, loss of neighborhood cohesion, excessive noise, reduced mobility, or loss of residence are considered and efforts are made to avoid or minimize these issues. If negative impacts cannot be resolved through avoidance or minimization, they may be mitigated through such solutions as sound walls or designing alternative methods of access to avoid isolating communities or important elements within a community.

Groups that are included in the analysis for environmental justice include minority persons defined as any person who is African American, Hispanic, Asian American, American Indian, or Alaskan Native. Also included in the groups for environmental justice are low income populations. The U.S. Department of Health and Human Services 2010 Poverty Guideline is $22,050 for a family of four.

The project corridor was evaluated to identify the presence of low income or minority populations and the potential impacts to them in accordance with Executive Order 12898. While both low income and minority populations were identified in the general area surrounding the proposed project, no disproportionately high and adverse human health or environmental effects to these groups will occur from the proposed action.

Community Cohesion

Geographically, a community can refer to anything from a neighborhood, to a city, state, or even a nation. The most consistent aspect of any of these communities is that they all have a residential component. Within the immediate area surrounding the proposed action the primary land use tends to be commercial and recreational; there are no residential neighborhoods being directly impacted.

Due to the lack of new right of way, the proposed action does not disrupt current land use patterns or community components, cause a considerable change in communities, or result in community segmentation. The proposed action should improve current land use patterns by improving the local travel network, pedestrian access across Interstate 70, and the view of the JNEM.

Community Facilities

The proposed action would have both positive and negative impacts on the JNEM. This includes short-term impacts associated with construction activities, and long-term impacts once construction is completed. These impacts have been documented throughout the preceding analysis and the discussion of construction impacts beginning on page 37.

There will be no other impacts to public parks, recreational facilities, schools, private recreational areas or churches. While people that regularly work or visit the area may need to learn new directions of travel; with the exception of temporary impacts during construction, the overall patterns should remain very similar and the proposed action should benefit access. Police and fire protection should benefit from the proposed action due to improved access and reduced congestion that will improve response time of emergency vehicles.

Noise

Sound is an element of daily life that we call noise when we perceive it as unpleasant, unwanted, or disturbingly loud. Noise is analyzed to understand the potential effect of traffic and construction noise on public health and welfare.

MoDOT's noise policy is derived from the Federal Highway Administration's (FHWA) noise policy. These policies require consideration of potential noise impacts for Type 1 projects. Type 1 projects are those that involve construction of new highways or new alignments, lane additions, or significant changes to vertical or horizontal alignments of existing facilities. A change in vertical alignment is considered significant if it exposes line of sight between receptors and a traffic noise source (removing a hilltop between a road and residences). Halving the distance between a traffic noise source and receptors is considered a significant change in horizontal alignment.

This project will not cause a change in vertical alignment or halve the distance between receptors and traffic noise sources and very likely will provide greater attenuation from I-70, which is the primary highway noise source in the project area. Noise will be less based on experience and the physical characteristics of noise. The vast majority of noise, even in a downtown area such as this, is generated by the mainline interstate traffic. Since this project is providing a physical obstruction to the major noise source, it logically follows that less noise will be leaving the interstate. This project qualifies as a Type III project and is exempt from noise analysis.

Type III Project: A proposed Federal or Federal-aid project that does not meet the criteria for Type I or Type II is designated as a Type III project. Type III projects do not require noise analysis. Examples of Type III projects are rehabilitations, bridge replacements, shoulder additions, and turning lanes.

Threatened and Endangered Species

The Endangered Species Act of 1973 provides for the protection of threatened and endangered species, both plants and animals, and the habitats that are considered critical to the survival of these species, e.g., breeding, nesting, roosting, and foraging areas.

The U.S. Fish and Wildlife Service (USFWS) is empowered as the chief administrative, regulatory, and enforcement agency regarding threatened and endangered species and their critical habitats. The State of Missouri also maintains endangered species legislation that protects those species which have been determined to be endangered in the state. The Missouri Department of Conservation (MDC) is the administrative, regulatory, and enforcement agency for state sensitive species.

The proposed improvements in the project area were reviewed by MoDOT's Threatened and Endangered Species specialist for any areas of concern regarding threatened and endangered species. Based on this review and the nature of the project, there does not appear to be any areas of concern for federal or state listed species of concern.

Wild and Scenic Rivers

The National Wild and Scenic Rivers Act of 1968 established a national system of rivers to be preserved in free-flowing condition, with their immediate environment protected. Congress selected certain rivers that possess outstandingly remarkable outdoor values. They established an initial system of eight rivers and set up methods and procedures for adding new rivers to the system.

The Nationwide Rivers Inventory (NRI) is a register of rivers that may be eligible for inclusion in the National Wild and Scenic Rivers System. Rivers are placed on the NRI based upon the degree to which they are free-flowing, the degree to which the rivers and their corridors are underdeveloped, and the outstanding natural and cultural characteristics of the rivers and their immediate environment. There are three classifications of rivers in the system: wild, scenic, or recreational depending on the level of development near the stretch of river. There are no designated wild, scenic or recreational rivers in the project area.

Air Quality

The Clean Air Act (CAA) requires that the EPA set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, Carbon Monoxide, Lead, Nitrogen Dioxide, Particulate Matter (PM_{10}), Particulate Matter ($PM_{2.5}$), Ozone, and Sulfur Dioxide. The Clean Air Act established two types of NAAQS for pollutants considered harmful to public health and the environment. Primary standards set limits to protect public health, including health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

Transportation can contribute to four of the six NAAQS pollutants: ozone, carbon monoxide, particulate matter, and nitrogen dioxide. Transportation conformity with the NAAQS, as required by the CAA, ensures that federally funded or approved transportation plans, programs, and projects conform to the air quality objectives established in the State Implementation Plans (SIP). MoDOT is responsible for implementing the conformity regulation in non-attainment and maintenance areas. The proposed improvements to I-70 and the JNEM are located in an area that is classified as a "non-attainment" area for ozone (O_3) and fine particulate matter ($PM_{2.5}$). This means that current air quality conditions are not in compliance with the National Ambient Air Quality Standards (NAAQS) for the above mentioned elements.

Regionally Significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc. or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.

40 CFR §93.101

This project has been determined not regionally significant for the purpose of regional emissions analysis by the East West Gateway Council of Governments (EWGCOG) in the Transportation Improvement Plan for the St. Louis metropolitan area. Therefore, no air quality analysis will be required.

Floodplains

Floodplains are low lands adjacent to a stream or river that stretch from the banks of its channel to the base of the enclosing valley walls and experiences flooding during periods of high discharge. It includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe, which are areas covered by the flood, but which do not experience a strong current.

Executive Order 11988 "Floodplain Management", Federal Highway Administration (FHWA) policy and procedures in 23 CFR 650, and other federal floodplain management guidelines direct agencies to evaluate floodplain impacts for proposed actions. With Executive Order 11988, the base, or one percent annual chance, flood was adopted as a standard for use by all federal agencies. The base flood is the flood that has a one percent chance of being equaled or exceeded each year. The base flood is commonly labeled as the "one percent flood".

There is no regulatory floodway or one percent floodplain within the project limits. Therefore, a floodplain development permit will not be required for the construction of this project.

Federal Emergency Management Agency (FEMA) Buyout Properties

The Flood Disaster Protection Act of 1973, as amended by the Disaster Relief and Emergency Assistance Act of 1988 (The Stafford Act), identified the use of disaster relief funds under Section 404 for the Hazard Mitigation Grant Program (HMGP), including the acquisition and relocation of flood damaged property. The Volkmer Bill further expanded the use of HMGP funds under Section 404 to "buyout" flood damaged property, which had been affected by the Great Flood of 1993.

There are no FEMA buyout properties located within the project limits.

Water Quality

Water quality is defined for a particular body of water by comparing the physical, chemical, and biological characteristics of the water with a set of standards. The U.S. Environmental Protection Agency (EPA) sets water quality standards based on what the water is being used for. Some uses are drinking, swimming, and keeping fish and other water animals alive.

This project will utilize all applicable Best Management Practices (BMPs) to ensure protection to any waterways in the project vicinity. Storm runoff from the new land bridge and any other improvements planned for downtown will be collected in an underground drainage system as per the Metropolitan Sewer District and MoDOT requirements. No storm water runoff from the new land bridge will be allowed to free fall onto I-70 below.

Wetlands and Waters of the U.S.

The Clean Water Act of 1972 (CWA) requires an evaluation of every project to determine whether the project could have a negative impact on any waters of the U.S. including wetlands, streams, ponds, and special aquatic sites. Section 404 of the CWA requires that all federal, state, and public entities obtain a permit from the U.S. Army Corps of Engineers (USACOE) before placing dredged or fill materials into waters of the U.S. Section 401 (CWA) requires that water quality certifications be obtained from the Missouri Department of Natural Resources for any activity that results in discharges into streams or jurisdictional wetlands.

National Wetland Inventory maps, United States Geological Survey (USGS) topographical maps, and a field survey to determine if unmapped wetlands are present were used to assess potential impacts for the proposed highway improvements. After these measures to assess impacts to Waters of the U.S. were conducted, it has been determined that this project will not have any impact to wetlands, streams, ponds, or special aquatic sites. Therefore, this project will not require a Section 404 or Section 401 permit.

Historic and Archaeological Sites

The consideration of cultural resources is a critical part of MoDOT project development. MoDOT must comply with federal and state environmental laws and regulations designed to protect significant cultural resources.

Cultural resources are the evidence of human activity on the land. They can include buildings or structures such as bridges. Sites including battlefields and places where Native Americans stopped to make tools can also have evidence of human activity. Not all cultural resources are historically significant or are eligible for listing on the National Register of Historic Places (NRHP).

NRHP Eligibility Requirements

To be eligible for the NRHP, properties generally need to be 50 years old and fulfill at least one of the four Criteria for Evaluation, meaning they must be:

- Associated with historic events of broad patterns of history,
- Associated with significant persons,
- Significant for their design or construction, or
- Yield information important in prehistory or history

Properties must also be fairly unaltered so they possess historic integrity.

Properties that are eligible for listing on the NRHP are called "historic properties." These properties meet one of the four criteria of evaluation and possess integrity of character defining features.

Under Section 106 of the National Historic Preservation Act, federal agencies are required to consider the effects of their projects on "historic properties". To meet this requirement for Federal Highway Administration sponsored projects in Missouri, MoDOT cultural resource specialists survey projects and evaluate the historical significance of the resources and the project effects on historic properties.

Architecture

There are eight properties listed on the National Register of Historic Places (NRHP) immediately adjacent to the project area, six are individually listed and two are historic districts. The individually listed resources are the American Zinc, Lead & Smelting Company Building, the International Fur Exchange Building, the Missouri Athletic Club Building, the J. Kennard & Sons Carpet Company Building, the Peabody Coal Company National Headquarters Building and the Gateway Arch. The two historic districts are the Laclede's Landing Historic District and Jefferson National Expansion Memorial. The criteria these resources are listed on the NRHP under and their areas of significance are described in the table below.

Table 9: National Register Listed Properties in the Project Area		
Resource	**Criteria****	**Areas of Significance**
American Zinc, Lead & Smelting Company Building	C	Architecture
International Fur Exchange Building	A	Commerce
Missouri Athletic Club	A, C	Architecture Social History
J. Kennard & Sons Carpet Company Building	C	Architecture
Laclede's Landing	A, C	Architecture Commerce Community Planning Industry
Peabody Coal Company National Headquarters Building	C	Architecture
Jefferson National Expansion Memorial (includes the Gateway Arch, Old Courthouse and the Old Cathedral), National Historic District	A, C	Architecture Art Engineering Law Religion
Gateway Arch and Grounds*	A, C	Architecture Engineering Community Planning

*These properties are also National Historic Landmarks.

** Criteria for evaluation. The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

(A) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(C)) 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.

The project will have no direct effects on any of the individually listed properties or on Laclede's Landing. None of these properties require a rural setting to convey their significance. They were constructed in an urbanized area, and have been part of an urban area for most, if not all, of their existence. The introduction of a changed traffic pattern will not significantly change the setting of these properties, and it is the recommendation of the Missouri Department of Transportation that the project will have no adverse effect on the characteristics that make the properties eligible for listing on the National Register of Historic Places.

The Gateway Arch and surrounding grounds are a National Historic Landmark (NHL) recognized for its national significance. The period of significance for the NHL is between 1935 and 1986, which encompasses the conception of the park to its completion. As an NHL, this property requires consultation with the National Park Service about the effects of projects on its character defining features.

The NHL would not be affected by the MoDOT project. The western border of the NHL abuts northbound Memorial Drive, while the MoDOT project would cover the depressed section of I-70 within the park, this area is outside the NHL. Covering the interstate would also not impact the vistas within the historic designed landscape (e.g. the Gateway Arch, the Old Courthouse, and the Cathedral). After construction, the NPS will be responsible for landscaping the cover in a manner compatible with the park, and is including an analysis of this in the environmental assessment they are preparing for other CityArchRiver 2015 projects.

Bridges

The four bridges to be removed at Pine, Chestnut, Market, and Walnut are all 79-foot concrete box girder spans built in 1963. All are considered to be non-significant and do not fulfill NRHP eligibility criteria. Care will be given, however, in avoiding impacts to the approach to the Eads Bridge, another National Historic Landmark located adjacent to the project.

Archaeology

The removal of Memorial Drive and related improvements along the western boundary of the JNEM has the potential to affect significant archaeological resources. According to the National Park Service (NPS) General Management Plan (2009), there is a low to moderate potential of archaeological deposits in the area of the project; however, the potential increases as you move further into the park. Depending on the location of existing utilities, archaeological testing may be required after pavement has been removed. The improvements to 3rd Street at the Martin Luther King Jr. Bridge may require archaeological testing, again depending on utility locations. The new exit ramp at Tucker Boulevard has already been surveyed for archaeological resources under the current Mississippi River Bridge project and will not require additional testing. The need for archeological investigations in previously unevaluated areas will be made in consultation with the National Parks Service.

Public Lands & Potential Section 4(f)/6(f) Properties

Section 4(f) is part of the Department of Transportation (DOT) Act of 1966 that was designed to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. To be considered Section 4(f) eligible, the property must be publicly owned, except for historic sites, which can be either publicly or privately owned. Section 4(f) eligible sites cannot be impacted by federally funded actions unless there is no feasible and prudent alternative.

The proposed project will be constructed entirely within an existing MoDOT easement on park property. Because this easement exists for transportation purposes, and no other park lands will be converted for such uses, there will be no Section 4(f) eligible issues with the proposed project.

Section 6(f) is part of the Land and Water Conservation Fund (LWCF) Act, which was designed to provide restrictions for public recreation facilities funded with LWCF money. The LWCF Act provides restrictions for public recreation facilities that could include community, county, and state parks, trails, fairgrounds, conservation areas, boat ramps, shooting ranges, etc. Facilities that are LWCF-assisted must be maintained for outdoor recreation in perpetuity and therefore require mitigation that includes replacement land of at least equal value. The subject site was purchased prior to the establishment of the Land and Water Conservation Funds. Therefore, 6(f) is not an issue.

Hazardous Waste Sites

A records review and site inspection was conducted for the project area by MoDOT environmental staff. Sources that were searched for potential hazardous and solid waste concerns include: Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); National Response Center Hotline database; Missouri Department of Natural Resources (MDNR) Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri, Fiscal Year 2009; MDNR Missouri Hazardous Waste Treatment, Storage, and Disposal Facilities List; MDNR Solid Waste Facilities List; MDNR Underground Storage Tank (UST) database; Center for Agricultural, Resource and Environmental Systems; and Missouri Petroleum Storage Tank Insurance Fund database.

Based on the sources reviewed, there were numerous potential hazardous waste sites found within a 2,000 foot buffer area but no sites were found within the project limits. There is always a potential to encounter sites that are unknown. If any of these unknown sites are found during project construction, they will be handled in accordance with federal and state laws and regulations.

Indirect Effects and Cumulative Impacts

Indirect effects are caused by the proposed action and occur later in time, but are still reasonably foreseeable. Indirect effects can include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. (40 CFR 1508.8)

Cumulative impact is the impact on the environment, which results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7)

Indirect and cumulative impacts can be positive or negative depending on the environmental impact of the resource being evaluated. The construction of the pedestrian land bridge over I-70 will provide a safer and more aesthictically pleasing experience for visitiors to the park. The National Park Service (NPS) is currently in the process of evaluating several proposed enhancements to the JNEM through a separate NEPA document. Included in these enhancements is the landscaping of the pedestrian land bridge proposed in this document.

Two projects are currently ongoing or proposed in the area of the project. Presently, the construction of the New Mississippi River Bridge (MRB) north of the project area is underway. Once completed, I-70 traffic will be relocated to the new bridge which in turn will reduce the amount of traffic in the depressed section of I-70 downtown. The other proposed project in the area is the Poplar Street Bridge Project. This project includes the removal of the existing eastbound I-70 connection to the Poplar Street Bridge.

An additional project at Tucker Boulevard is also underway north of the project area to mitigate for the loss of the access to downtown from eastbound I-70. The Tucker Boulevard access ramp will be constructed as a component of the MRB. Once this is in place, travelers heading east on I-70 will be able to access downtown from the north, conveniently opening a new gateway to the city while the JNEM is upgraded to the south. A reevaluation of the MRB environmental document has been completed to update the NEPA documentation for this project.

The study team has determined that this project when combined with other past, present, and reasonable forseeable future projects will have minimal cumulative or indirect impacts on resources evaluated in this document.

Construction Impacts

During construction of the preferred alternative there will be some short-term impacts to the public due to noise, dust, and pollutants discharged by construction equipment as well as impacts to motorized and non-motorized traffic and to businesses in the area. Visitors to the park will be exposed to additional noise during construction and access to the park would be limited arcoss Memorial Drive/I-70. Some parts of the project area will likely be closed to the public and will impact visitors use and experience of the park. Although it would be virtually impossible to totally avoid the kinds of short-term impacts typically associated with the construction phase of a highway project, generally these are among the most readily mitigated impacts.

Pollution control measures outlined in the Missouri Standard Specifications for Highway Construction (http://www.modot.mo.gov/business/standards_and_specs/BEGIN.pdf) will be used to minimize impacts associated with the construction of the Preferred Alternative; these measures pertain to air, noise, and water pollution as well as traffic control (e.g., detours) and safety measures. Best management practices will be employed to minimize or mitigate potential impacts.

Traffic Control/Safety

One of a contractor's first tasks on a construction job is to set up traffic control, that is, the warning signs, channelizers, and barricades needed to keep traffic safely in the right place and out of the way of the contractor's operations. The project would require controlling Interstate 70 traffic as well as traffic on the local city streets in the downtown area. Some disruption is inevitable; however, minimizing it and planning ahead is key to a successful project.

Constructing the bridges over I-70 as well as the roadway work associated with it will have some impact on traffic in the immediate area as the contractor's personnel work around the project site. Vehicles bringing materials in and out will add to the existing traffic in the area. A Traffic Management Plan (TMP) will be developed during project design. A TMP lays out a set of coordinated traffic management stratagies to manage the work zone impacts. Proposed stratagies for managing traffic on this project include staging construction to impact traffic as little as possible, conducting active public information and outreach, scheduling high-impact work for hours off peak traffic times, installing temporary traffic control devices, and possibly enlisting the help of law enforcement if necessary.

Prior to each weeks scheduled work, MoDOT will send a news release out to local newspapers and radio stations giving local commuters information about construction activities that could impact their daily travels. MoDOT also publishes construction-related news releases and information on its web site at www.modot.org for those who have internet access. Work zone impacts and issues would vary through the different stages of construction, making these timely announcements a valuable part of the TMP.

Air Quality

Construction equipment used in highway construction use diesel engines that emit exhaust gases that vary depending on the condition of the equipment, thus making it important to keep equuipment in good operating condition. Emissions from construction equipment will be controlled in accordance with emission standards prescribed under state and federal regulations.

Under dry conditions, traffic or strong winds can cause dust from the soil to become airborne, resulting in impacts to air quality. Contractors are required to control this dust to ensure that it does not leave the project limits, just as they must make efforts to control soil particles that stormwater carries away. Typically, contractors will water the area during dry periods to keep the dust down.

Contractors will comply with all federal, state, and local laws and regulations. They will also work within the requirements of their operating permits issued through the Missouri Department of Natural Resources. Air Quality during construction will be protected to generally accepted levels through project site monitoring and enforcement of these various requirements.

Noise

The most noticable noise generated during construction will occur during the construction of the pedestrian and Walnut Street bridges over I-70 and the installation of bridge pilings. The installation of the steel piles will require the use of a pile driver. Driving piles is much like ringing a bell, in that the sound travels long distances. MoDOT will prohibit pile driving at night. In any case, pile-driving activity would be relatively short in duration, lasting days or weeks until the work is completed. Possible night time activities could include setting bridge girders over I-70 and pouring the concrete bridge decks.

Noise can also be expected from the operation of equipment such as bulldozers, trucks, and other large construction equipment. This type of noise tends to blend in with the normal sounds of a city such as St. Louis with significant truck traffic traveling through the area. To reduce the impacts of construction noise, MoDOT has special provisions in the construction contract requiring that all contractors comply with all applicable local, state, and federal laws and regulations relating to noise levels permissible within and adjacent to the project construction site.

Though it is not anticipated, the use of explosives may be used for the demolition of the bridges over I-70. These blasts would be expected to be limited in number and will be scheduled for daytime occurrence to avoid disrupting residential night time quiet.

Water Quality

During construction activities, the area in the immediate project vicinity will be reduced to bare earth. Because of this, the appropriate erosion and sediment control measures will need to be in place once construction begins to prevent and minimize pollutant and sediment loaded runoff from reaching surface waters and flood areas to ensure that the water quality is maintained in the area.

The Missouri Deparment of Natural Resources (MDNR) regulates the control of runoff from land disturbances and issues a National Pollution Discharge Elimination System (NPDES) permit for the work to MoDOT. MoDOT's Pollution Prevention Plan ensures the design, implementation, management and maintenance of Best Management Practices (BMPs) in order to reduce the amount of sediment and other pollutants in storm water discharges associated with the land disturbance activities; comply with the Missouri Water Quality Standards, and ensure compliance with the terms and conditions of the general permit.

Comments and Coordination

Agency scoping letters and Tribal informational letters were sent to appropriate groups informing them of the project and requesting information on affected resources and any concerns that they may have with the proposed project location and preliminary design. A total of three agencies with potential jurisdiction and 17 tribes were consulted and responses were received from two agencies and three tribes.

The two agencies responding to the scoping letter were the National Park Service (NPS) and the Missouri Department of Natural Resources (MDNR). The NPS accepted the request from MoDOT and FHWA to be a cooperating agency and to collaborate on the preparation of the EA. The MDNR responded to the scoping letter by stating that the proposed project had been reviewed by their office and was determined to have no affect on the JNEM.

The three tribes that responded to the informational letter sent were the Choctaw Nation, Iowa Tribe of Kansas, and the Peoria Tribe. Both the Choctaw and the Iowa Tribe of Kansas responded saying that they have no objection to the project but would like to be notified if any additional consultation is requested or any new historical properties are discovered. The Peoria Tribe responded stating that they were interested in consulting on the project and to be included on all mailing lists pertaining to the site.

MoDOT held a public meeting on April 10, 2012 at St. Louis City Hall to provide the public with information about the proposed project and to obtain comments from interested parties. This meeting was advertised in a press release prior to the meeting date. Representatives from MoDOT, CAR 2015, and the NPS were on hand to answer any questions that were raised about the project and to encourage meeting attendees to write comments down for further consideration. A total of 111 people attended the meeting at City Hall to inquire about the project.

In association with the physical meeting, there was also a virtual public meeting for those who were unable to attend the meeting. All displays and material that was available at the public meeting was posted on the web page and an opportunity to comment was also available online. A total of 786 people logged on to the virtual public meeting to view the displays and leave comment.

Approximately 90 comments were received about the project between the City Hall meeting and the online virtual public meeting. Many of the comments received were in support of the proposed project, but there were a large amount of comments about converting a portion of I-70 in downtown St. Louis into a boulevard and removing the elevated lanes.

There are two key reasons why removal of the I-70 corridor is not feasible:

1) There are significant north-south truck and other vehicle movement that use this section of I-70 and will continue to use it after the new Mississippi River Bridge opens. There are three north-south interstate corridors in St. Louis; I-55/I-70, I-270, and I-170. This traffic would either use the boulevard or divert onto I-270, which already has significant capacity problems. The first would lessen many of the benefits created by the boulevard; the second would further exacerbate one of the region's most significant congestion problems.

2) The CityArchRiver plan for closing the Memorial Drive, which has widespread support, precludes eliminating I-70 and turning it into a boulevard. A primary purpose of the CAR 2015 project is to ease both pedestrian and bike flow from downtown into the Gateway Arch grounds. A four to six lane boulevard would restrict pedestrian and bike access, not improve it. In addition, an at-grade boulevard does not link the Gateway Arch grounds with Luther Ely Smith Square Park and the courthouse.

If at a future time, regional leaders determine that removing the elevated lanes of I-70 is a regional priority and would be beneficial to the region, the preferred alternative design for the Park over the Highway would not preclude that work from happening.

Covering the depressed lanes of I-70 with a landscaped walkway allows for a safe and accessible way to access the Gateway Arch grounds by all tourists and residents, including people with disabilities and young families. The design truly connects the Gateway Arch grounds to the City and the region.

Commitments:

The Alternatives retained and evaluated in detail in this EA have commitments identified in this document. The following is a list of MoDOT's proposed project commitments:

- Pedestrians will have an unrestricted/unimpeded means to travel from the downtown area to the park grounds.
- The proposed project will not cause the existing noise levels to rise.
- The project will utilize all applicable Best Management Practices (BMP's) to ensure protection to all waterways in the project vicinity.
- There will be no encroachment on to the JNEM park grounds outside of the existing transportation easement on park property.
- If any unknown hazardous waste sites are found during project construction, they will be handled in accordance with federal and state laws and regulations.
- Pollution control measures outlined in the Missouri Standard Specifications for Highway Construction will be used to minimize impacts associated with the construction of any alternative.
- A Traffic Management Plan (TMP) will be developed during project design to manage work zone impacts.
- Prior to each weeks scheduled work, MoDOT will send a news release out to local newspapers and radio stations giving local commuters information about construction activities that could affect their daily travels.
- Emissions from construction equipment will be controlled in accordance with emission standards prescribed under state and federal regulations.
- Contractors will water the project area during dry periods to minimize dust.
- Contractors will comply with all federal, state, and local laws and regulations.
- Contractors will work within the requirements of their operating permits issued through the Missouri Department of Natural Resources. Air quality during construction will be protected to generally accepted levels through project site monitoring and enforcement of these various requirements.

- MoDOT will prohibit the driving of piles at night.

- The use of explosives may be used for the demolition of the bridges over I-70. These blasts will be expected to be limited in number and will be scheduled for daytime occurrence to avoid disrupting residential night time quiet.

- MoDOT will coordinate design and construction of the lid with the NPS to minimize the impacts to park resources and visitors.